

Creating A Google-Based Data System *(Introductory)*

A How-To Guide for International Homelessness Campaigns +

Created by: Community Solutions [May 2016]

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INTRODUCTION

Through the 100,000 Homes Campaign, Community Solutions has worked with hundreds of local teams to place 100,000 of the most vulnerable people experiencing homelessness into permanent housing. It has been a privilege to support their efforts to locate homeless individuals and families who are the most vulnerable and connect them as quickly as possible to housing that meets their needs and preferences.

Using a Google platform, the Community Solutions team had built a tool to determine the needs and preferences of people experiencing homelessness and match them to the appropriate housing interventions, *across multiple agencies* for the 100,000 Homes Campaign.


As Community Solutions continues to work with various municipalities both in the U.S. and internationally, we have continued to work with communities on creating a Google-based Data System in order for communities to track their registry week client assessments and analyze their client demographics.

This document provides an overview of how you and your community can create your own Google-based Data System. The guide will review general (introductory) considerations/suggestions on the creation of your Google-based Data System and we will use a sample community's registry week to share practical application to the general considerations/suggestions. More specifically, we will use the sample community's Google-based Data System created to track it's clients who are experiencing homelessness.






If you are a community using the VI-SPDAT (Canadian version 2.0) common assessment and would like to use a preset data system that you can copy, please skip to [PART VII: Premade VI-SPDAT 2.0 \(CANADA\) Data Platform](#).




Lastly, in the spirit of quality improvement, we welcome any suggestions or comments on how this guide may be improved! Please feel free to contact hkim@cmtysolutions.org to share your feedback!

PART I: Overview of Google Account/Drive Docs Editors¹

- A. Creating a google account: If you do not yet have a google account, you may sign up for one here → <https://accounts.google.com/SignUp>
- B. Start by signing in to your account.
 - 1. Go to www.google.com and in the top-right corner, click Sign in.
 - 2. Enter your Google Apps email address (example: joe@company.com) and password.
 - 3. Click .

Now that you're in your Google Apps account, here are a few key features that work the same way across several products:






Feature	Description
	In the top-right corner of any Google page (such as Search or Gmail), click to see which account you're in.
	Click to move between products.
	Click to change product settings.
	Click to search for content specific to the product.
	Click to see more options.

- C. **The Google Drive²**  is an online file storage that is automatically attached with your Google account.
 - a. The Drive is where you may access the Google Docs Editors.
 - i. Store any files or folders from your computer
 - ii. Keep Drive organized with folders
 - iii. Share files with your team
 - iv. Remove, permanently delete, or restore files
 - b. You may access your Drive:
 - i. Using this link → drive.google.com
 - ii. Or after signing in to your Google account, you may access your drive by clicking on the  icon on the top right-hand corner of your browser window, then clicking on the  Drive icon.

¹ More information on Google products can be found on the Google Apps Learning Center website: <https://apps.google.com/learning-center/products/quickstart/#step-1>

² For more info on the Drive: <https://apps.google.com/learning-center/products/quickstart/#step-4>

- D. The Drive is where you may also create, edit, and access the **Google Docs Editors**³. The Docs Editors are collaborative, web-based, “applications” - where each application functions for different purposes:

Editor	Where	Description	Example uses
 Google Docs	docs.google.com	Text documents	Proposals, reports, shared meeting notes
 Google Sheets	sheets.google.com	Spreadsheets	Project plans, budget sheets
 Google Slides	slides.google.com	Presentations	Pitch decks, training modules, team presentations
 Google Forms	forms.google.com	Surveys	Customer satisfaction surveys, group polls
 Google Drawings	drawings.google.com	Shapes, charts, and diagrams	Flowcharts, organizational charts, website wireframes, mind maps

- E. For the purposes of this How-To Guide, we will be focusing mainly on the following three Docs Editors applications:
- Google Docs**
 - Google Sheets**
 - Google Forms**

³ For more info on Docs Editors: <https://apps.google.com/learning-center/products/quickstart/#step-5>

PART II: Understanding Your System Needs

Before jumping in to using your Google account and creating your system, there are some questions for considerations. Below, we have listed out some questions for consideration prior to designing and creating your data system. At the bottom of each question section, we have inserted example responses for a sample community conducting a **Registry Week (RW)**⁴ as a reference for how these questions may facilitate with data system creation.

System Needs: Questions for Consideration

A. What would you like your data system to do/capture? Why and to what end/purpose?

These questions may yield multiple sets of responses and you may also find that some responses come later on in the process. Depending on what you would like your data system to do will influence the data your community may need to obtain, and in turn, can affect the way in which you create your system. Below are some examples of data that communities may want/need to capture. A data system that:

- Houses raw client common assessment responses - in order to identify and enumerate as many people as possible experiencing homelessness. to analyze trends/potential needs amongst those who are experiencing homelessness in the community, to identify the most vulnerable in the community in order to permanently house them as quickly as possible.
- Surveys different providers' housing placement rates over X amount of time - in order to analyze the rate in which clients are being housed and assess trends of housing placements over time, to advocate for more support services and funding for the community.
- Have a system where case managers can input/track their clients' progress to housing - so that case managers can easily assist/track clients with securing documents for housing, additional benefits and needs, etc.,
- Have a system where clients can be matched to housing placement opportunities - so that there is less subjectivity on matching clients to available units and systematizing/improving the process in which clients are housed

Once you identify the data that you would like to capture through your system, you may want to prioritize that list based off of current need/capacity/etc.

Responses for sample community conducting RW: A data system that houses raw client VI-SPDAT responses - in order to identify and enumerate as many people as possible experiencing homelessness.

⁴ For more info on 'Registry Weeks':

http://100khomes.org/sites/default/files/images/Registry%20Week%20PIT%20Integration%20Toolkit_FINAL.pdf

B. What data needs to be collected for the data system?

Depending on how you answered the previous questions, there may be one source of data (e.g. a common assessment) or multiple sources of data (e.g. common assessment, housing placement survey, nonprofit case management list, etc) that needs to be collected.

Responses for sample community conducting RW: VI-SPDAT assessments and lists of people who refused/didn't complete the VI-SPDAT

C. Who are we getting the data from?

Responses for sample community conducting RW: Interviewees - persons experiencing homelessness at the time of survey

D. When will this/these data be collected?

Responses for sample community conducting RW:

Registry Week will be from January 3 - 7, 2016 from 1:00am - 5:00am.

RW Data Entry will be from January 4 - 8, 2016 from 8:00am - 1:00pm.

E. How will this data be collected?

Responses for sample community conducting RW: X number of volunteers will be using the VI-SPDAT paper version or the VI-SPDAT google form version via web-connected tablet/smart phone (e.g. iPad / iPhone)

F. Who needs to be involved with the various aspects of the data system?

You may want to think about who will have to be involved with the different aspects of your data system. This may help with getting the right people on board from the beginning and ensuring that there is a smooth process in place to get your system up and running. For example, who will:

1. Create this data system,
2. Collect the data,
3. Input the data (data entry),
4. Clean up the data,
5. Analyze the data / prep analysis for sharing (e.g. visualization),
6. Share/present the data,
7. The data be shared with,
8. Etc (additional roles may come up depending on the data need)

G. Data Analysis Questions:

Thinking through some data analysis questions may facilitate with how you create your data system. It may also help to ensure that gaps in data collection and planning are recognized as early as possible to mitigate supplemental work that can be avoided.

1. What pieces of data need to be analyzed?
2. Are the appropriate data being collected for analysis needs? (e.g. Do any additional questions need to be asked? Are there any unnecessary questions?)
3. What pieces of data need to be aggregated for analysis?
4. What type(s) of analysis is/are needed? (e.g. descriptive, exploratory, inferential, predictive, etc.)
5. What is/are the purpose(s) for data analysis?
6. Will the analysis be presented? If so, how will it be presented? Will the analysis need to be visualized?

Other Data Need Considerations

You may also want to consider any future system components and data tracking components that may be linked to your initial data system. Below are bullets of specific potential system components that you may want to consider:

- Overall campaign aim (e.g. 20,000 homes campaign - tracking overall number of clients housed)
- Campaign goal tracking (aggregate of communities data) and visualization of data
- Tracking quality by-name list (BNL)
- Tracking levels of and 'improvements' to community's CES (coordinated entry system)
- Tracking of communities baseline and housing placement rate overtime
- Tracking # of people housed by communities
- CES and Data reporting/quality relationship
- Reporting trends of communities to campaign level
- Housing placement improvement needs based off data
- Other: communication strategy and scaling successes
- Etc.

PART III: Creating Your Common Assessment on Google Forms

PART III, will review how you can create/access the following three items:

1. A **Google Form: EDIT** version - accessible to the creator/editor of the Form (and a limited number of other collaborators)
2. A **Google Form: LIVE** version - accessible to data entry persons (where the URL link can be accessed by multiple people simultaneously)
3. A **Form Response Spreadsheet** - this is a google spreadsheet where all the raw data from your google form is housed

The steps below review how you can create a common assessment on Google Forms. You may also follow these steps to create other types of Google Forms (such as a housing placement form).

Your community will be using a common assessment survey that captures information about surveyed people experiencing homelessness in your community. This guide we will be using this [Canadian version of the Vulnerability Index - Service Prioritization Decision Assistance Tool \(VI-SPDAT\)](#) common assessment as an example to show the steps.

Once you have a finalized common assessment questionnaire such as the VI-SPDAT for your community, you can transfer the questionnaire on to Google Forms.

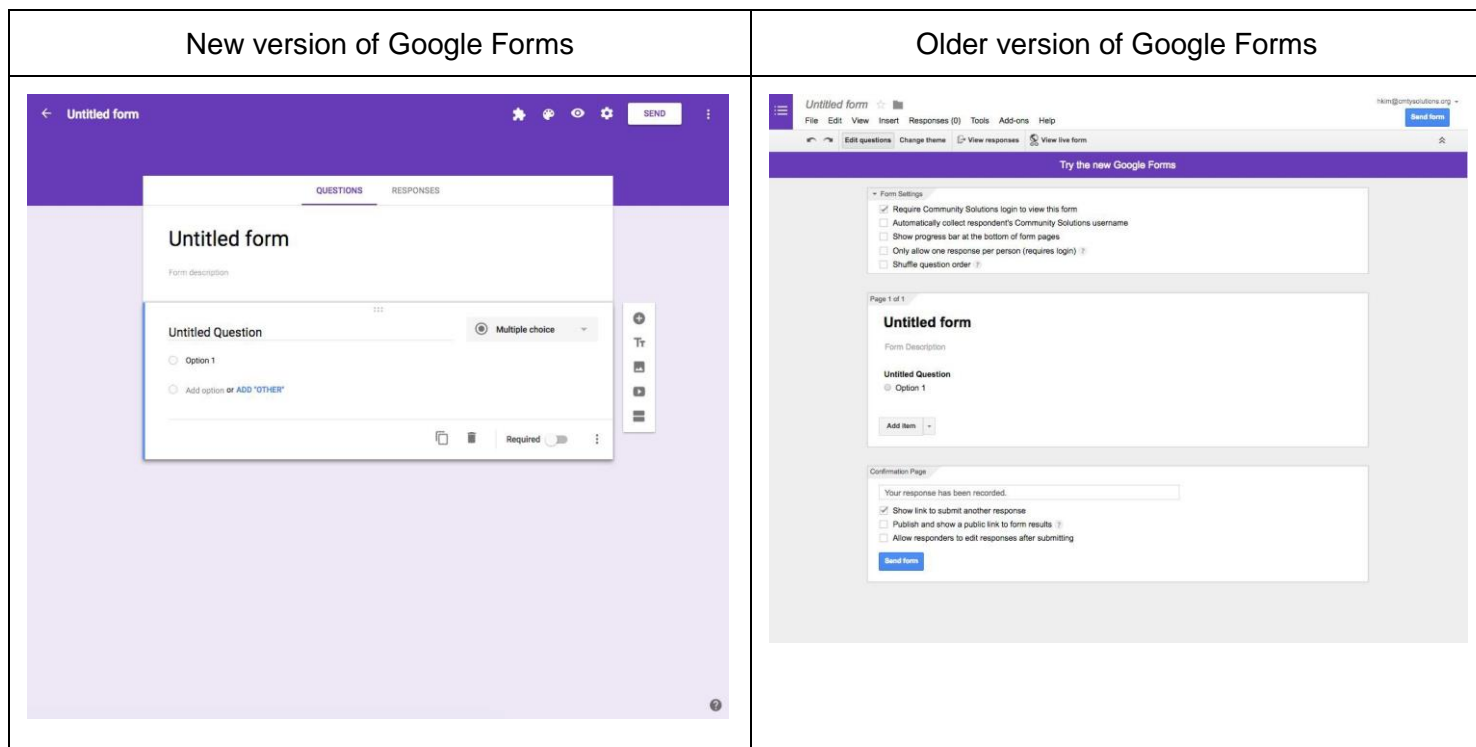
Step 1: Creating a Google Form⁵

Create a new google form by either:

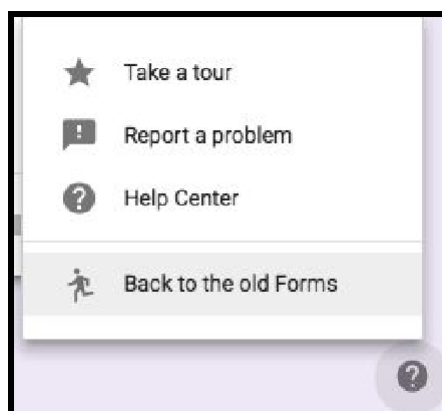
- Going to forms.google.com and clicking the “+” button near the top of the screen to “create a new form” or
- In [Drive](#), click **NEW** and select Google Forms. (You can find additional file types under **More**.)

After you create your new Google Form, your new Form should look something like the images pasted below. When you create your new Form, you are automatically in the EDIT version of the Form, meaning that this is where the Form questionnaire will be created and edited:

⁵ https://support.google.com/docs/answer/87809?hl=en&ref_topic=6063584



For this guide, we'll be using the older version of Forms. If you have the newer version of Forms open, you can revert this to the older version by clicking on the “?” button at the bottom right corner of your window and clicking “Back to the old Forms”.



Form Settings

You will want to make sure that your ‘**Form Settings**’ are adjusted properly. Your Form Settings may look like this if your account is under a Professional/Business Google Account:

Or it may look like this with the basic/free Google Account:

For either account types; you will want to have none of the checkboxes checked in and the ONLY checkbox that can be checked (if you prefer) is the one left of “Show progress bar at the bottom of form pages”.

Form Title

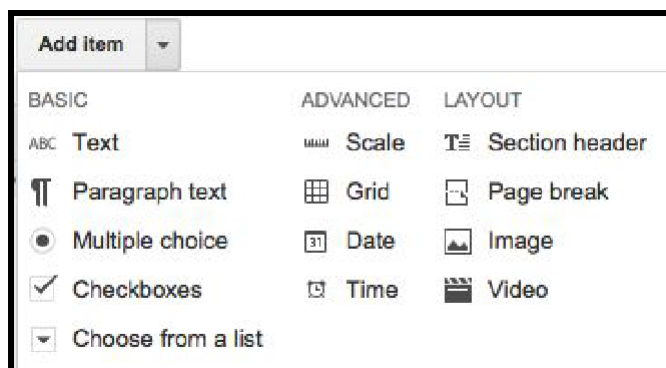
You will want to change the title of your Google Form.

- **‘Title Name #1’** (in the image below) is the title for the EDIT version of your google form. This title is only viewable to the internal editors/collaborators of your google form (if any) who also have edit access. If you’d like to rename ‘Title Name #1’, you may do so by clicking on it directly.
- **‘Title Name #2’** (in the image below) is the title that will show in the LIVE version of your form and will be viewable to those filling out the form such as your data entry persons. You may change Title Name #2 to your liking.

And if you would like - you can also add a **Form Description** by clicking the grey ‘Form Description’ beneath ‘Title Name #2’.

Step 2: Creating Your Form Questions⁶

By default you should have an “**Untitled Question**” - this is your first question. You can click on the “Untitled Question” box and type in your first question from your common assessment onto your form. Beneath the first question that you had just created, click on the arrow next to the “**Add item**” button. You can now create the remainder of your Google Form questions.



Question Types:

- **Text:** People can provide short answers [advanced settings: data validation]
- **Paragraph text:** People can provide longer answers [advanced settings: data validation]
- **Multiple choice:** People can select one option from among several [advanced settings: shuffle option order]
- **Checkboxes:** People can select as many options as they'd like [advanced settings: data validation; shuffle option order]
- **Choose from a list:** People can select one option from a dropdown menu [advanced settings: shuffle option order]
- **Scale:** People can rank something along a scale of numbers
- **Grid:** People can select a point from a two-dimensional grid [advanced settings: limit to one response per column; shuffle row order]
- **Date**
- **Time**

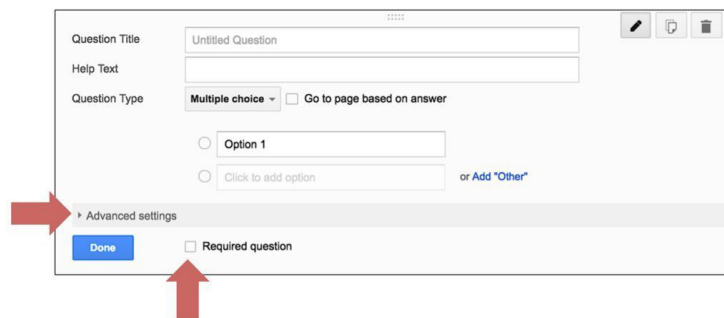
Additional Notes on Question Items:

The multiple choice and the checkboxes question types have an option of “**Add ‘Other’**” so that respondents may click ‘other’ and type in an alternate response that is different than the response options available. Please keep in mind, there may be questions where you will want to use this option - however, if respondents click other and do NOT type in an alternate response, then when you see the response for this submitted form, the **Form Response Spreadsheet** corresponding cell will appear empty.

⁶ https://support.google.com/docs/answer/2839737?hl=en&ref_topic=6063584

The “**Question Title**” is generally where you will write your question. The “**Help Text**” is where you may add additional clarifying information about your “Question Title” if needed. You may also change the question item/type by clicking the drop down menu next to “Question Type”.

Some questions items allow for **advanced settings**. You can access advanced settings by clicking the arrow left of “Advanced settings” which can be found toward the bottom of your item box when editing. You can make question items **required**, meaning that when a respondent wants to submit the form, they cannot do so unless they answer the required question. You can make a question required by checking off the box next to “Required question” which is to the right of the “Done” button in your item box. See image below.

The image is a screenshot of a Google Form editor interface. It shows a form titled 'Untitled Question' with a 'Help Text' field. The 'Question Type' is set to 'Multiple choice'. Below this, there are radio buttons for 'Option 1' and 'Click to add option', with a link to 'Add "Other"'. At the bottom, there is a section for 'Advanced settings' which is currently collapsed. A red arrow points to the right-pointing arrow next to 'Advanced settings'. Below this, there is a 'Done' button and a checkbox labeled 'Required question'. Another red arrow points to this checkbox.

Important: Please keep in mind, when creating aggregate dashboards (instructions in [PART IV: The Data Set, Analysis, & Creating Dashboards](#)), you may decide to create dashboards that would pull from question items’ responses. Thus, if you plan on incorporating specific questions as part of your aggregate dashboard (particularly those with “text” and “paragraph text” question types), using specific help texts and/or advanced settings may help reduce latter data validation and dashboard formula issues.

For example, a community using the [Sample Community VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) google form, which is a Google Form replica of the paper version of [Sample community's VI-SPDAT \(Canadian version 2.0\)](#) pdf document, may want to make the responses to VI-SPDAT question 2, “How long has it been since you lived in permanent stable housing?” as standard as possible in order to create a formula that will easily calculate their clients’ VI-SPDAT scores and calculate aggregate statistics about that particular question. To do so, the community has decided that responses should be a numerical value ONLY without text, thus, has decided to input help text for that question. See images below.

Edit version of question 2

The screenshot shows the 'Edit version of question 2' interface in Google Forms. It includes fields for 'Question Title' (2. How long has it been since you lived in permanent stable housing?), 'Help Text' (Please submit in total number of months WITHOUT the word "months" (e.g., 3.5 years would be 42)), and 'Question Type' (Text). There is a 'Their answer' placeholder, an 'Advanced settings' link, a 'Done' button, and a 'Required question' checkbox which is checked.

Live version of question 2

The screenshot shows the live version of question 2. The title is '2. How long has it been since you lived in permanent stable housing? *'. The help text reads: 'Please submit in total number of months WITHOUT the word "months" (e.g., 3.5 years would be 42). If client refuses to answer the question, input "Refused".' Below the text is an empty text input box.

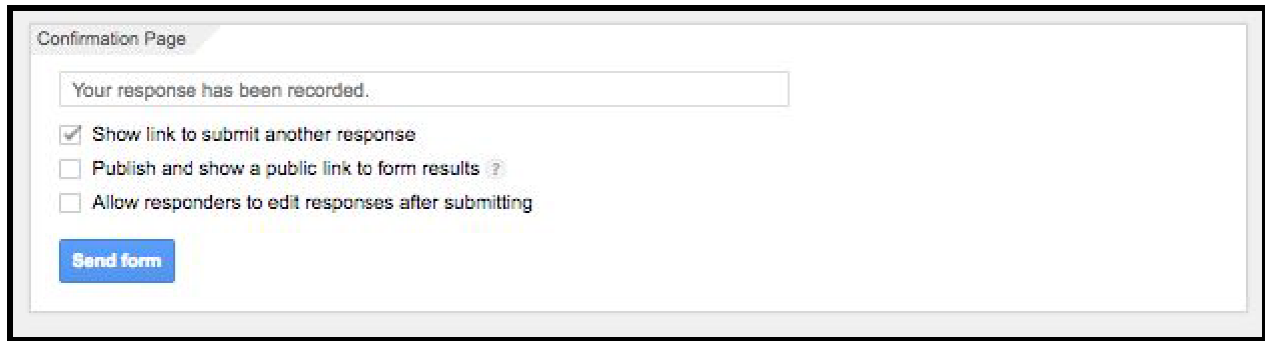
The community can use advanced settings: Data validation where the response must be a number greater than or equal to "0", however, because the VI-SPDAT also allows for clients to refuse to respond to questions, the community has decided not to use data validation so that data entry persons can type in "refused" in the text box in the case that clients' refused question 2.

Section Headers & Page Breaks

You may use "Section header" or "Page break" (from the "Add item" drop down options) to differentiate different sections of your questionnaire. For example, in the [Sample Community VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) google form, each domain (A. History of Housing and Homelessness, B. Risks, etc.) is separated using "Page break".

Step 3: Confirmation Page

Once you've completed creating all of your Google Form questions, at the very bottom of your Google Form, you can edit the text in the "Confirmation Page" section where the text box defaults with the text "Your response has been recorded." To edit, just click on this text. In addition, check off the boxes left of the three options to your liking. You may also allow data entry persons to edit responses after submitting. (Steps on editing responses are in [Step 7: Data Entry](#) of this guide).



Confirmation Page

Your response has been recorded.

☒ Show link to submit another response

☐ Publish and show a public link to form results ?

☐ Allow responders to edit responses after submitting

Send form

Step 4: Form Question Sequence

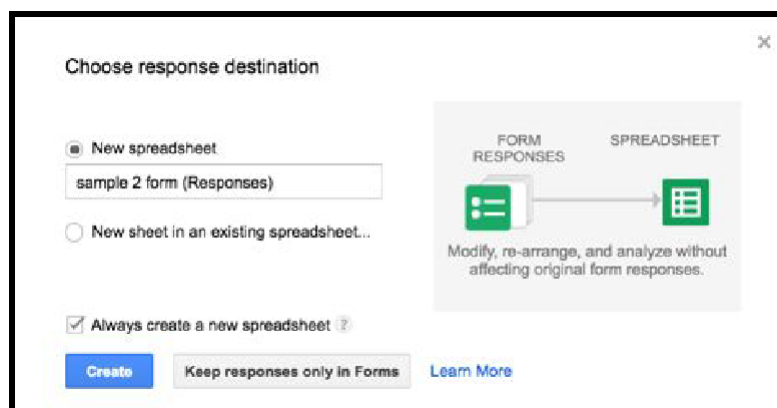
Once you complete transferring over your common assessment to your newly created Google Form, you will want to double check that your questions are in the correct order. If they are not, you can click and drag the question item and move it accordingly in the EDIT version of your form.

Step 5: Form Responses

A. Choosing a form response destination⁷

When you create a new form, you will have to choose where your form responses will go. In your form, click “View responses” in the toolbar. Once you click “view responses”, a window will pop open, such as the one shown below. You will want to choose either I or II:

- I. **New spreadsheet:** Creates a new spreadsheet in Google Sheets for responses
- II. **New sheet in an existing spreadsheet:** Choose from your existing spreadsheets in Google Sheets to store responses



Choose response destination

☒ New spreadsheet

sample 2 form (Responses)

☐ New sheet in an existing spreadsheet...

☒ Always create a new spreadsheet ?

Create **Keep responses only in Forms** [Learn More](#)

FORM RESPONSES → SPREADSHEET

Modify, re-arrange, and analyze without affecting original form responses.

⁷ https://support.google.com/docs/answer/2917686?hl=en&ref_topic=6063584

B. Checking Form Response Spreadsheet Column Sequence

Your form response spreadsheet' first row should have all of the question titles in the exact sequential vertical order of the edit version of your form for each question items created.

Page 1 of 7

Sample Community VI-SPDAT (CA V.2.0.) - 5/27/16

Vulnerability Index - Service Prioritization Decision Assistance Tool (VI-SPDAT)
Prescreening Triage Tool for Single Adults
Canadian version 2.0

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1 (800) 365-0420
info@orgcode.com
www.orgcode.com

GOOGLE FORM CREATED - MAY 18, 2016

Administration

1st Question >>> Interviewer's Name*
Please type the FIRST & LAST name of the person who conducted the assessment

2nd Question >>> Agency (if Applicable)
What agency/organization is submitting this form on behalf of the client?

3rd Question >>> Interviewer Type*
☐ Team
☐ Staff
☐ Volunteer

4th Question >>> Survey Date & Time*
FORMAT: MONTH / DAY / YEAR
Month: Day: 2016: AM/PM:

5th Question >>> Survey Location*

ETC. ETC.

VERTICAL SEQUENCE OF QUESTIONS IN YOUR GOOGLE FORM SHOULD BE THE SAME AS

HORIZONTAL SEQUENCE OF THOSE QUESTIONS IN YOUR FORM RESPONSE SHEET COLUMNS

Sample Community VI-SPDAT (CA V.2.0.) - 5/27/16 (Responses)

File Edit View Insert Format Data Tools Form Add-ons Help All changes saved in Drive

Timestamp 1st Question in Column B 2nd Question in Column C 3rd Question in Column D 4th Question in Column E 5th Question in Column F ETC. ETC.

1 Interviewer's Name Agency (if Applicable) Interviewer Type Survey Date & Time Survey Location First f

2

3

4

5

6 **Timestamp will always be**

7 **in Column A**

8 **(when a form is created, this is automatically**

9 **generated and is not an actual**

10 **question item on any google form)**

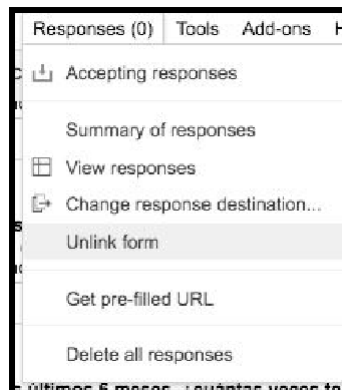
If any question items on your google form were newly created, edited, rearranged, and/or deleted AFTER your form response spreadsheet was created, the sequence of questions in your responses spreadsheet may not be in the revised sequence you have on your google form (e.g. a deleted question may still appear in your responses spreadsheet; a newly created question may appear in the last column instead of it's appropriate place). If this is the case, you will want to (a) UNLINK the form from the spreadsheet, (b) delete the unlinked spreadsheet, and (c) recreate a new spreadsheet for your responses so that the vertical sequence of questions in your google form are the exact same sequence in your form response spreadsheet (steps on unlinking and deleting your form response spreadsheet are below).

Please keep in mind that the first column of your form response spreadsheet will always house “**timestamp**” in column A. When a form is created, this is automatically generated (collects data on the exact date/time a data entry person clicks “submit” on the google form).

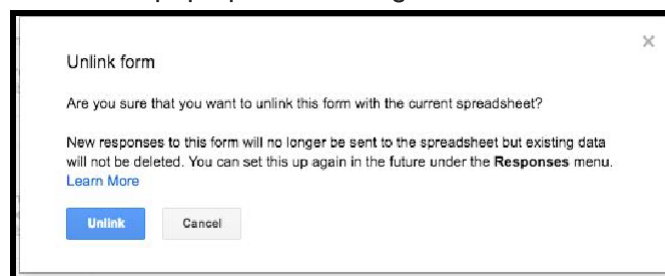
We **HIGHLY** recommend that ALL edits to the google form be finalized BEFORE your google form is used for data entry of actual clients’ common assessments to reduce the chances of inaccurate/misplaced data. Once you have the final version of your google form in the accurate order and all edits are finalized, please double check one last time to make sure the sequencing is accurately reflected in your form response spreadsheet.

C. Delinking Your Responses Spreadsheet

1. Click “**Responses (0)**” in the top toolbar, then click “Unlink form”.



2. The following window will pop open. Please go ahead and click “Unlink”



3. Go to your responses spreadsheet (which is now unlinked) > click “File” > then click “Move to trash”. The following window will open > click “Go to Sheets home screen”.



4. Repeat Steps 5.[A. Choosing a form response destination](#), to recreate a responses spreadsheet.

Important note: Once you start using your google form for ACTUAL submissions and client data, you do NOT want to unlink your form.

Step 6: Filling out sample assessments

BEFORE your google form is used for data entry of actual clients' common assessments, we highly recommend that you fill out sample assessments (not actual client surveys but fake responses) to get a feel for the google form and to also check for data validity:

- I. Fill out sample assessments and submit them in the LIVE version of your google form.
 - a. You can access the LIVE version of your form by clicking 'view live form' under the top toolbar.



- II. Double check the accuracy of responses of the sample assessments in your responses spreadsheet.
- III. Then delete⁸ the responses of the sample assessments in your google form. You can delete the sample assessments by clicking the "Responses" menu and then selecting "Delete all responses". You will also want to check your form response spreadsheet and delete the rows that have sample assessments as well.

Important Note: Once you start using your google form for data entry of actual clients' common assessments, please keep in mind, you do NOT want to delete any responses. If there is an accidental submission or duplicate submission, you may delete the row in your responses spreadsheet, but otherwise, you do NOT want to "delete all responses".

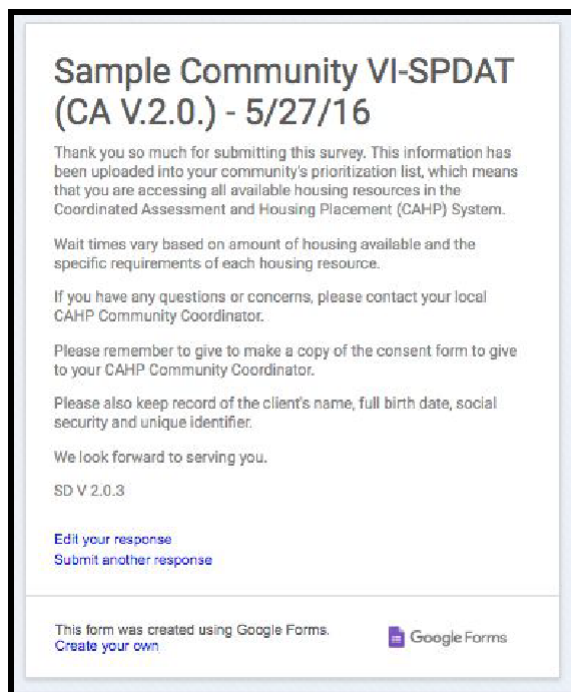
⁸ https://support.google.com/docs/answer/2923993?hl=en&ref_topic=6063584

Step 7: Data Entry

Data entry persons will be using the LIVE version of your google form and multiple data entry persons may use the LIVE version URL link of the google form simultaneously. Data Entry persons will NOT need access to the EDIT version of the google form. The [Share your form with collaborators](#) link goes over how you can add additional collaborators for the edit version of your form, however, we suggest that you limit the number of collaborators to curb the chances of accidental edits being made after the form is being used for data entry of actual common assessments.

In [Step 3: Confirmation Page](#), if you've decided to check off "Allow responders to edit responses after submitting", (responders meaning your data entry persons), they will have the ability to edit the responses of submitted forms. This may be useful in case there are any errors in the submitted responses.

When a data entry person submits a client's VI-SPDAT using the [Sample Community VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) google form, s/he will see this submission page:



The screenshot shows a confirmation page with the following text:

Sample Community VI-SPDAT (CA V.2.0.) - 5/27/16

Thank you so much for submitting this survey. This information has been uploaded into your community's prioritization list, which means that you are accessing all available housing resources in the Coordinated Assessment and Housing Placement (CAHP) System.

Wait times vary based on amount of housing available and the specific requirements of each housing resource.

If you have any questions or concerns, please contact your local CAHP Community Coordinator.

Please remember to give to make a copy of the consent form to give to your CAHP Community Coordinator.

Please also keep record of the client's name, full birth date, social security and unique identifier.

We look forward to serving you.

SD V 2.0.3

[Edit your response](#)
[Submit another response](#)

This form was created using Google Forms.
[Create your own](#)

Google Forms

At the bottom of this submission page, the data entry person has the option to click "**edit your response**" or "**submit another response**". The data entry person may click the URL link for "edit your response" to edit or may save the URL in the case s/he needs to come back to that specific VI-SPDAT. Please keep in mind that if you decide to allow responders to edit responses after submitting, that they are careful with the URL link of the "edit your response" page, as it will allow others with that link URL to also edit that submission.

PART IV: The Data Set, Analysis, & Creating Dashboards

You have created/accessed the following Docs Editors thus far:

1. Your **Google Form: EDIT** version
2. Your **Google Form: LIVE** version
3. Your **Form Response Spreadsheet**

The 4th Docs Editor to create will be another spreadsheet - for the purposes of this guide, we'll call this the “**Data MGMT**” spreadsheet. This is where you may have the following components:

- Component A: The Code Book
- Component B: The Tidy Data Set + Formulas
- Component C: Dashboards
- Additional optional analyses/dashboards

You can decide to create a separate google sheet for each of the components above, however, we recommend consolidating these components in one spreadsheet under different tabs of the spreadsheet to keep things simpler.

You also have the option to embed these components in your 3rd Doc Editor: the form response spreadsheet, however, we recommend that formulas/dashboards be housed in separate spreadsheet(s) in case there are any accidental unlinking of the form response spreadsheet to your google form.

If you would like to review the basics of how to use Google Sheets, before jumping into creating your 4th Docs Editor, you can find instructions on how to get started on google sheets in [APPENDIX II: GET STARTED ON GOOGLE SHEETS \(Introductory\)](#).

Component A: The Code Book

A “code book”, is a type of reference place that can list out your form questions, response options for each question, scoring prompts (if they are included your common assessment), domain names, etc. Additionally, this can be where you can house copies of formulas for any scoring prompts and spreadsheet column header letters associated with your data. The formulas and column header letters can be filled in after you create component B.

After you create your Data MGMT spreadsheet, rename the first tab for your Code Book. You can rename the tab by double clicking on the name of the tab. For the [Sample Community VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) form and responses, this is the corresponding data mgmt spreadsheet: [DATA MGMT: SAMPLE Cmtty name - VI-SPDAT \(CA V.2.0.\) - 5/27/16](#). In the first tab titled ‘Code Book’ - you can see a sample of how the code book is set up for this community’s form responses.

Component B: The Tidy Data Set + Formulas

This component refers to a copied and pasted raw data set from your form response spreadsheet, which you will then clean up. This cleaned-up version of the raw data will be referred to as the “tidy data set”. This can also include columns that house formulas for any type of scoring (such as the VI-SPDAT score calculation) or other calculations needed for line-by-line data. The steps below outline how to create this component:

1. First, create a new tab in your data mgmt spreadsheet. You can do this by clicking the “+” button at the bottom left hand corner of your new spreadsheet. For the [DATA MGMT: SAMPLE Cmtty name - VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) sheet, this new tab is titled ‘Form Responses 1’.
2. Open up your form response spreadsheet that is linked to your google form and copy your entire raw data. Paste it on to the new tab of your data mgmt spreadsheet. The ‘Form Responses 1’ tab in the [DATA MGMT: SAMPLE Cmtty name - VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) link, has pre-copied and pasted sample raw data.
 - a. After pasting, you may choose to add an additional row before the first pasted row at the very top, to differentiate the various sections/domains of your common assessment/google form. In the sample data mgmt sheet, this has already been created, and color fills have been added to differentiate the domain sections.
 - b. **If you would like to include formulas for scoring or calculating line by line data**, you can choose to create the formulas before copying/pasting the raw data. To do this, copy just the first row that holds the questions as headers, and paste them into your newly created component B tab. You can skip down to the next page to [Formulas for your tidy data set](#) and revisit pasting and tidying your raw data after you create your formulas. .
 - c. **Shortcut for highlighting:** Near the top left, where the column titles (A, B, C, D....) meets the row titles (1, 2, 3, 4....), click on the box where A and 1 meet (this is the small box right below fx). Once you click this box, the entire spreadsheet should be highlighted. Please copy.
3. After pasting your raw data, you will want to ensure that all responses are correctly submitted. For example, the first question, “How long has it been since you lived in permanent stable housing? (in months)”, require a numerical value response or the text response of refused”. You will want to double check that column to ensure that all responses are standard and that no one has submitted an assessment with a response outside of the perimeters of the response options you are looking for. To easily check your raw data, you may use **filtering** (see Appendix II, [7\) Filter your Data](#)) or **conditional formatting** (see Appendix III, [A. HOW TO USE CONDITIONAL FORMATTING](#)).

4. Additionally, if your finalized google form has questions that include the “other” option in the responses for the ‘multiple choice’ and the ‘checkboxes’ question types, and you have made those questions required, you can also clean up those corresponding question columns in your Tidy Data Set tab.
 - a. For example, in the [DATA MGMT: SAMPLE Cmty name - VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) form, question 1, “where do you sleep most frequently?” has response options: shelters, couch surfing, outdoors, refused, & other: _____. Since this question was created as a required question, you can double check in the column with the responses in your Tidy Data Set tab, to see if there are any empty cells for submitted assessments. If there are, the community can decide to manually insert the text ‘other: not specified’ in those empty cells. To find these cells, the community may use **filtering** (see Appendix II, [7\) Filter your Data](#)) or **conditional formatting** (see Appendix III, [A. HOW TO USE CONDITIONAL FORMATTING](#)).

Formulas for your tidy data set

Your Tidy Data Set tab may also house columns that include formulas for any type of scoring (such as the VI-SPDAT score calculation) or other line-by-line calculations needed (e.g. converting MM/DD/YYYY dates into a number of years). [APPENDIX III: WORKING WITH FORMULAS + SCRIPTING](#) goes over introductory google spreadsheet formulas. You can also find additional formulas and explanations of each on the [Google spreadsheets function list](#) website.

Important Note: If you decide to insert formulas, before you do so, we suggest that you insert a few columns (approximately 10-15 columns) after the column that has your final common assessment question (column BM in the sample data mgmt sheet) and leave them empty. Then insert a sufficient number of columns to house your formulas (24 columns in the sample sheet, which are columns CF:DC). The empty 10-15 columns between the final common assessment question and the first formula column may come in handy in the case that you decide to add additional line-by-line information.

Using Advanced IF Formulas with ARRAYFORMULA for Scoring Calculations

This section will go over some more advanced uses of IF formulas & ARRAYFORMULA simultaneously. The grey sections below review the formula, syntax, and general notes. The white sections below each grey portion show examples of these formulas within the [DATA MGMT: SAMPLE Cmty name - VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) spreadsheet. The example formulas are inserted in the third row, far right columns of the ‘Form Responses 1’ tab. You can click through cells **CF3:DC3** and see the formulas in the formula (**fx**) bar.

IF Formula

Returns one value if a logical expression is 'TRUE' and another is 'FALSE'.

Syntax: =ArrayFormula(IF(logical_expression, value_if_true, value_if_false))

Note: You may also choose NOT to have a value_if_false. If you decide not to use value_if_false, then the cell will automatically insert the text "FALSE" if the logical expression is not true.

Example:

Question 7 (Column Z)

Response options: Yes, No, Refused

VI-SPDAT scoring prompt for question 7:

"if 'Yes', then score 1 for legal issues"

Syntax breakdown:

logical_expression: \$Z\$3:\$Z="yes"

value_if_true: 1

value_if_false: 0

Formula (Column CK):

=ArrayFormula(IF(\$Z\$3:\$Z="yes", 1, 0))

IF/OR Formula

In order to set up scoring for IF/OR formulas, because the OR formula yields a single result, for an array formula, we will need to nest multiple IF functions.

Syntax (where N is the number of logical expressions needed):

ArrayFormula(IF(logical_expression1, value_if_true, IF(logical_expression2, value_if_true, IF(logical_expression3, value_if_true, ...IF(logical_expressionN, value_if_true, value_if_false))))))...

E x a m p l e #1

Question 8 (Column AA)

Question 9 (Column AB)

Response options: Yes, No, Refused

VI-SPDAT scoring prompt for questions 8 & 9:

"if 'yes' to any of the above, then score 1 for risk of exploitation"

Syntax breakdown:

logical_expression1: \$AA\$3:\$AA="yes"

logical_expression2: \$AB\$3:\$AB="yes"

value_if_true: 1

value_if_false: 0

Formula (Column CL):

=ArrayFormula(IF(\$AA\$3:\$AA="yes", 1, if(\$AB\$3:\$AB="yes", 1, 0)))

E x a m p l e #2

Question 10 (Column AC)

Question 11 (Column AD)

Response options: Yes, No, Refused

VI-SPDAT scoring prompt for questions 10 & 11:

"if 'yes' to question 10 or 'no' to question 11, then score 1 for money management"

Syntax breakdown:

logical_expression1: \$AD\$3:\$AD = "no",

logical_expression2: \$AC\$3:\$AC = "yes"

value_if_true: 1

value_if_false: 0

Formula (Column CM):

=ARRAYFORMULA(if(\$AD\$3:\$AD = "no", 1, if(\$AC\$3:\$AC = "yes", 1, 0)))

IF/”AND” Formula:

In order to set up scoring for IF/AND formulas, because the AND formula yields a single result, for an array formula, we will need to nest multiple IF functions.

Syntax (where N is the number of logical expressions needed):

ArrayFormula(IF(logical_expression1, IF(logical_expression2, IF(logical_expression3,IF(logical_expressionN, value_if_true, value_if_false), value_if_false), value_if_false), value_if_false))...

Note: The syntax is similar to the IF/OR formula, however, for IF/ANDs, we will NOT include the value_if_true until the nth logical_expressionN portion of the formula.

Example:

Question 1 (Column O)

Response options: Shelters, Couch Surfing, Outdoors, Other (specify):_____, Refused

VI-SPDAT scoring prompt for question 1:

“if the person answers anything other than ‘shelter’ and ‘refused’, then score 1”

Syntax breakdown:

logical_expression1: $\$O\$3:\$O <> \text{"shelters"}$

logical_expression2: $\$O\$3:\$O <> \text{"refused"}$

logical_expression3: $\$O\$3:\$O <> \text{" "}$

value_if_true: 1

value_if_false: 0

Formula (Column CG):

=ARRAYFORMULA(IF($\$O\$3:\$O <> \text{"shelters"}$, IF($\$O\$3:\$O <> \text{"refused"}$, IF($\$O\$3:\$O <> \text{" "}$, 1,0),0), 0))

Note: The formula includes

logical_expression3: $\$O\$3:\$O <> \text{" "}$

Because without that logical expression, it will consider all cells including empty ones. Additionally, the “other” option (through the google form) may produce empty cells if other is not specified. Please refer to (PAGE 234982) in the Tidy data set section regarding tidying up empty cells.

Examples of Using Advanced Combination Formulas

E x a m p l e #1	
<p>Source: DATA MGMT: SAMPLE Cmty name - VI-SPDAT (CA V.2.0.) - 5/27/16</p> <p>Question 2 (Column P) Question 3 (Column Q)</p> <p>Response options: numerical value, “refused”</p> <p>VI-SPDAT scoring prompt for questions 2&3: “if the person has experienced 6 or more consecutive months of homelessness, and/or 3+ episodes of homelessness, then score 1”</p>	<p>Formula (Column CH): =ArrayFormula(IF((IF(\$P\$3:\$P>=6, IF(\$P\$3:\$P<=5000000, 1, 0)))+(IF(\$Q\$3:\$Q>=3, IF(\$Q\$3:\$Q<=5000000, 1, 0)))>=1, 1, 0))</p>
<p>Note: This one is a bit tricky. Because the response options allow for both a numerical value or the text “refused”, and the scoring is dependant on the numerical responses of two different columns, the formula for each column will have to include a numerical limit to exclude rows that have “refused” in the cell.</p> <p>So let’s separate the scoring prompt by looking at the first part of the scoring prompt. In column P, we want responses that are >=6 and we want to add a <=# (large enough number that will include large range of all possible numerical response values) expression in there as well such that we would be using a IF/”AND” formula. Thus, we have:</p> <p>Part 1: IF(\$P\$3:\$P>=6, IF(\$P\$3:\$P<=5000000, 1, 0))</p> <p>Now we have the second part of the scoring prompt. In column Q, we want responses that are >=3 and <=#. So we have:</p> <p>Part 2: IF(\$Q\$3:\$Q>=3, IF(\$Q\$3:\$Q<=5000000, 1, 0))</p> <p>We’ve used the IF/”AND” formulas to account for the numerical values in the cells of EACH column, however the scoring prompt is IF/”OR” for BOTH columns. We can’t use a combination of if/”AND” formulas and if/”OR” formulas in this case, thus, decided to use the “+” addition symbol as a workaround to get at the IF/”OR” aspect. The addition of part 1 and part 2 could yield a few different responses. It could equal 0, 1, or 2. We want those with >=1 to have the ultimate scoring value of 1 to fulfil the scoring prompt. Thus we have: =IF((Part 1)+(Part 2)>=1, 1, 0)</p> <p>When we turn this into the actual formula, it becomes:</p> <p>=ArrayFormula(IF((IF(\$P\$3:\$P>=6, IF(\$P\$3:\$P<=5000000, 1, 0)))+(IF(\$Q\$3:\$Q>=3, IF(\$Q\$3:\$Q<=5000000, 1, 0)))>=1, 1, 0))</p>	
E x a m p l e #2	

<p>Source: DATA MGMT: SAMPLE Cmty name - VI-SPDAT (CA V.2.0.) - 5/27/16</p> <p>Question 4.a. (Column R) Question 4.b. (Column S) Question 4.c. (Column T) Question 4.d. (Column U) Question 4.e. (Column V) Question 4.f. (Column W)</p> <p>Response options: numerical value, "refused"</p> <p>VI-SPDAT scoring prompt for question : "If the total number of interactions equals 4 or more, then score 1"</p>	<p>Formula (Column CI):</p> <pre>=arrayformula(if(if(\$R\$3:\$R<>"refused", \$R\$3:\$R, 0) +if(\$S\$3:\$S<>"refused", \$S\$3:\$S, 0) +if(\$T\$3:\$T<>"refused", \$T\$3:\$T, 0) +if(\$U\$3:\$U<>"refused", \$U\$3:\$U, 0) +if(\$V\$3:\$V<>"refused", \$V\$3:\$V, 0) +if(\$W\$3:\$W<>"refused", \$W\$3:\$W, 0)>=4, 1, 0))</pre>
<p align="center"><u>Other helpful formulas (links include additional details on the formulas)</u></p>	
<p>REPT</p>	<p>Returns specified text repeated a number of times.</p>
<p>ISNUMBER</p>	<p>Checks whether a value is a number.</p>
<p>SEARCH</p>	<p>Returns the position at which a string is first found within text, ignoring case.</p>
<p>LEN</p>	<p>Returns the length of a string.</p>
<p>TRIM</p>	<p>Removes leading and trailing spaces in a specified string.</p>
<p>RIGHT</p>	<p>Returns a substring from the end of a specified string.</p>
<p>LEFT</p>	<p>Returns a substring from the beginning of a specified string.</p>
<p>SUBSTITUTE</p>	<p>Replaces existing text with new text in a string.</p>
<p align="center"><u>E x a m p l e #3 (using combination of ARRAYFORMULA, IF, + other formulas)</u></p>	
<p>Source: Other common assessment (not from the VI-SPDAT)</p> <p>Question: Over the past year, how much of the time have you been homeless? [Best estimate - please type the # followed by either DAYS / WEEKS / MONTHS.]</p> <p>Because response options in one column, can have a variety of texts, the formula to the right converts days, weeks, months responses to a month(s) value.</p>	<pre>=arrayformula(if(isnumber(SEARCH("m onth", \$A\$3:\$A)), LEFT(\$A\$3:\$A, SEARCH(" ", \$A\$3:\$A, 1))/1, if(isnumber(SEARCH("week", \$A\$3:\$A)), LEFT(\$A\$3:\$A, SEARCH(" ", \$A\$3:\$A, 1))/4.286, if(isnumber(SEARCH("day", \$A\$3:\$A)), LEFT(\$A\$3:\$A, SEARCH(" ", \$A\$3:\$A, 1))/30, if((isnumber(\$A\$3:\$A)), "didn't specify, check",0))))))</pre>

Spot Checking Formulas + Tips for Troubleshooting Formulas⁹

For any formula you are creating, you will want to spot check each of them. Below are different tips on how you can double check for accuracy and additional tips for troubleshooting.

It's important to test out all formulas. If you're creating a formula with a limited number of response combinations, then it may help to test out each combination of potential responses as a way to test out the formula.

Let's take a look at [Example #1 from Using Advanced Combination Formulas](#).

When we initially created the formula, we set it up without having a numerical limit, so that it was a simple IF/"OR" formula. The image below represents what the responses were (in column CH) when we plugged in the initial formula into cell CH3: =ArrayFormula(IF(\$P\$3:\$P>=6, 1, IF(\$Q\$3:\$Q>=3, 1, 0)))

	P	Q	CH
1			A. HISTORY OF HOMELESSNESS (c
2	2. How long has it been since you lived in permanent stable housing?	3. In the last year, how many times have you been homeless?	IF THE PERSON HAS EXPERIENCED 6 OR MORE CONSECUTIVE MONTHS OF HOMELESSNESS, AND/OR 3+ EPISODES OF HOMELESSNESS, THEN SCORE 1.
3	100	100	1
4	0	0	0
5	1	refused	1
6	2	3	1
7	refused	1	1
8	refused	4	1
9	6	4	1
10	7	refused	1
11	refused	refused	1

We tested out the formula by testing out different response combinations such as the responses in column P and Q above (this was done before the actual raw response data was copied into the sheet). If you take a look at rows 5, 7, and 11, you can see that although the cells in P and Q for those rows did not fit the scoring criteria, the formula still yielded "1". Thus discovering the need to revisit the way the formula was written.

We found that because of text 'refused', we needed a numerical limit, thus the accurate formula is:

=ArrayFormula(IF((IF(\$P\$3:\$P>=6, IF(\$P\$3:\$P<=5000000, 1, 0)))+(IF(\$Q\$3:\$Q>=3, IF(\$Q\$3:\$Q<=5000000, 1, 0)))>=1, 1, 0))

After plugging in the correct formula into cell CH3, the "1"s in rows 5, 7, and 11 turned to "0"s.

⁹ <http://www.techrepublic.com/blog/10-things/10-tips-for-troubleshooting-excel-formulas-and-functions/>

The easiest way to see that a formula is not working, is if you see an **error value**¹⁰ in the cell. At times, some error values are ok (e.g. you set a division formula and the denominator is zero because the actual value is 0). Understanding the following error values may help with correcting your formula:

1. **#DIV/0!**: You can't divide by 0 and your formula refers to a cell that contains or evaluates to 0 or is blank.
2. **#NAME?**: This error occurs when you refer to a range incorrectly or forget to enclose text in quotation marks. When Google Sheets encounters text in a formula, it tries to interpret the text as a cell reference, a range name, or a function name. When it can't recognize the text as any of those things, it displays this error value. Check your function names, cell references, and range names (make sure the range name actually exists if you've spelled it correctly). If all ranges are correct, make sure you've delimited text using quotation marks.
3. **#NULL!**: You specified an intersection between two ranges that don't intersect, such as A1:C3 and D4:F6. If the ranges do intersect, you've probably used a space character instead of a comma to separate the two ranges (A1:C3 D4:F6 instead of A1:C3,D4:F6).
4. **#NUM!**: This error value indicates a problem with a number in the formula. Either the argument is invalid or the result is too large or small.
5. **#REF!**: You've referenced a cell incorrectly. Most likely, you've deleted a cell. For instance, the expression =A1+B1 won't return an error if you delete the value in B1. But if you delete column B, it will.
6. **#VALUE!**: You've expressed the wrong data type or operator. The most common cause for this error value is a reference to text by a numeric operation.
7. **#N/A**: The #N/A error value isn't like the rest — there's usually nothing wrong with the formula itself. It means that spreadsheet can't return a result that makes sense or can't find the value you're looking for or that you haven't sorted the list (which isn't always necessary). To fix this, you can wrap the original function in an error-handling routine that displays a meaningful message or more appropriate value. For instance, you might display the message, "value not found" — the user understands that — whereas the #N/A value might cause confusion.

*At times, your spreadsheet will not always tell you if a formula is wrong. It will usually just go ahead and run the calculations and **give you the wrong answer**. It's up to you to double-check your formulas whenever you create them. These tips won't help you solve every problem you encounter, but they should provide you with the tools to identify many common errors.*

- **Check the references.** Most formulas use at least one cell reference. When you double-click a formula, it will highlight all of the referenced cells. You can then double-check each one to make sure they are correct.

¹⁰ <http://ccm.net/faq/28880-spreadsheet-error-messages-related-to-the-formulas>

- **Look for mix-ups.** A common mistake is to use the correct cell references, but in the wrong order. For example, if you want to subtract C2 from C3, the formula should be =C3-C2, not =C2-C3.
- **Break it up.** If a formula is too complicated to check, try breaking it up into several smaller formulas. This way, you can check each formula for accuracy, and if there are any problems you will know exactly where they are.
- **Ballpark it.** Generally, you'll be able to tell what the answer should be. If the formula gives you a much larger or smaller value than expected, there may be a problem with your formula (or with the values in the cells).
- **Order of operations.** All spreadsheets calculate formulas based on the order of operations. Your spreadsheet will always use this ordering, which means it doesn't just calculate a formula from left to right. Particularly with advanced complex formulas, double check to make sure this is accurate.

Saving Formulas into Your Code Book

We highly recommend that any formulas that you create for your tidy data set are copied and pasted into your code book tab as a reference. When you copy the actual formula, make sure to highlight the formula WITHOUT highlighting the “=” symbol.

As mentioned in [Component A: The Code Book](#), it can be helpful to also list out your column header letters for corresponding questions, scoring prompt formulas, corresponding columns for scoring prompts, domain formulas (if any), corresponding columns for domain formulas, etc.

If any formulas are adjusted/edited, make sure to update your code book!

Important Note: If you delete, move, or add any columns/rows AFTER formulas have been inserted in separate cells, please make sure to double check your formulas

Component C: Dashboards

Dashboards: A dashboard is a tool for visualizing and communicating important data points

Generally, your dashboards may reflect your targets (interim objectives that are monthly, quarterly, etc. that help determine if you are on track to meet your goal). For example you may create dashboards that tracks the number of clients who are housed each month and the rate in which clients are being housed.

You may also create dashboards that are descriptive of a data set, such as the clients that are assessed during a registry week.

For this section, we'll review general use of tables, charts, formulas, and visualization/formatting, using the example provided in the 'Dashboards' tab in the [DATA](#)

[MGMT: SAMPLE Cmty name - VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) spreadsheet, which are descriptive of the sample community's common assessment responses.

Remember - to create quality dashboards:

- Know your audience
- Update your data in real time
- Only include what you really need
- Value function over form

Step 1: Selecting Data Points for Your Dashboards

Before creating aggregate dashboards, it may be helpful to separately outline the kinds of dashboards you may need/want to see. The following data analysis questions, which were also in Part II, [G. Data Analysis Questions](#), may help you with outlining your dashboards:

- What pieces of data gathered from your common assessment need to be analyzed?
- What pieces of data need to be aggregated for analysis? Filters for specific groups (e.g. special populations such as veterans)?
- What type(s) of analysis is/are needed? (e.g. descriptive, exploratory, inferential, predictive, etc.)
- What is/are the purpose(s) for data analysis?
- Will the analysis be presented? If so, how will it be presented? Visualized?

Step 2: Formatting Your Dashboards

You'll now want to create your dashboards based off the outline you created from the previous step, and you'll also want to format them in the way you see fit.

Let's take a look at the 'Dashboards' tab in the [DATA MGMT: SAMPLE Cmty name - VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) spreadsheet. Here are some elements that may be helpful to include when creating/formatting your dashboards:

- Titles for each section (e.g. "demographic & overview", "VI-SPDAT aggregate domain analysis", "special populations", etc.)
 - Titles for each table (e.g. "total interactions", "VI-SPDAT Individual Dashboard")
 - Titles for each chart
- When the data points were collected (Registry week start date and end date)
- When the data points were entered (data entry start date end date)
- Total numbers (total interactions, total surveys submitted, etc.)
- Definitions where needed (e.g. "chronic homelessness", "episodic homelessness")
- Differentiating each section with section lines/fill colors

Step 3: Inserting Formulas into Your Dashboards

After formatting your dashboards, you can go ahead and insert formulas where needed. Because you'll most likely be pulling in data from your tidy data set tab, you'll want to include the tab name in your formula. You can reference another tab sheet in a formula by entering the sheet name and an exclamation mark before the cell being copied.

For example:

=Sheet1!A1

= 'Sheet number two'!B4

Note: If a sheet name contains spaces or other non-alphanumeric symbols, you'll need to include single quotes around it (as in the second example above).

The following formulas may be helpful for descriptive aggregate statistics on your clients' common assessment responses:

SUM	Returns the sum of a series of numbers and/or cells.
SUMIF	Returns a conditional sum across a range.
SUMIFS	Returns the sum of a range depending on multiple criteria.
AVERAGE	Returns the numerical average value in a dataset, ignoring text.
AVERAGEIF	Returns the average of a range depending on criteria.
AVERAGEIFS	Returns the average of a range depending on multiple criteria.
COUNTIF	Returns a conditional count across a range.
COUNTIFS	Returns the count of a range depending on multiple criteria.

Notes on formulas:

Remember to add a limit if using numbers. For example, in the 'Dashboards' tab in the [DATA MGMT: SAMPLE Cmty name - VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) spreadsheet, in order to calculate how many respondents are in need of permanent supportive housing (score of 8 or above), cell D16 holds the following formula with a numerical limit:

=COUNTIFS('Form Responses 1'!\$DC\$4:\$DC, ">=8", 'Form Responses 1'!\$DC\$4:\$DC, "<=30")

Important Note: Please remember to also [spot check formulas](#), and if needed troubleshoot, your dashboard formulas as well.

Step 4: Integrating Charts in Your Sheet

How to: Add a chart or graph to your sheet¹¹:

- A. Select the cells with data you want to include in your chart. Note: To make labels on your chart, add a header row or column to your data.
- B. Click Insert > Chart.
- C. In the "Recommendations" tab, choose a chart style. For more options, click Chart types.
- D. To edit your chart, click Customization.
- E. To create the chart, click Insert.

How to: Edit and format your chart¹²:

- A. **Make quick edits:** To make small, fast edits to a chart, you can use Quick Edit mode with many different chart types.
 - a. Click on a chart.
 - b. On the right, click Quick edit mode .
 - c. Click the part of the chart that you'd like to change:
 - i. Chart title: Change the font style, size, or color.
 - ii. Horizontal or vertical axis labels: Change the font style, size, or color.
 - iii. Legend: Change the font style, size, data series color, or position.
 - iv. Data series: Change the color, line thickness, dot size, or axis it belongs to. For example, click on a line you want to edit in a line chart or click on a bar in a bar chart.
 - v. Chart background: Resize your chart, move it within the chart area, change the font or background color, or adjust the number of grid lines shown.
 - vi. Note: A number of these editing features are also available by right-clicking on a section of your chart.
- B. **Make advanced edits:** To fully customize your chart, you can use Advanced Edit mode.
 - a. In the top right, click the dropdown arrow.
 - b. Select Advanced edit.
 - c. In the window that appears, select a tab:
 - i. Recommendations: Choose from a list of recommended chart types to display your data.
 - ii. Chart types: See a list of all chart types.
 - iii. Customization: Make changes to the axes, series, and appearance for your chart.

¹¹ https://support.google.com/docs/answer/63728?hl=en&ref_topic=30239

¹² https://support.google.com/docs/answer/63824?hl=en&ref_topic=30239

C. **Switch rows and columns in a chart:** To switch the position of the rows and column data in your chart:

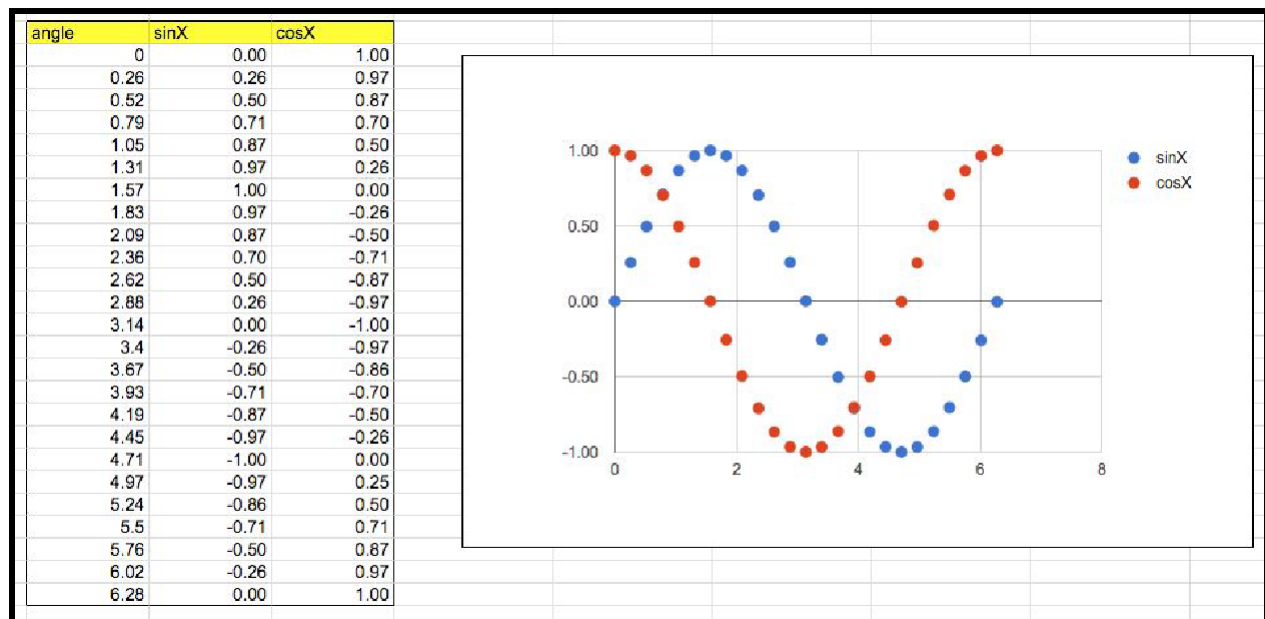
- Click on the chart.
- In the top right, click the dropdown arrow.
- Select Advanced edit.
- In the window that appears, click Chart types.
- Check the box next to "Switch rows/columns" to switch the order of the data.

D. **Include hidden or filtered data in a chart:** To include data in your chart that has been hidden or filtered in a spreadsheet:

- Open a spreadsheet and click on the chart.
- In the top right, click the dropdown arrow.
- Select Advanced edit.
- In the window that appears, select the Chart types tab.
- Check the box next to "Include hidden/filtered data."
- To remove this data from the chart, uncheck the box again.

How to: Create Different Chart types¹³

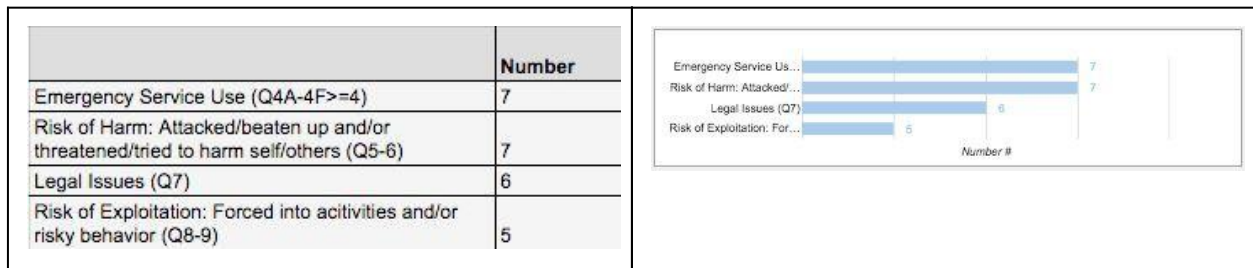
A. SCATTER PLOT



A scatter chart displays numeric coordinates along the X- and Y-axis. The data in your spreadsheet is displayed as a series of points on a graph. Your data should be formatted in two or more columns, all of which contain numeric data. The first column of data should contain X-values on your chart, while each remaining column should contain Y-values. Each column of Y-values will show as a series of points on the chart.

¹³ <https://support.google.com/docs/answer/190718?hl=en>

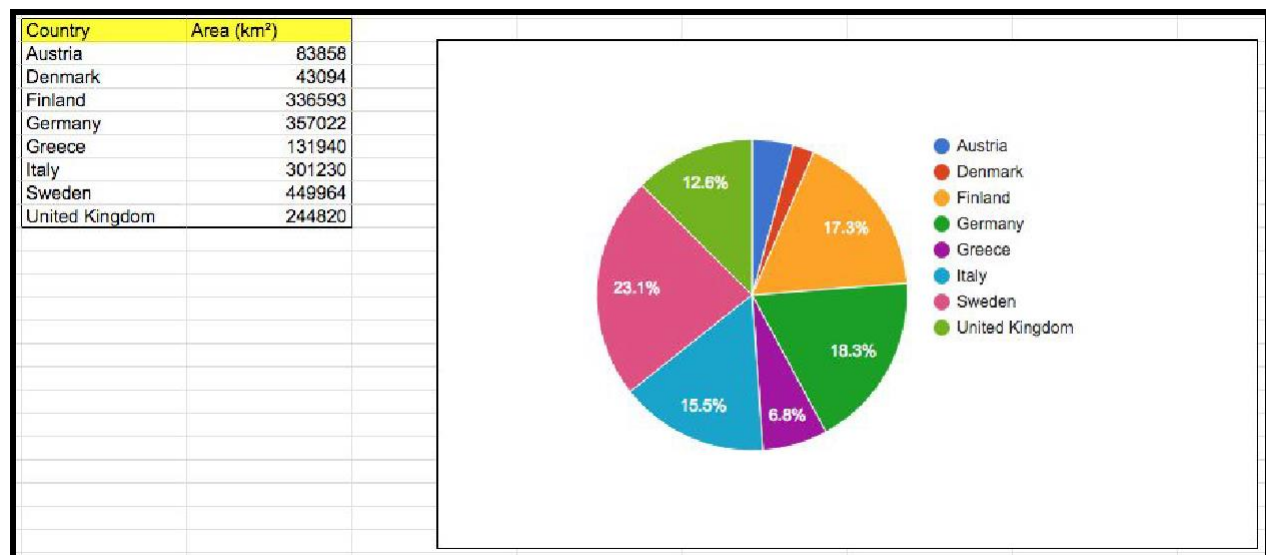
B. BAR CHARTS

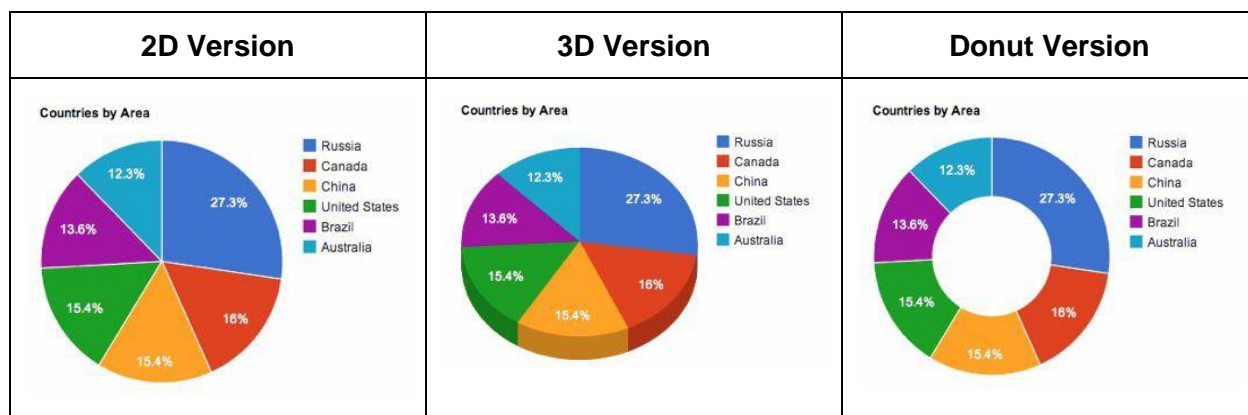


Bar charts are a good way to visualize one or more categories of data, particularly if each category has sub-categories. These charts allow you to visually express the difference between the data points of each category.

- Data Format:** Each row in your spreadsheet represents a different bar in the chart. In the first column of your spreadsheet, write the labels or classifications for each row. Each remaining column needs to contain numeric data. The data format for a bar chart is the same as the data format for area and line charts. You may also want to name each of the columns containing data in your spreadsheet. If you do so, we'll automatically detect these names and use them as labels for your data on the chart. You can also set or change this setting by selecting the checkbox that reads 'Use Row A as headers.' Last, you can chart uncertainty about your data using boolean values.
- Stacked bar chart:** Data for a stacked bar chart is structured similarly to a bar chart, but data for each label or classification is aggregated into one bar, instead of multiple bars. This bar contains all data for any given label or classification, and allows you to see the relationship of parts to the whole.

C. PIE CHARTS





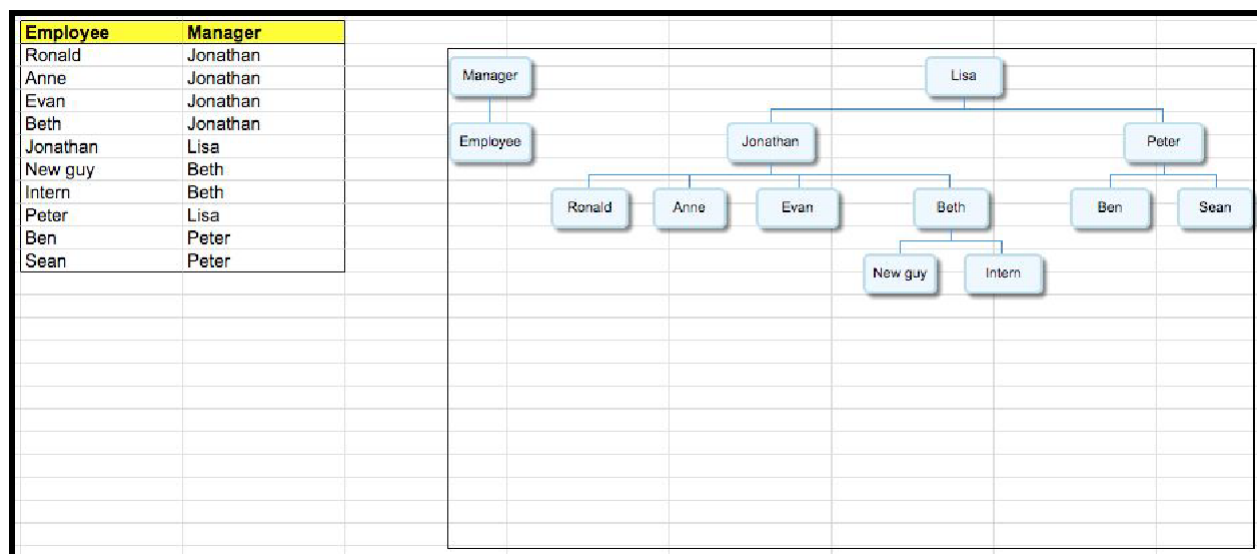
A pie chart (also known as a pie graph) allows you to visualize data as “slices of pie,” or proportions of a whole.

- **Data Format:** Your data should be contained in two columns of your spreadsheet; the first column contains a label, and the second column contains a numeric value representing that label. In the Chart types tab of the Charts Editor dialog, you can switch between the 2D and 3D versions of the pie chart, or turn a pie chart into a donut chart.
- **Customization options:** In addition to the regular customization options available for Google Charts, the pie chart allows you to select the labels you’d like to see for each pie slice. To do this, click on the Customization tab, scroll down to Slice, and select an option:
 - **Percentage** shows each slice as a calculated percentage of the total
 - **Value** displays the number associated with each slice (from the right-hand column in your data table)
 - **Label** shows the name of each slice (from the left-hand column in your data table)
 - **None** allows you to leave the slices blank and rely solely on the color-coded legend

As you select each of these options, you can also change the font size and text color associated with the option to the right of the Slice drop-down menu. You can also add legend labels to each pie slice instead of keeping your legend to the right or above the pie itself. To do this:

- Open the chart editing dialog.
- Click the Customize tab.
- Go to the Legend option and select Labeled.

D. ORGANIZATIONAL CHART



An organizational chart (also called an org chart) shows the structure of a company, group of people, or family tree by displaying the relationships between group members.

- **Data format:** List all group members in one column of your spreadsheet, and their hierarchical or higher-level relationship in the next column. If you want a tooltip to appear when you point your mouse to each node, you can enter this text in a third column.

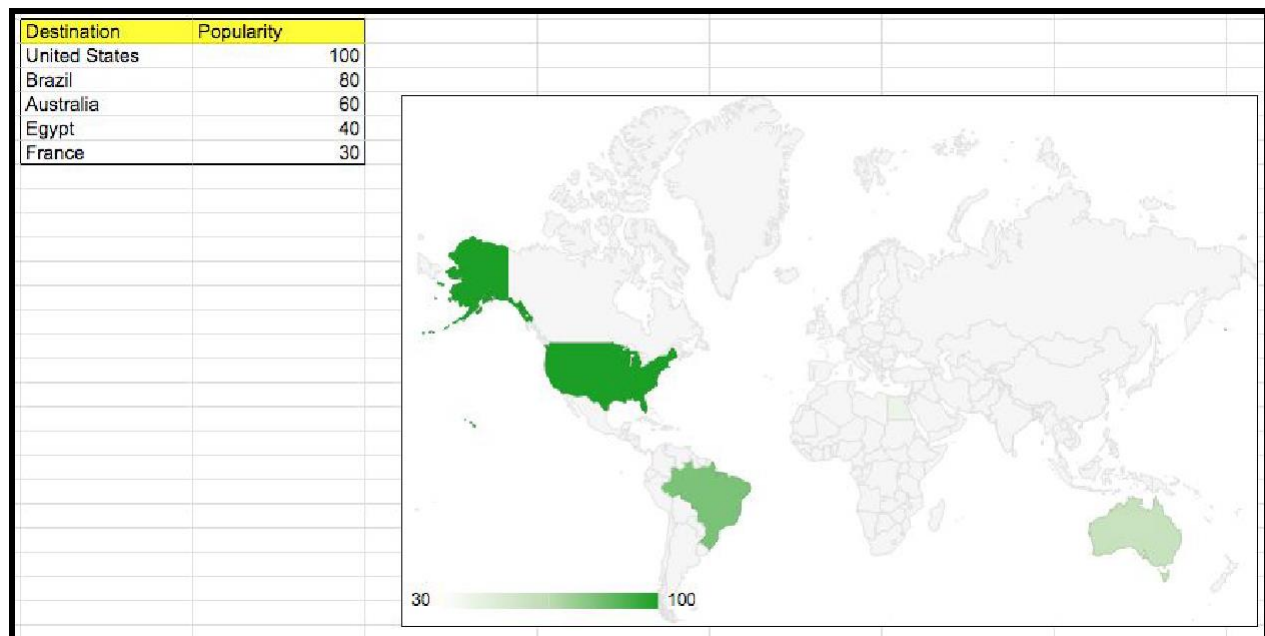
E. TABLE CHART

A. History of Housing & Homelessness		
1. Where do you sleep most frequently?	Number	Percentage
Shelters	117	40.21%
Couch Surfing	35	12.03%
Outdoors	11	3.78%
Other	128	43.99%
Refused	0	0.00%
EXPERIENCED 6+ CONSECUTIVE MONTHS OF HOMELESSNESS AND/OR 3+ EPISODES OF HOMELESSNESS	173	59.45%
2. Average total length of time in months without permanent stable housing	29	N/A
3. Average # of times homeless within past year	3	N/A

A table chart turns your standard spreadsheet table into chart that can easily be sorted and paged. When viewing the table, you can select single rows with either the keyboard or the mouse, and you can sort individual columns by clicking on column headers. If your table is particularly large, the header row remains fixed as you scroll.

- **Data format:** Unlike most charts, the data format for a table chart is flexible and customizable, with the one restriction that the data within each column must be consistent. A column should contain data formatted in the same way -- if you mix-and-match data formats within a column, the table won't render properly.

F. MAP CHART



A Map chart is a map of a country, continent, or region map, with colors designating values associated with each of the map's locations.

- **Data format:** In the first column, enter location names or region codes. In the second column, enter numeric values. These values will modify the color density of each location.
- **Creating a Map chart:** Let's say you're displaying countries in terms of population, and you want to show this information on a map. List the locations in the first column, and enter the number of people who live there in the next column. To create a map from your data set, select Insert > Chart. In the charts dialog, click the Chart types tab, then click Map. Select one of the GeoMap options. Navigate to the Customize tab, where you can modify the color that appears on your map. For example:

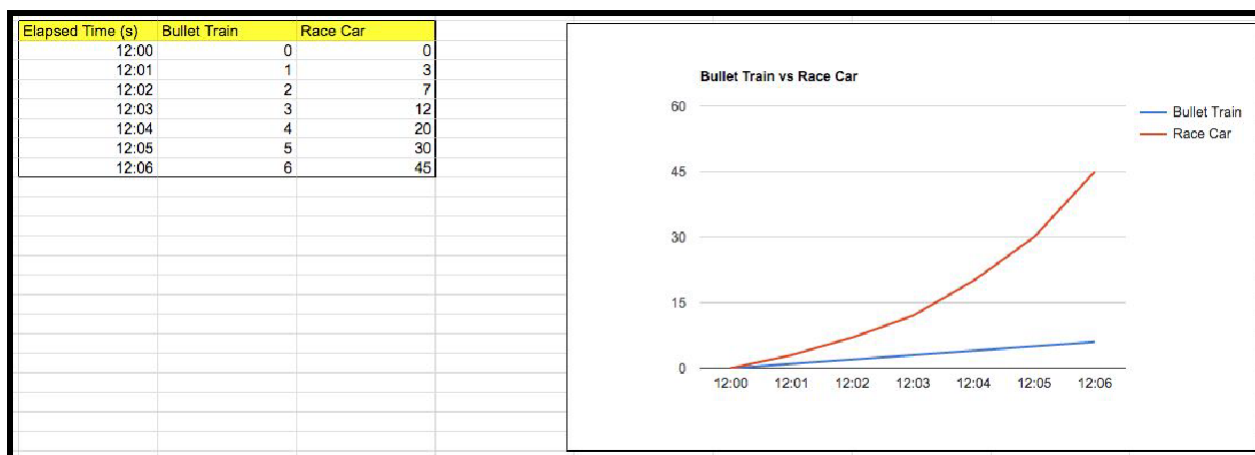
Min (0): Select White as the corresponding color

Mid (50): Select a Medium Green color

Max (100): Select a Deep Moss color

You can create a Map chart with the values associated with each country designated through colors only. Or, you can use a circular marker for each country, designating the relative size of the value associated with the country through color and the marker's size. Click Insert, and your chart will be inserted into your spreadsheet.

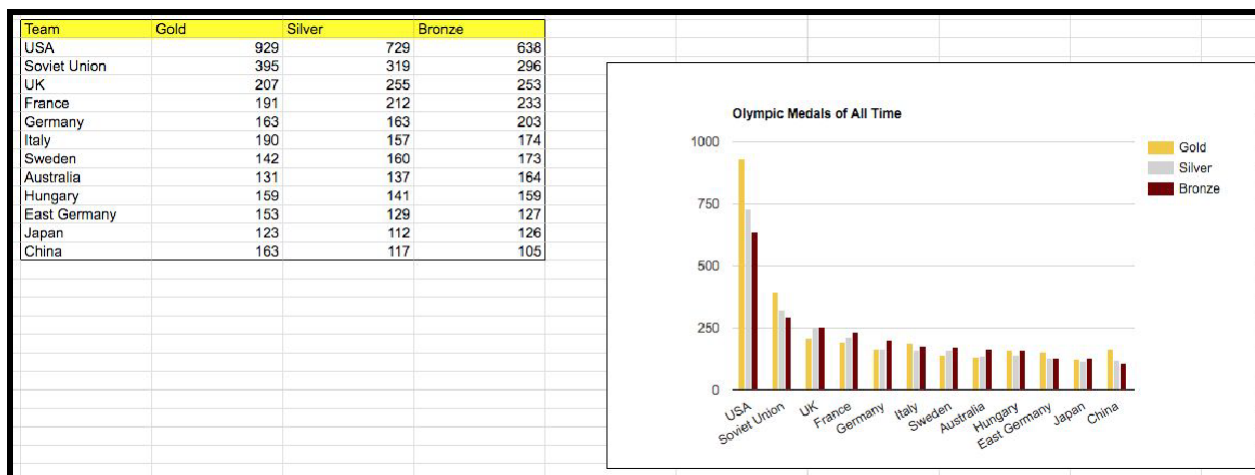
G. LINE CHART



A line chart is a good way to display numeric data graphically, and is particularly useful when expressing changes in value between categories of data.

- Data Format:** In the first column, enter a label to describe the data represented in the line chart. The remaining columns will each represent a line on the chart and must contain numeric data. You can have one or more of these columns to show on the chart. The data format for a line chart is the same as the data format for bar, area, and column charts. You may also want to name each of the columns containing your data. If you do so, we'll automatically detect these names and use them as labels for your data on the chart. You can also set or change this setting by selecting the checkbox that reads 'Use Row A as headers.'

H. COLUMN CHARTS



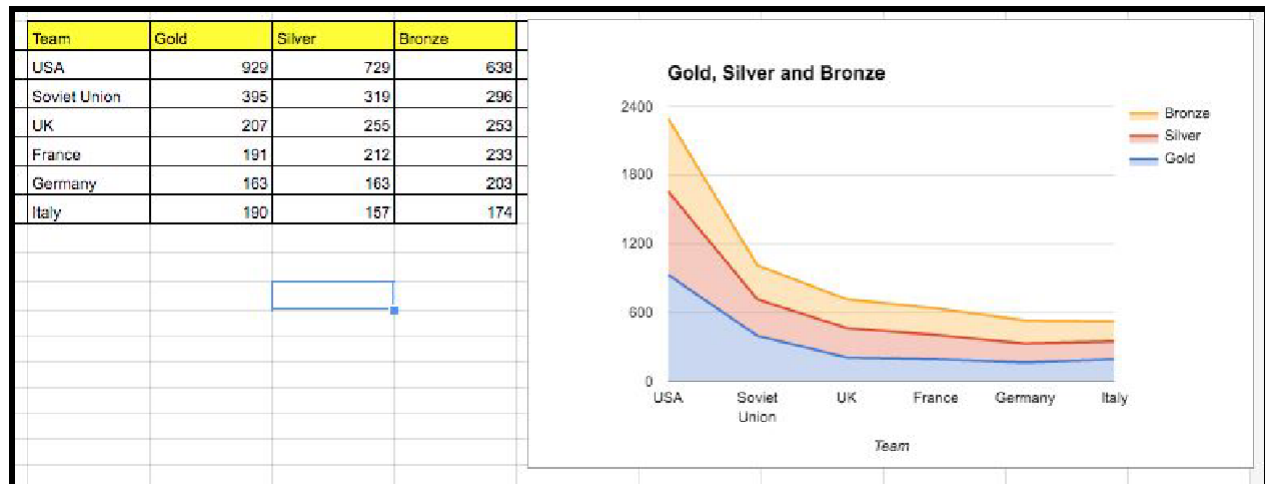
Column charts are a good way to visualize one or more categories of data, particularly if each category has sub-categories. These charts allow you to visually express the difference between the data points of each category. In the chart below, for example, we can track Olympic medals earned by country, with the sub-categories of Gold, Silver and Bronze medals.

- Data Format:** Each row in your spreadsheet represents a different column in the chart. In the first column of your spreadsheet, write the labels or classifications for each row.

For example, this could be countries or other classifications of data. Each remaining column needs to contain numeric data. The data format for a column chart is the same as the data format for bar, line, and area charts. You may also want to name each of the columns containing your data. If you do so, we'll automatically detect these names and use them as labels for your data on the chart. You can also set or change this setting by selecting the checkbox that reads 'Use Row A as headers.'

- **Stacked column chart:** Data for a stacked column chart is structured in the same way as a standard column chart. In stacked column charts, however, each category has only one column. This column contains all data for any given label or classification, and allows you to see the relationship of parts to the whole.
- **Histogram:** A histogram displays the distribution of a data set. In your spreadsheet's first column, put labels for your groups of data. Then, in subsequent columns, place numeric values, each representing items in a distribution. Only one column of data is required to generate the histogram. For each column, the values from all rows are grouped into numeric buckets. The histogram displays the number of values in each bucket, using the height of each bar to represent the count of values.

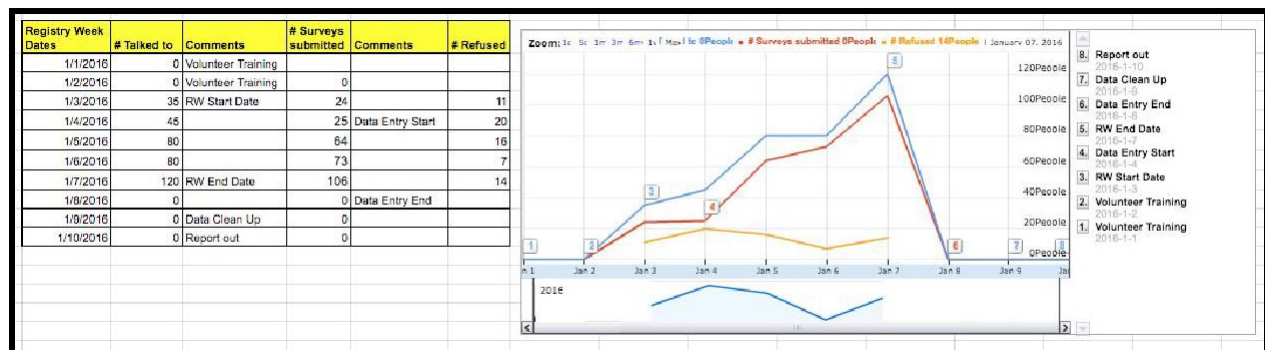
I. AREA CHARTS



Much like a line chart, an area chart tracks one or more data series graphically, and is particularly useful when expressing changes in value between categories of data.

- **Data Format:** In the first column, enter a label to describe the data you're displaying in the area chart. For example, you could enter dates or times. The remaining columns will each represent an area on the chart and must contain numeric data. You can have one or more of these columns to display on the area chart. All data values must be positive in an area chart. The data format for a area chart is the same as the data format for bar, line, and column charts. You may also want to name each of the columns containing your data. If you do so, we'll automatically detect these names and use them as labels for your data on the chart. You can also set or change this setting by selecting the checkbox that reads 'Use Row A as headers.'

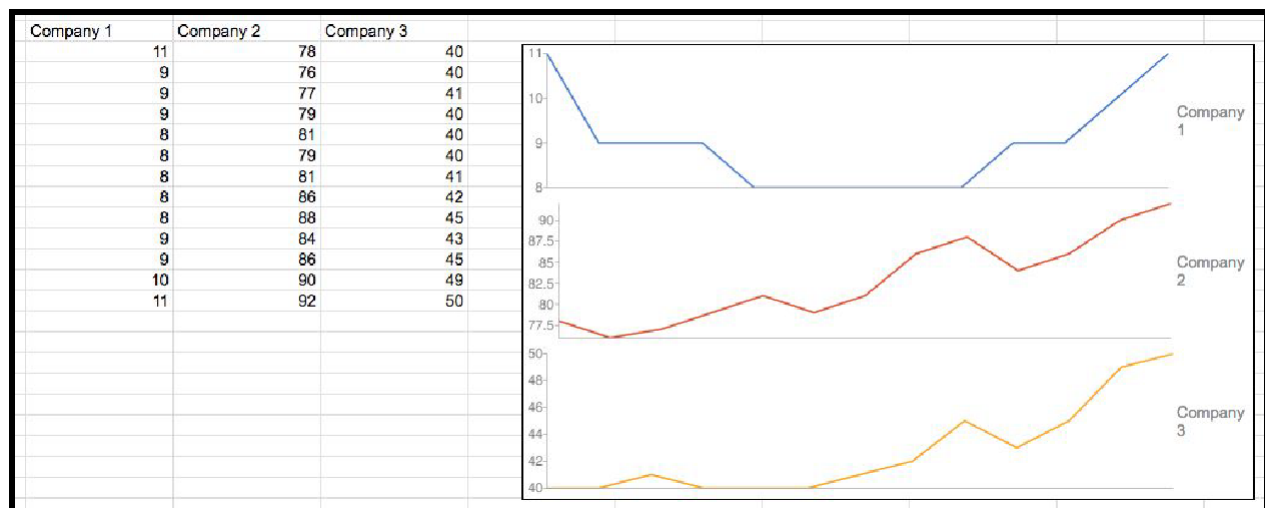
J. ANNOTATED TIMELINE



An annotated timeline is an interactive time series line chart with the option to add annotations. You can display one or more lines on the chart.

- Data format:** The first column in your spreadsheet should contain the date (optionally including the time of day). The following columns should contain numeric values, titles, and annotations. Each numeric column can be followed by one or two optional columns containing text. The values in the numeric column are represented in the Y-axis for the corresponding time in the first column. The text in the first column following a numeric column serves as the titles of your annotations, and the second column with text is the annotation content.

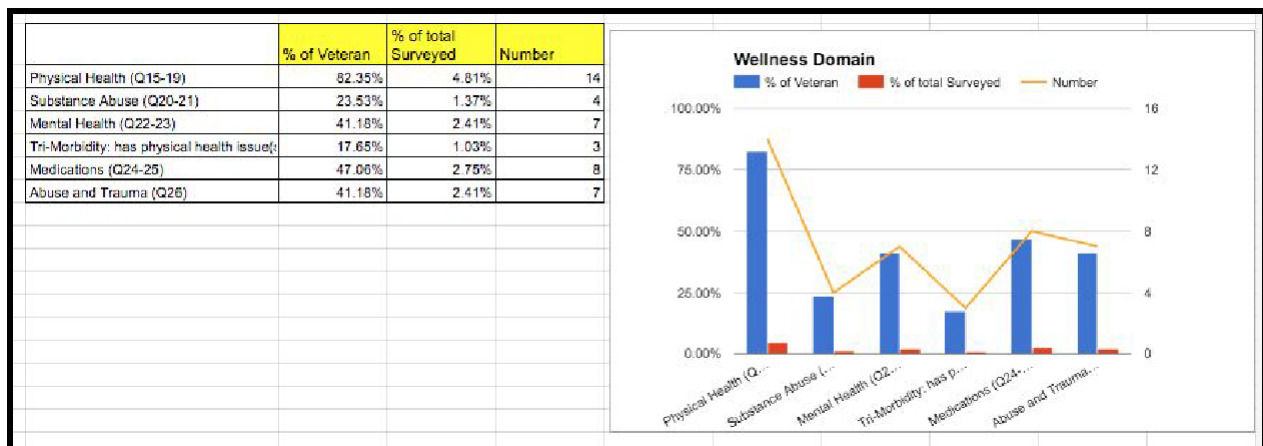
K. SPARKLINES



A sparkline is good for displaying and comparing one or more categories of data, and is often used to display data across a time period. It's similar to a line chart, but displays data lines on separate axes stacked on top of each other.

- Data format:** Each column of the spreadsheet should contain numeric data, and there's no limit to the number of columns that can be displayed in the sparkline. Labeling each column in the spreadsheet will allow you to track your data more easily; these labels will also appear on the chart.

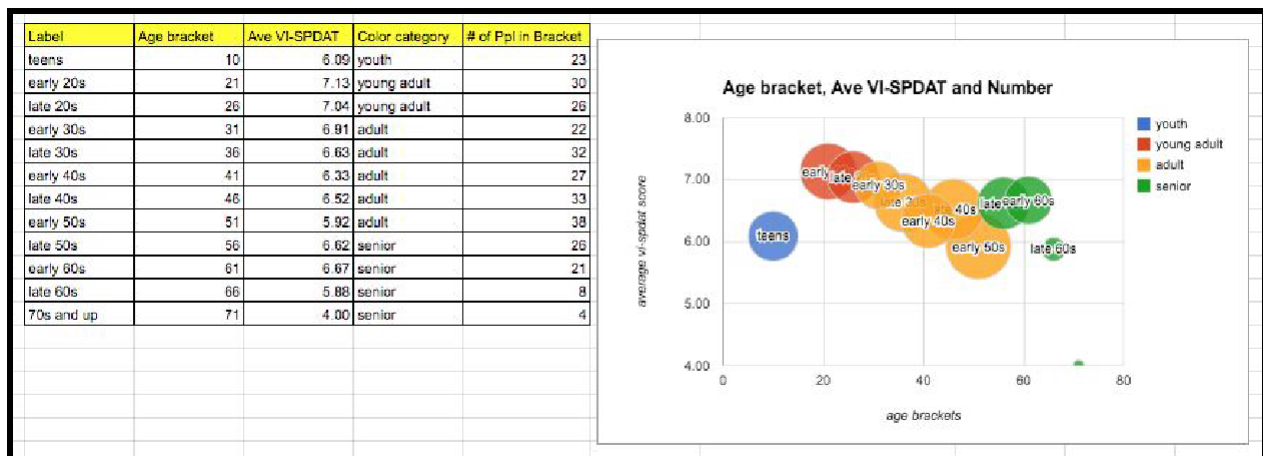
L. COMBO CHART



A combo chart lets you display each data series as a different marker type, such as column, line, or area line.

- Data Format:** The top row of your data set will be the labels for the X-axis of your combo chart. The first column will be the labels for each data series (row) in your data set. The remaining cells should be filled with the data points you'd like to display on your chart. Keep in mind that the top left cell will always be ignored.
- Creating a combo chart:** To create a combo chart from your data set, select Insert > Chart. In the charts dialog, click the Chart types tab, then click Line. Select the combo chart option. In the Customize tab, choose how you'd like to display each data series. Here, you can check the box next to maximize to eliminate whitespace and bring additional focus to the data in your chart. Click Insert, and your chart will be inserted into your spreadsheet.

M. BUBBLE CHART

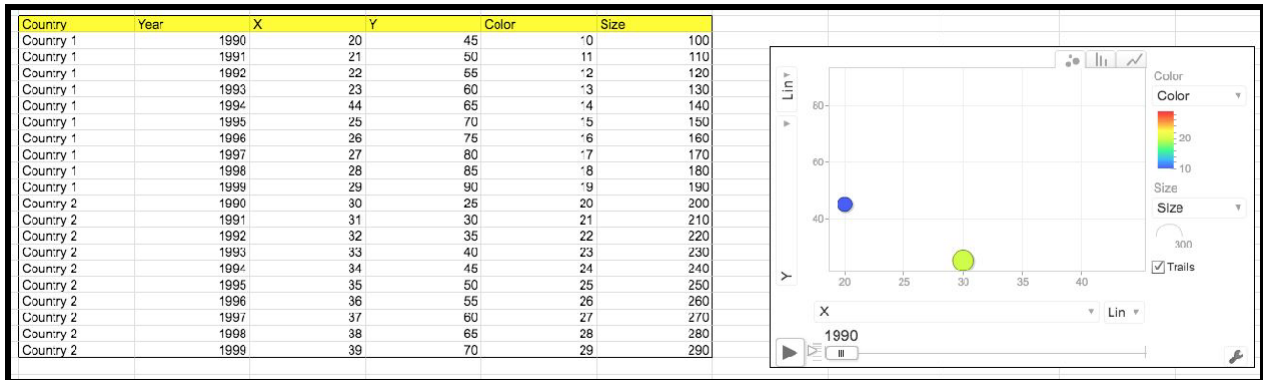


A bubble chart visualizes data with three dimensions. It's similar to a scatter plot where the first two dimensions are the x and y coordinates, but it adds a 3rd dimension which is represented in the chart as the size of the bubble. Your data should be formatted in five columns.

- Column 1 - Must be text and will show labels for the series**

- Column 2 - A number that determines where along the x-axis the bubble appears
- Column 3 - A number that determines where along the y-axis the bubble appears
- Column 4 - Should be text and determines the color of the bubble (each word gets a different color)
- Column 5 - A number that determines the size of the bubble (the larger the number, the bigger the bubble)

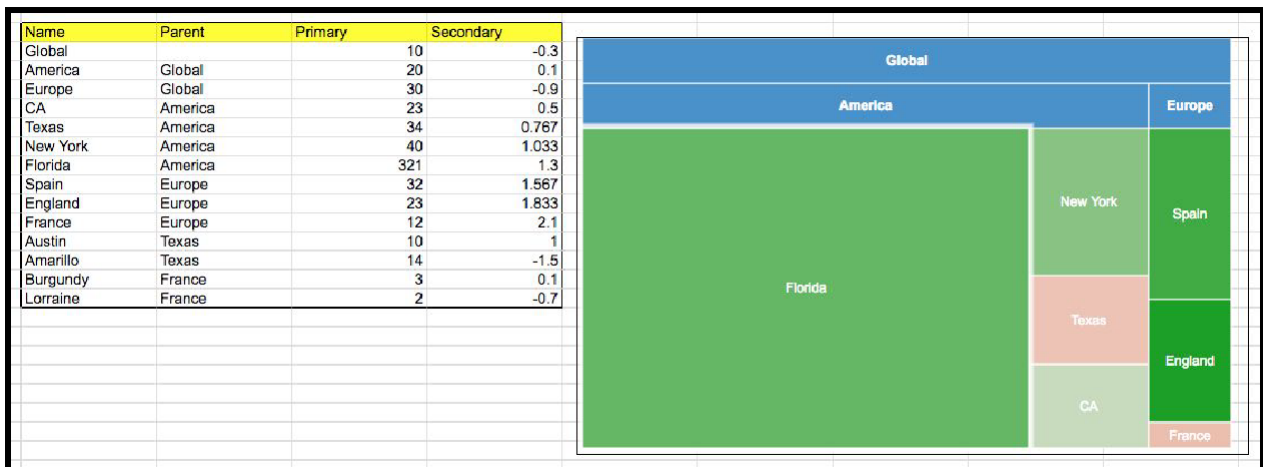
N. MOTION CHART



A motion chart is a dynamic chart that shows information about several indicators over time. Based on the data in your spreadsheet, you'll be able to mix-and-match data categories and create a variety of motion graphics within a single chart.

- **Data format:** The first column in your spreadsheet should contain the entity names that you want to track in the motion chart. The second column needs to include date values, either in year, month/day/year, week number or quarter format. All subsequent columns can contain either numeric or text data. Text data, for example, could be an indicator of the weather for a given day -- "cloudy", "raining", or "clear" -- or the name of the current CEO for corporate data.) Columns that display numeric data will be available in the X, Y, Color and Size axes of the motion chart, while columns containing text will only appear in the drop-down menu for Color.

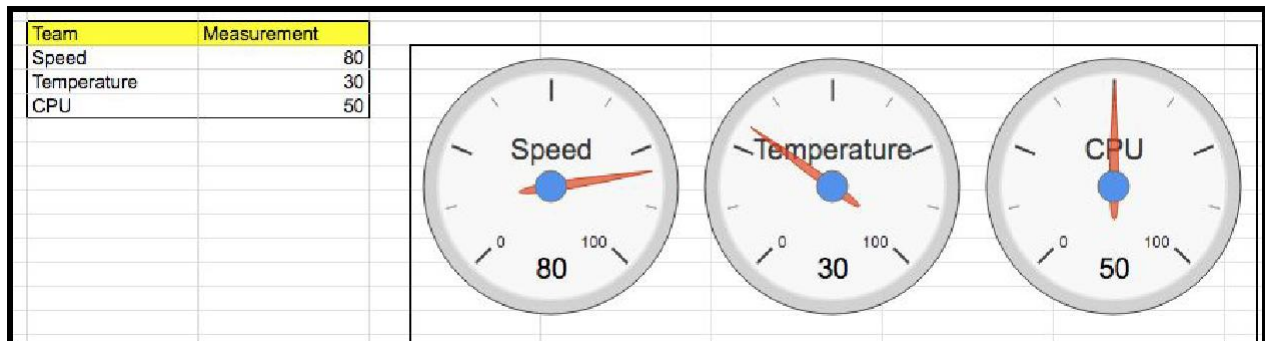
N. TREE MAP



A Tree map is a visual representation of a data tree, organizing objects in a structure of parent-child hierarchies.

- **Data format**
 - In the first column, enter the name of an object in your hierarchy.
 - In the second column, enter the name of the object's parent. Each parent name must also appear in the first column.
 - The third column is the numerical value of the object and controls the size of the box. This value must be positive. This column might be empty for entities with children entities, since the value for a parent entity is calculated by aggregating the values of the children.
 - The optional fourth column is a numerical value that controls the color of the box. The values in the fourth column aren't aggregated and they can be negative.
- **Creating a tree map chart:** To create a tree map from your data set, select Insert > Chart. In the charts dialog, click the Chart types tab, then click the "Tree map" option under "Other." Navigate to the Customize tab, where you can modify the color that appears on your map and select the number of levels of data that you want to display on your chart. Then, click Insert.

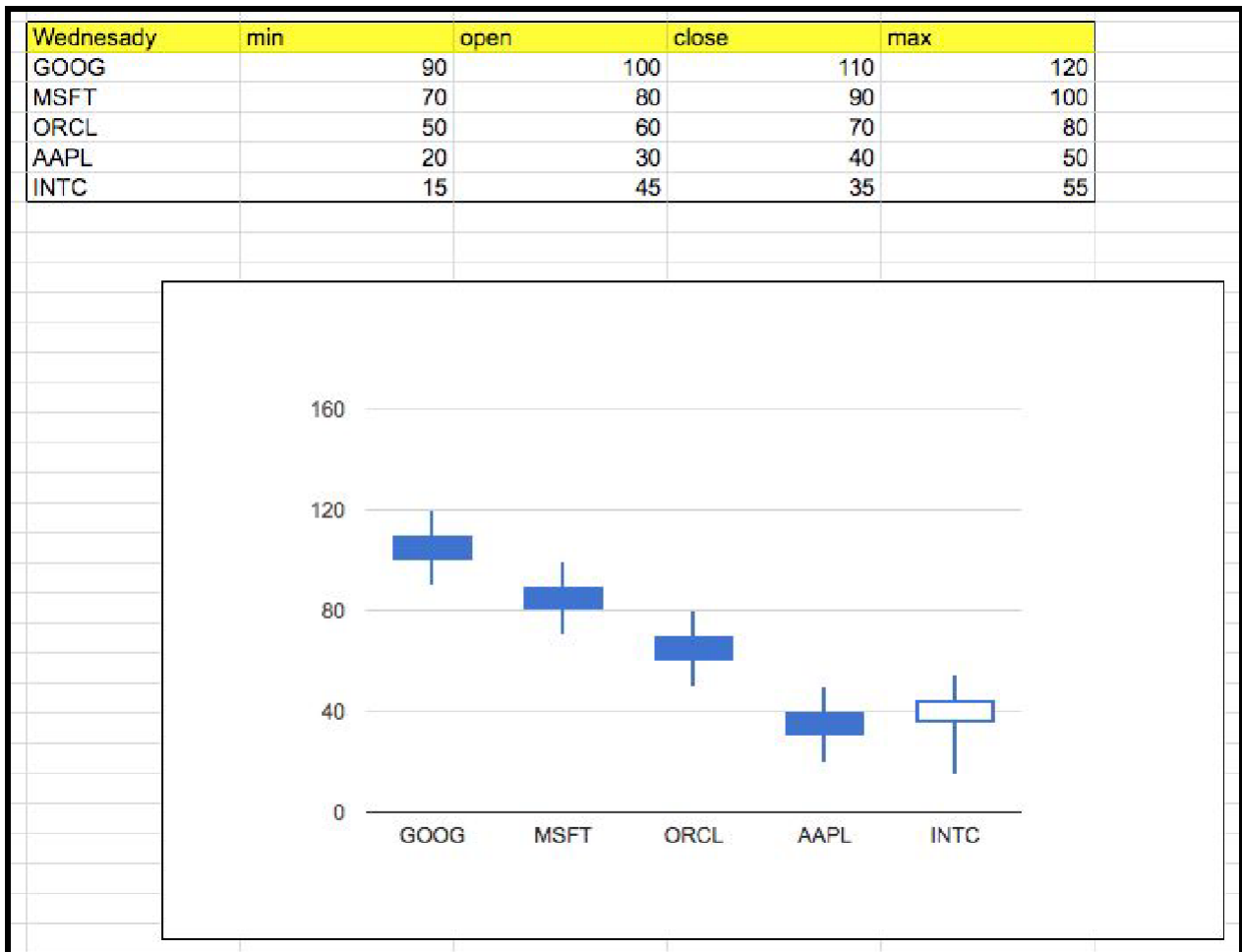
O. GAUGES



Gauges allow you to display numeric values or measurements within a range. Each value produces a gauge, allowing you to compare and contrast measurements in a visual way.

- **Data format:** List the gauge label in one column, and their respective numeric values in the second column.

P. CANDLESTICK CHART

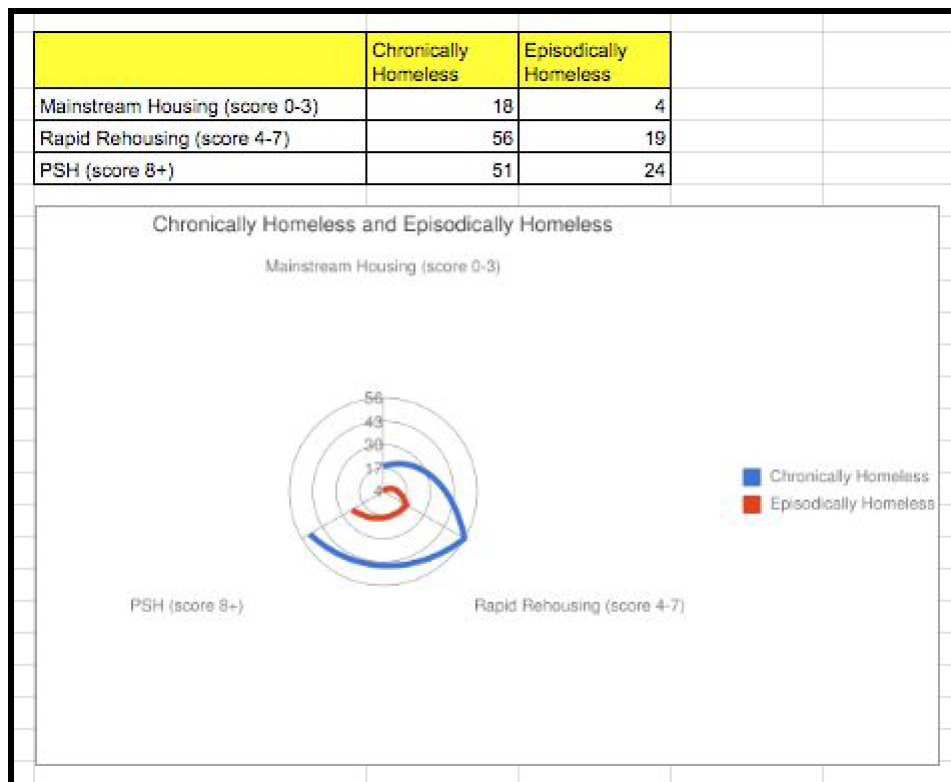


To create a candlestick chart, enter the following values into columns. Each row describes a single candlestick marker.

- Column 0: Enter a label for the X-axis.
- Column 1: Enter a number specifying the low/minimum value of this marker. This is the base of the candle's center line.
- Column 2: Enter a number specifying the opening or initial value of this marker. This is one vertical border of the candle. If this value is less than the value in Column 3, the candle will be filled; otherwise, it will be hollow.
- Column 3: Enter a number specifying the closing/final value of this marker. This is the second vertical border of the candle. If this value is less than the column 2 value, the candle will be hollow; otherwise, it will be filled.
- Column 4: Enter a number specifying the high/maximum value of this marker. This is the top of the candle's center line.

To create a candlestick chart from your data set, select Insert > Chart. In the charts dialog, click the Chart types tab, then click Trend. Select the candlestick chart, and click Insert. Your chart will be inserted into your spreadsheet.

Q. RADAR CHART



A radar chart is a good way to display one or more variables in a two-dimensional graph, with one spoke for each variable. A line connects all of the data points from your spreadsheet along each spoke.

- Data Format:** You can set up your data in one or more columns. In the optional first column, you can enter qualitative data that will replace the 'degree' labels along the outer circle. All of the other columns should contain numeric data that will serve as the data points along each spoke of the radar chart.

PART V: Presenting Your Data

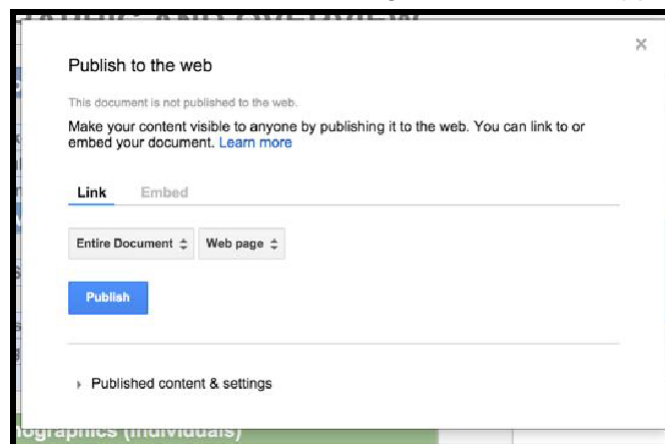
Anyone can view a Google Docs, Sheets, or Slides file that you publish¹⁴ to the web. When a file is published, a copy of the original file is made. The copy is the file that people see when they visit your website. It doesn't carry over sharing permissions, so anyone will be able to see it.

You'll still have your original file with the same sharing permissions. Only people with view, edit, or comment permissions will be able to view, edit, or comment on your original file.

If you would like, you can allow and adjust for specific tabs from your spreadsheets to be publically available. For example, a community may decide to make the dashboards component of their data mgmt spreadsheet to be publically available to share as a webpage with different housing agencies in the community.

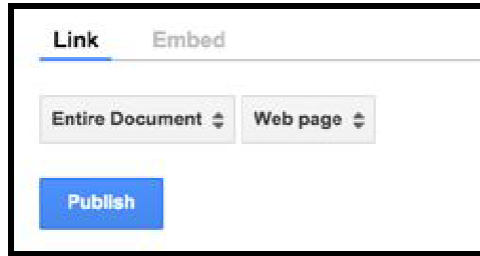
How to Publish Your Dashboards Component of your Data MGMT Spreadsheet

1. Open up the tab that you would like to share in your spreadsheet.
2. In the toolbar underneath the title of the google spreadsheet, please click "File" and then click "Publish to the web..." and the following window should appear:

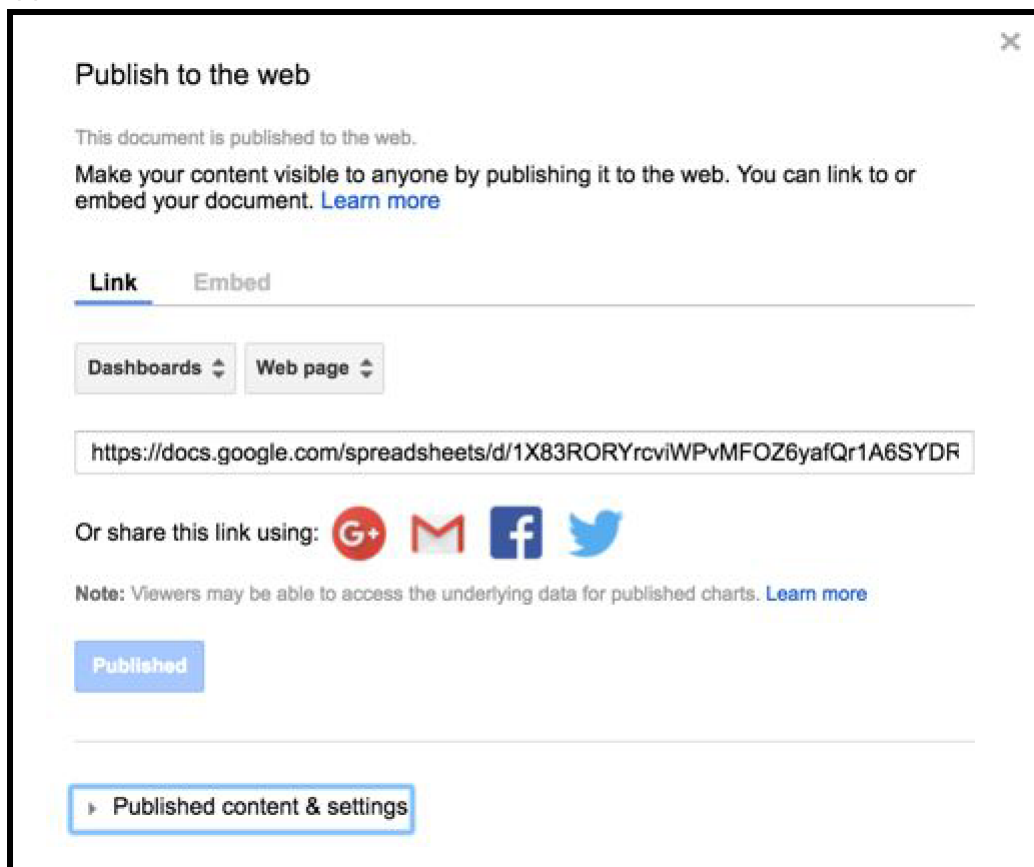


3. You can choose to publish the entire spreadsheet or individual tabs. You can also choose to share a Link or Embed the sheet into a website. Please keep in mind, because you may have client sensitive data in your data mgmt spreadsheet (such as the data in your component B: Tidy data set tab), you will want to publish only individual tabs in this case.
 - a. If you want to share a LINK of the tab you'd like to share, you can choose a publishing format (web page, .csv, .tsv, .pdf, .xlsx, .ods).

¹⁴ <https://support.google.com/docs/answer/183965?hl=en>

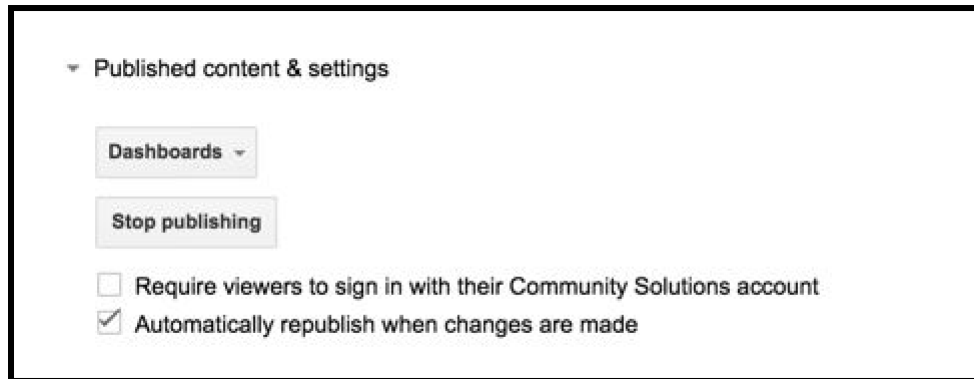


4. Please click the up and down arrows next to the “Entire Document” button. Once you click that, a drop down list of the names of tabs in your data mgmt spreadsheet will show. Please click the name you’ve set for your Dashboards tab in that drop down list.
5. Please select the publishing format (web page, .csv, .tsv, .pdf, .xlsx, .ods) for your ‘Dashboards’ tab. And then click the blue “Publish” button. The following window should appear:



6. You may either copy the hyperlink and share the link with the audience you would like to share this with or you may also choose to embed the dashboards. You may embed by clicking “Embed” and copying and pasting the code in the code box.
 - a. If you would like a preview of what your dashboards will look like, you can copy the link into your web browser.

7. Underneath the blue “Published” button should be “> Published content & settings”. Please click the triangle/arrow icon left of those words. After clicking, the following drop down should appear in the window:



▼ Published content & settings

Dashboards ▼

Stop publishing

☐ Require viewers to sign in with their Community Solutions account

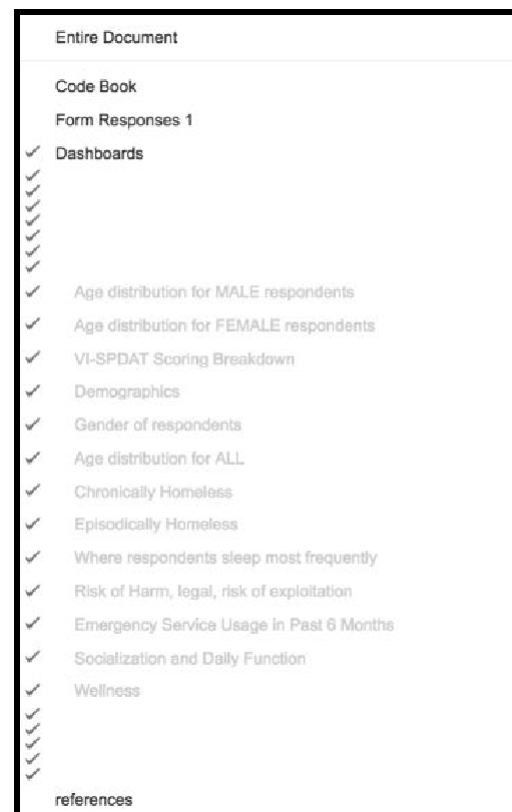
☒ Automatically republish when changes are made

8. Please make sure the box left of “Automatically republish when changes are made” IS CHECKED OFF. This is to ensure that real-time data is shown when sharing.
9. If you are using a business google account, you can choose to have this checked off if you would only like to allow those in your business account to have access to the published tab.

10. Please click the “Dashboards” (or whichever name you’ve assigned for your dashboards tab) button. Once you click that, a drop down list of the names of tabs in your data mgmt spreadsheet will show once again with a check mark left of the name of your dashboards tab as well as to the left of your charts. If there are empty rows that are checked off, these are charts in your dashboards tab without a title.

Please make sure that the OTHER tabs are NOT checked off.

Important Note: If you ever receive a request for access to your dashboard spreadsheet from an unknown user or from someone you would not like to grant access to, please **DO NOT GRANT ACCESS** and **DECLINE** the request.



Entire Document

Code Book

Form Responses 1

✓ Dashboards

✓

✓

✓

✓

✓

✓

✓ Age distribution for MALE respondents

✓ Age distribution for FEMALE respondents

✓ VI-SPDAT Scoring Breakdown

✓ Demographics

✓ Gender of respondents

✓ Age distribution for ALL

✓ Chronically Homeless

✓ Episodically Homeless

✓ Where respondents sleep most frequently

✓ Risk of Harm, legal, risk of exploitation

✓ Emergency Service Usage in Past 6 Months

✓ Socialization and Daily Function

✓ Wellness

✓

✓

✓

references

PART VI: Additional Sample Expansions to Your Data

Let's review the Docs Editors we have created/accessed so far:

1. Your **Google Form: EDIT** version
2. Your **Google Form: LIVE** version
3. Your **Form Response Spreadsheet**
4. Your **Data MGMT Spreadsheet** - with your (a) code book, (b) your tidy data set and formulas, (c) dashboards, (d)* any additional analyses

Once you've completed assessing people in your community who are experiencing homelessness, you may want to use this initial list as the starting point for your By-Name List. This section will go over: (a) how you may use some formulas and create additional spreadsheets to track placement of clients via the macro level, agency level, and case management level of tracking clients, (b) how you may maintain your BNL using a case mgmt spreadsheet.

Sample Case Management Google Sheet

This created [Case MGMT Sample: Sample Cmty - 5/27/16](#) sheet that will be referenced throughout this section of the guide.

This sample Case MGMT sheet includes the following tabs:

- **Sheet 1**: a direct import of Form Responses 1 tab in the [DATA MGMT: SAMPLE Cmty name - VI-SPDAT \(CA V.2.0.\) - 5/27/16](#) sheet
- **Directory**: list of all case managers, affiliate agencies, and contact information
- **Macro level**: macro level view of the different agencies, list of case managers at each agency, and list of clients for each case manager (vis-a-vis drop down menus)
- **SA - CM A**: filtered list of Case Manager A's clients + columns for additional client notes
- **CM A alt view**: an alternate view of Case Manager A's clients vis-a-vis drop down menu
- **SA - CM D & SA - CM G**: both tabs are similar to SA - CM A, except for two other case managers.
- **Agency Level - SA**: agency level view (specifically the 'Stark Agency') of affiliated case managers, and a drop down of clients for each case manager, as well as clients' housing process status

Important Note: If you would like to use a similar setup, please make sure that the right data sharing agreements are in place.

'Sheet1' Tab

Sheet 1 uses the **IMPORTRANGE** function to import the Form Responses 1 (tidy data set) tab to this spreadsheet.

IMPORTRANGE Function

The IMPORTRANGE function¹⁵ imports a range of cells from a specified spreadsheet.

Syntax: =IMPORTRANGE(spreadsheet_key, range_string)

- spreadsheet_key - The URL of the spreadsheet from where data will be imported.
 - The value for spreadsheet_key must either be enclosed in quotation marks or be a reference to a cell containing the appropriate text.
- range_string - A string, of the format "[sheet_name!]range" (e.g. "Sheet1!A2:B6" or "A2:B6") specifying the range to import.
 - The sheet_name component of range_string is optional; by default IMPORTRANGE will import from the given range of the first sheet.
 - The value for range_string must either be enclosed in quotation marks or be a reference to a cell containing the appropriate text.

Note: Spreadsheets must be explicitly granted permission to pull data from other spreadsheets using IMPORTRANGE. The first time the destination sheet pulls data from a new source sheet, the user will be prompted to grant permission. Once access is granted, any editor on the destination spreadsheet can use IMPORTRANGE to pull from any part of the source spreadsheet. The access remains in effect until the user who granted access is removed from the source.

Sheet1 tab in Cas MGMT Sample:

Cell A1:

```
importrange("https://docs.google.com/spreadsheets/d/1X83RORYrcviWPvMFOZ6yafQr1A6SYDRzFj48K  
Cc-kbU/edit?usp=sharing", "Form Responses 1!a2:dc2")
```

Note: this formula excludes the first row from the 'Form Responses 1' tab.

Cell A2:

```
importrange("https://docs.google.com/spreadsheets/d/1X83RORYrcviWPvMFOZ6yafQr1A6SYDRzFj48K  
Cc-kbU/edit?usp=sharing", "Form Responses 1!a4:dc1000")
```

Note: We inserted two importrange formulas because we wanted to remove the third row from the 'Form Responses 1' tab in the Data MGMT spreadsheet that includes formulas.

¹⁵ <https://support.google.com/docs/answer/3093340?hl=en>

If you scroll to column DF:DK, we've inserted columns for the following: case manager's agency, agency address, agency phone number, name of case manager (CM for short), CM's phone number, CM's email address. The sample case mgmt sheet allows for manual inputting of the names of clients' case managers in column DI. Once the case manager's name is inputted in the cell, using a **VLOOKUP** formula connected to the **Directory** tab, the other columns (DF, DG, DH, DJ, DK) are automatically filled in.

VLOOKUP Function¹⁶

Vertical lookup. Searches down the first column of a range for a key and returns the value of a specified cell in the row found.

Syntax: =VLOOKUP(search_key, range, index, [is_sorted])

- search_key - The value to search for. For example, 42, "Cats", or I24.
- range - The range to consider for the search. The first column in the range is searched for the key specified in search_key.
- index - The column index of the value to be returned, where the first column in range is numbered 1.
 - If index is not between 1 and the number of columns in range, #VALUE! is returned.
- is_sorted - [OPTIONAL - TRUE by default] - Indicates whether the column to be searched (the first column of the specified range) is sorted.

Note:

- When searching for numeric or date values, make sure that the first column in the range is not sorted by text values. For example, correctly sorted numbers should appear as (1, 2, 10, 100) rather than (1, 10, 100, 2) as they would be if they were sorted as strings. Using an incorrect sort type may cause incorrect values to be returned.
- Search keys based on regular expressions are NOT supported. Use QUERY instead.
- VLOOKUP has much better performance with sorted ranges and is_sorted set to TRUE. Consider sorting the column being searched.
- You can also find matches using pattern strings that include wildcards. The question mark (?) and asterisk (*) are the wildcards for search_key, with the question mark standing in for a single character and the asterisk standing in for any series of characters. If you need to match an actual question mark or asterisk, add a tilde (~) before the character and add an extra tilde if you're looking for something with an actual tilde in it.

Sheet1 tab in Cas MGMT Sample:

Cell DF2:

=arrayformula(if(\$DI\$2:\$DI<>"", vlookup(\$DI\$2:\$DI, Directory!\$A:\$F, 2),""))

Note:

We've also inserted an IF formula to wrap the VLOOKUP formula, in case the case manager column cell is empty.

¹⁶ <https://support.google.com/docs/answer/3093318?hl=en>

In cell DM2 of the Sheet1 tab, we've inserted the formula:

```
=ARRAYFORMULA($I2:I&" "&$G2:G&" ("&$M2:M&" "&" [VI-SPDAT="&$DC2:DC&""])
```

This consolidates columns I (last name), G (first name), M (social insurance number), and DC (vi-spdat score) into one cell. This will come in handy when aligning specific information to each client. You will want to include any kinds of unique client identifiers (UCI), such as the social insurance number, when creating a column such as this, especially as some clients may share the same names.

'Macro level' Tab

Creating an in-cell dropdown list using 'Data Validation'

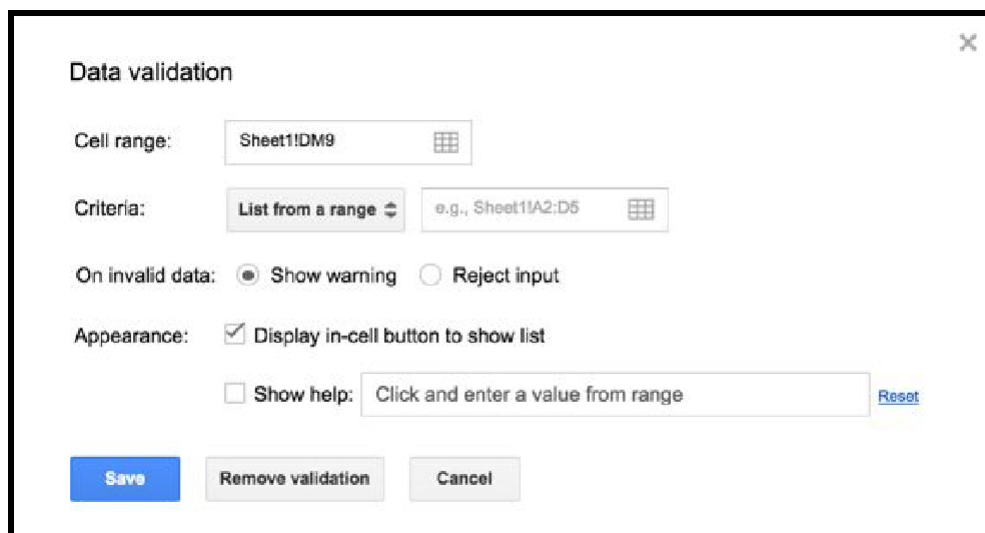
Cell C2 in the 'Macro level' tab has a drop down menu of the three agencies that the case managers listed in the 'Directory' tab represent.

To create this drop down menu of the three agencies, we use sheet **data validation**¹⁷. There are two options for in-cell dropdown lists:

- **"List from a range"** - validation against a range
- **"List of items"** - custom lists

Follow these steps to create an in-cell dropdown list based on a range of cells or a list:

1. Select the cell or cells in which you'd like to create a dropdown list.
2. Click Data > Validation.
3. In the dropdown menu next to "Criteria," select either **List from a range** or **List of items**.



¹⁷ <https://support.google.com/docs/answer/139705?hl=en>
<https://support.google.com/docs/answer/186103>

- a. If you selected "List from a range," select a range of cells containing the values that will populate the list. If you change the contents of the range you've selected, the changes will be reflected in the list contained in the validated cell.
 - b. If you selected "From a list," enter a set of custom values, separated by commas. For example, you could enter "peaches,plums,apricots,cherries." (Note: Don't use spaces after commas.)
4. By default, the cells you selected will contain an arrow button which, when clicked, will display the dropdown list. If you don't want the cells to display the arrow button, uncheck the checkbox that says "Display in-cell button to show list."
5. Click Save. The cells you chose to validate will now display a dropdown list with permitted values whenever a user edits the cell.

By default, people are allowed to enter data in a cell that doesn't match one of the items on the list. If they do, they'll see a warning. If you want to be more strict and allow people only to enter information from the list, choose "Reject input" next to the "On invalid data" option.

The INDEX & MATCH function

In cell C5 and cell C8, we use a combination of the INDEX and MATCH function. This is similar to the VLOOKUP function, however, with the VLOOKUP function, it's difficult to return a value that is in a column left of the lookup column.

INDEX & MATCH Combo

The INDEX¹⁸ function returns the content of a cell, specified by row and column offset.

The MATCH¹⁹ function returns the relative position of an item in a range that matches a specified value.

The INDEX/MATCH combo can be used to return values that lie to the left of the lookup column.

Syntax: =INDEX(reference, MATCH(search_key, range, search_type))

- reference - the list that contains the value we wish to return
- search_key - The value to search for
- range - The one-dimensional array to be searched.
 - If a range with both height and width greater than 1 is used, MATCH will return #N/A!.
- search_type - [OPTIONAL - 1 by default] - The manner in which to search.
 - 1, the default, causes MATCH to assume that the range is sorted in ascending order and return the largest value less than or equal to search_key.
 - 0 indicates exact match, and is required in situations where range is not sorted.
 - -1 causes MATCH to assume that the range is sorted in descending order and return the smallest value greater than or equal to search_key.

Macro Level tab in Case MGMT Sample:

Cell C5

=INDEX(Directory!D:D, MATCH(C2, Directory!B:B,0))

¹⁸ <https://support.google.com/docs/answer/3098242?hl=en>

¹⁹ <https://support.google.com/docs/answer/3093378?hl=en>

In cells C12:C40, we use a combination of INDEX, MATCH, FILTER, and COUNTIF formulas. This combination formula extracts a list of all the unique values from the Sheet1 tab. However, a simple **FILTER** function will provide the same value if filtering from the Directory tab.

FILTER Function²⁰

The FILTER function returns a filtered version of the source range, returning only rows or columns which meet the specified conditions.

Syntax: FILTER(range, condition1, [condition2, ...])

- range - The data to be filtered.
- condition1 - A column or row containing true or false values corresponding to the first column or row of range, or an array formula evaluating to true or false.
- condition2 ... - [OPTIONAL] - Additional rows or columns containing boolean values TRUE or FALSE indicating whether the corresponding row or column in range should pass through FILTER. Can also contain array formula expressions which evaluate to such rows or columns. All conditions must be of the same type (row or column). Mixing row conditions and column conditions is not permitted.
 - condition arguments must have exactly the same length as range.

Note:

- FILTER can only be used to filter rows or columns at one time. In order to filter both rows and columns, use the return value of one FILTER function as range in another.
- If FILTER finds no values which satisfy the provided conditions, #N/A will be returned.

Macro Level tab in Case MGMT Sample:

Cell C12

```
=IFERROR(INDEX((filter(Sheet1!$DI:$DI, Sheet1!$DF:$DF = $C$2)), MATCH(0, COUNTIF($C$11:C11, (filter(Sheet1!$DI:$DI, Sheet1!$DF:$DF = $C$2))),0)), "")
```

OR

```
=FILTER(Directory!$A:$A, Directory!$B:$B = $C$2)
```

In cells D12:E40, we use VLOOKUP to assign the appropriate case manager phone numbers and emails.

In order to create a drop down of the Case Managers in cell I2, again, we use data validation. We used data validation **against a range** of C12:C40 cells which list the case managers based off the Agency selected in cell C2:

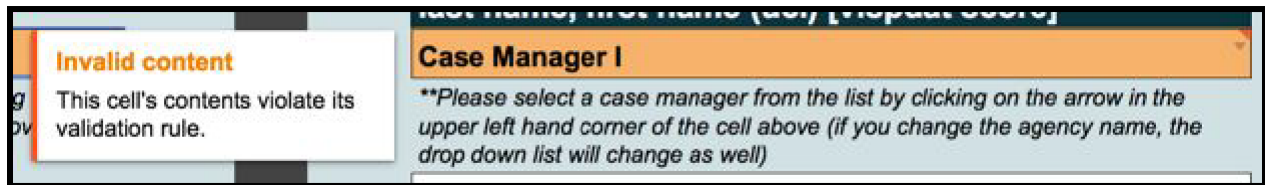
²⁰ <https://support.google.com/docs/answer/3093197?hl=en>

Data validation

Cell range: 'Macro level'!I2 

Criteria: List from a range  'Macro level'!C12:C40 

If we change the agency drop down, the drop down for the list of case managers will change as well. However, if there was already a name of a case manager for a previous agency, you will see that once you change the agency in c2, the case manager dropdown in I2 will flag a 'Invalid content' warning when you hover your mouse over cell I2:



To resolve this, just click on cell I2 and you will see the appropriate case manager list that is affiliated with the corresponding agency in cell C2.

Lastly, in cell I4, we use a FILTER function to extract the clients who are assigned to the listed case manager in I2.

'SA - CM A' Tab

- In cell A1, we use INDEX to transfer over the headers
- In cell A2, we use the FILTER function to transfer over Case Manager A's clients only.
- If you scroll all the way to the right, we've included sample columns of additional information that the case manager may want to collect on his/her clients. For example. We've used DR:DU to input weekly case notes. We've also inserted a housing status column (column DV) as well as columns for document status (DW:DZ). This may be where the case manager can manually update based off her interactions with clients.

'CM A alt view' Tab

- This is an alternative view of the 'SA - CM A' tab. The 'SA - CM A' tab houses data in spreadsheet format. We've organized this alt view tab so that the case manager can find detailed information in vertical format for each client. In cell C2, we've used data validation, against a range from the 'SA - CM A' tab column DM.
- This tab pulls data FROM the SA - CM A tab and does not allow for data to go BACK into the SA - CM A tab, meaning, data cannot be inserted in columns D (client responses) or G (case mgmt) as there are formulas that will pull the data for view only.

'Agency Level - SA' Tab

Lastly we have the 'Agency Level - SA' tab. This is very similar to the 'Macro level' tab, however, it is for one specific agency level view. The one difference is that we have included column J for the housing process status for each of the clients. Because we are pulling in data from three tabs:

- (1) SA - CM A
- (2) SA - CM D
- (3) SA - CM G

We use a combination INDEX & MATCH formula that will pull from all three sheets with an IFERROR formula.

IFERROR Function²¹

Returns the first argument if it is not an error value, otherwise returns the second argument if present, or a blank if the second argument is absent.

Syntax: IFERROR(value, [value_if_error])

- value - The value to return if value itself is not an error.
- value_if_error - [OPTIONAL - blank by default] - The value the function returns if value is an error.

'Agency Level - SA' Tab in Case MGMT Sample:

Cell J3 Formula

```
=iferror(INDEX('SA - CM A'!DV:DV, match(I3, 'SA - CM A'!DM:DM, 0)), "") & iferror(INDEX('SA - CM D'!DV:DV, match(I3, 'SA - CM D'!DM:DM, 0)), "") & iferror(INDEX('SA - CM G'!DV:DV, match(I3, 'SA - CM G'!DM:DM, 0)), "")
```

Note:

Let's break up the first section:

```
iferror(INDEX('SA - CM A'!DV:DV, match(I3, 'SA - CM A'!DM:DM, 0)), "")
```

This first section is matching the contents in the left cell (client info), to the appropriate housing process data from SA - CM A's tab. However, because this is agency level data, there is a drop down menu that may change the name of the case manager - thus, we use the "&" symbol to include the other case managers' clients at this agency. We also use the IFERROR to wrap each section of the formula so that we do not have any error values in the cells.

We then clicked and dragged the formula to cell J60, leaving sufficient room for the number of potential clients a case manager may have.

²¹ <https://support.google.com/docs/answer/3093304?hl=en>

Maintaining your By-Name List (BNL)

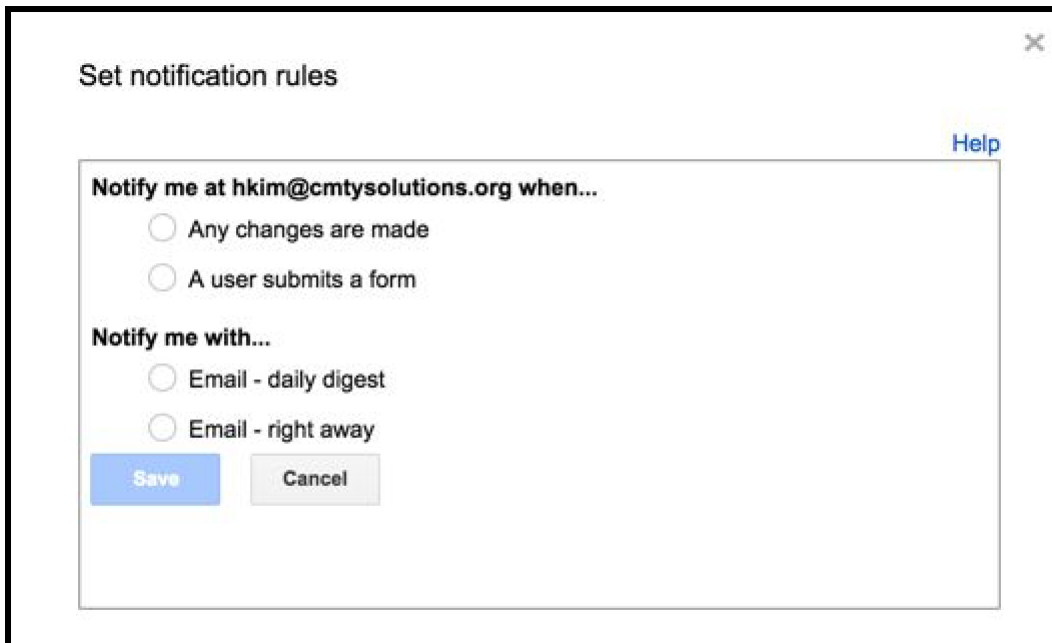
You may use a case mgmt-type spreadsheet to maintain your BNL. If you'd like to learn more about the By-Name List, the following documents are helpful places to start:

- [20K By-Name List Recommendations for Practice V1.0 \[Adopted from Zero\]](#)
- [By-Name List Data Guidance \[Adopted from Zero\]](#)

You may use a case mgmt-type spreadsheet such as the [Case MGMT Sample: Sample Cmty - 5/27/16](#) sheet that was referenced.

To ensure that new inflows of clients are also reflected on your BNL, you can continue using your common assessment google form. The following steps outline how you can capture the new inflows of clients on your BNL:

1. Ensure that those who come in contact with potential clients who are experiencing homelessness are also continuously using the common assessment google form.
2. You may adjust your form response spreadsheet so that you receive email notifications when a form is submitted. To receive or edit notifications, open up your form response spreadsheet > click 'Tools' in your toolbar > click 'Notification rules...' > and the window below will appear. Set your notification settings to your liking and click save.



Set notification rules [X]

[Help](#)

Notify me at hkim@cmtysolutions.org when...

☐ Any changes are made

☐ A user submits a form

Notify me with...

☐ Email - daily digest

☐ Email - right away

Save **Cancel**

3. Make sure to copy and paste new form responses from your form response spreadsheet into your data mgmt - [Component B: The Tidy Data Set + Formulas](#) set tab and that you tidy up the data as well.
4. If you have a similar case mgmt spreadsheet as the referenced [Case MGMT Sample: Sample Cmty - 5/27/16](#) sheet that pulls data from your data mgmt spreadsheet, this should be automatically updated when you paste in new form responses into your data mgmt spreadsheet.

5. Using formulas such as the ones in the previous section [Sample Case Management Google Sheet](#), you can consolidate all case manager's data on clients to pull into one sheet that may house your by-name list.

Important Note: Please make sure that your by-name list includes all relevant recommended data fields (which can be found in the [By-Name List Data Guidance \[Adopted from Zero\]](#) google doc).

PART VII: Premade VI-SPDAT 2.0 (CANADA) Data Platform


If you are a community using the VI-SPDAT (Canadian version 2.0) common assessment, this portion of the guide will review the steps on how you can copy a premade data system for your registry week to use as your own.

Please note: If you've read through the previous parts of this guide, some information may be redundant.






Below are the google system links that you will copy/use/create to copy your VI-SPDAT Data Platform.




VI-SPDAT Data System Links	
A. Sample Community VI-SPDAT (CA V.2.0.) - 5/27/16 (EDIT)	VI-SPDAT Google Form: EDIT version - accessible to the creator/editor of the Form (and a limited number of other collaborators). This is a Google Form replica of the paper version of Sample community's VI-SPDAT (Canadian version 2.0) pdf document.
B. Sample Community VI-SPDAT (CA V.2.0.) - 5/27/16 FORM RESPONSES	VI-SPDAT Form Response Spreadsheet - google spreadsheet where all the raw data from your google form is housed. Community's VI-SPDAT system administrator will create (details on how to create this will be in this how-to document)
C. Sample Community VI-SPDAT (CA V.2.0.) - 5/27/16 (LIVE)	VI-SPDAT Google Form: LIVE version - this is the same as the edit version, but in the fillable format which is accessible to data entry persons (the URL link can be accessed and used by multiple people simultaneously)
D. DATA MGMT: SAMPLE Cmtty name - VI-SPDAT (CA V.2.0.) - 5/27/16	Data MGMT Spreadsheet - with your (a) code book, (b) your tidy data set and formulas, (c) dashboards, (d)* any additional analyses

Step 1: Create a Google Account for your Community (if you don't have one already)

- I. Creating a google account: If you do not yet have a google account, you may sign up for one here → <https://accounts.google.com/SignUp>
- II. Start by signing in to your account.
 4. Go to www.google.com and in the top-right corner, click Signin.
 5. Enter your Google Apps email address (example: joe@company.com) and password.
 6. Click .






Now that you're in your Google Apps account, here are a few key features that work the same way across several products:

Feature	Description
	In the top-right corner of any Google page (such as Search or Gmail), click to see which account you're in.
	Click to move between products.
	Click to change product settings.
	Click to search for content specific to the product.
	Click to see more options.

- III. **The Google Drive**²²  is an online file storage that is automatically attached with your Google account.
 - A. The Drive is where you may access the Google Docs Editors.
 1. Store any files or folders from your computer
 2. Keep Drive organized with folders
 3. Share files with your team
 4. Remove, permanently delete, or restore files
 - B. You may access your Drive:
 1. Using this link → drive.google.com
 2. Or after signing in to your Google account, you may access your drive by clicking on the  icon on the top right-hand corner of your browser window, then clicking on the  Drive icon.

²² For more info on the Drive: <https://apps.google.com/learning-center/products/quickstart/#step-4>

- IV. The Drive is where you may also create, edit, and access the **Google Docs Editors**²³. The Docs Editors are collaborative, web-based, “applications” - where each application functions for different purposes:

Editor	Where	Description	Example uses
 Google Docs	docs.google.com	Text documents	Proposals, reports, shared meeting notes
 Google Sheets	sheets.google.com	Spreadsheets	Project plans, budget sheets
 Google Slides	slides.google.com	Presentations	Pitch decks, training modules, team presentations
 Google Forms	forms.google.com	Surveys	Customer satisfaction surveys, group polls
 Google Drawings	drawings.google.com	Shapes, charts, and diagrams	Flowcharts, organizational charts, website wireframes, mind maps

- V. All links that you will be either copying, creating, or using will be focusing mainly on the following three Docs Editors applications:
- A. **Google Docs**
 - B. **Google Sheets**
 - C. **Google Forms**

A. COPYING - VI-SPDAT Google Form: EDIT Version

Step 2: Request Edit Access to the VI-SPDAT Google Form: EDIT Version

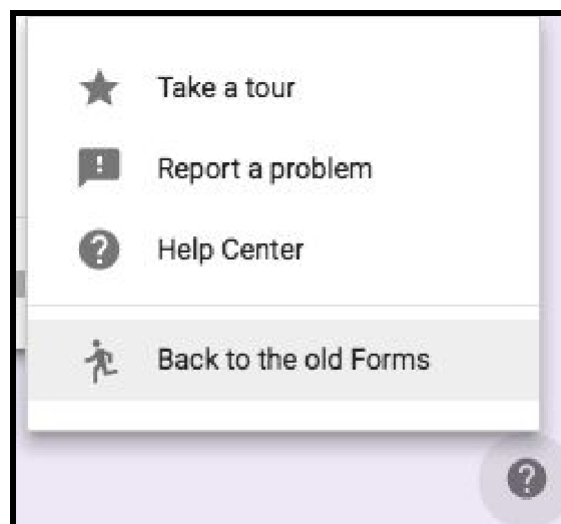
- I. The first link [[Sample Community VI-SPDAT \(CA V.2.0.\) - 5/27/16 \(EDIT\)](#)] is **not** what an edit version of a google form will look like. Google forms do not allow copying of live versions of google forms without editing privileges. Thus, we will have to provide you with edit access to a secondary copy of this VI-SPDAT google form.
- II. To obtain access to a secondary copy of the VI-SPDAT google form, please email hkim@cmtysolutions.org, and insert in the subject line: “RE: VI Google Form Request for Access [NAME OF CMTY]”. In the body of the email, please provide the following information:
 - A. Name of Registry Week community you are representing
 - B. Dates of Registry Week
 - C. Intention of use for the google system
 - D. Name of data point of contact for your Registry Week community and their contact information

²³ For more info on Docs Editors: <https://apps.google.com/learning-center/products/quickstart/#step-5>

- III. Once we receive a request access from you and have verified your intent of use, we will give you editing access to a secondary copy of the VI-SPDAT google form.
 - A. **Please note: We will remove editing access to the VI-SPDAT google form after you create a copy of it on your account.**
- IV. After you receive access to the VI-SPDAT google form, and open the edit version of the form, it should look something like the images pasted below.

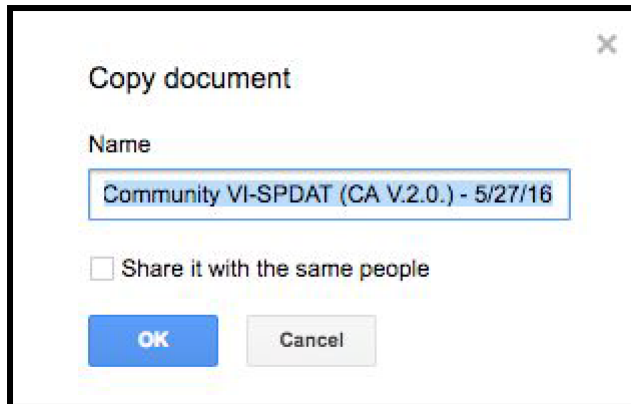
New edit version of Google Forms	Older edit version of Google Forms

- V. The steps in this section, we'll be using the older version of Forms. If you have the newer version of Forms open, you can revert this to the older version by clicking on the “?” button at the bottom right corner of your window and clicking “Back to the old Forms”.



Step 3: Create a copy of the VI-SPDAT Google Form: EDIT Version

- I. Once you're in the older edit version of google forms for the VI-SPDAT Google Form, at the top left of the toolbar, click 'File'. A drop down menu will appear, click 'Make a copy', and the following window will appear:



- II. You may go ahead and change the **name** of the VI-SPDAT Google Form to your liking. And please make sure that the checkbox left of "Share it with the same people" is NOT checked off and click the blue '**OK**' button.
- III. Now you have a copy of the VI-SPDAT Google Form under your google account!
- IV. In your copy of the VI-SPDAT Google Form, you will want to check the following:
Form Settings
 - A. You will want to make sure that your '**Form Settings**' are adjusted properly. Your Form Settings may look like this if your account is under a Professional/Business Google Account:



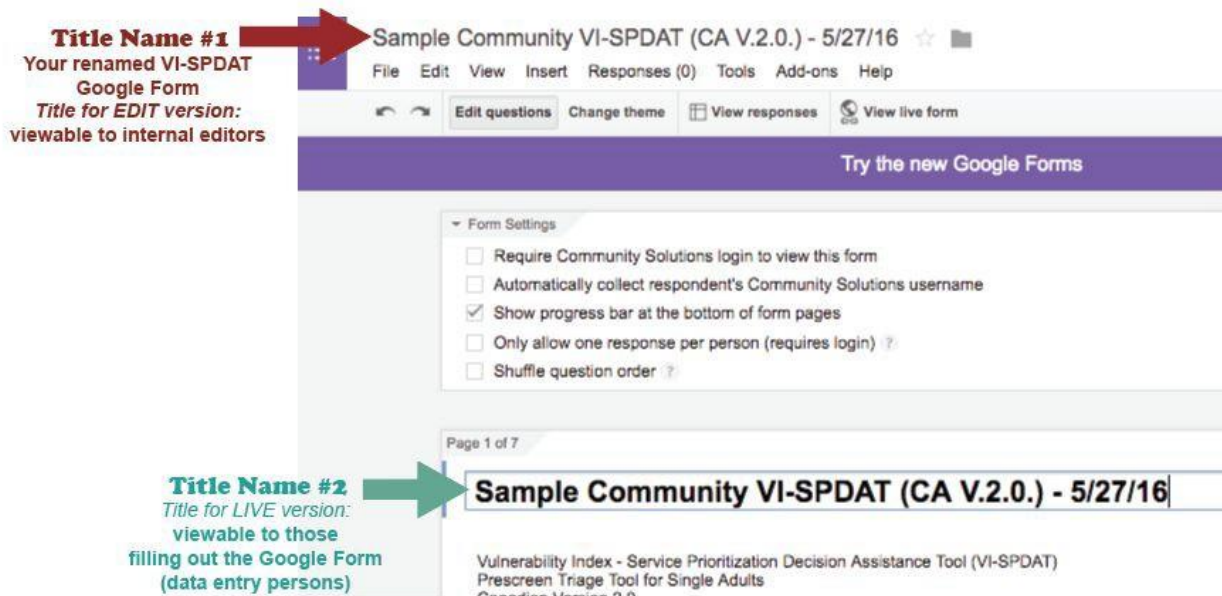
Or it may look like this with the basic/free Google Account:



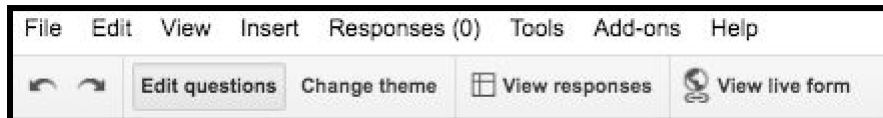
- B. For either account types; you will want to have none of the checkboxes checked in and the **ONLY** checkbox that can be checked (if you prefer) is the one left of "Show progress bar at the bottom of form pages".

Form Title

- C. You will want to change the title of your Google Form. '**Title Name #1**' (in the image below) is the title for the EDIT version of your google form which you should have already renamed when you created the copy. This title is only viewable to the internal editors/collaborators of your google form (if any) who also have edit access. If you'd like to rename 'Title Name #1', you may do so by clicking on it directly.
- D. '**Title Name #2**' (in the image below) is the title that will show in the LIVE version of your VI-SPDAT google form and will be viewable to those filling out the form such as your data entry persons. You may change Title Name #2 to your liking.



- V. You will want to delete the form responses spreadsheet after the initial copy of the google form. Please click "View responses" under the top toolbar.



- A. If a spreadsheet does NOT open up but instead you see the following window, then please CLICK THE "X" at the top right hand corner of the window.

Choose response destination

☒ New spreadsheet

CS Copy of Barcelona, Spain - VI-SPDAT

☐ New sheet in an existing spreadsheet...

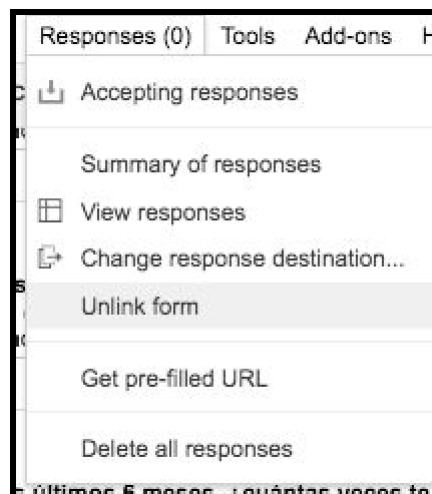
☒ Always create a new spreadsheet ?

[Create](#) [Keep responses only in Forms](#) [Learn More](#)

FORM RESPONSES → SPREADSHEET

Modify, re-arrange, and analyze without affecting original form responses.

- B. If a spreadsheet opens up with “...(Responses)” at the end of the title of the spreadsheet, then you will need to “**Unlink form**” so that the responses are not housed in that spreadsheet but are instead housed within the google form itself (until AFTER data entry of actual client assessments are complete). In your **EDIT version** of the VI-SPDAT google form, click “Responses (0)” in the top toolbar > then click “Unlink form”.



The following window will pop open. Please go ahead and click “Unlink”

Unlink form

Are you sure that you want to unlink this form with the current spreadsheet?

New responses to this form will no longer be sent to the spreadsheet but existing data will not be deleted. You can set this up again in the future under the **Responses** menu.

[Learn More](#)

[Unlink](#) [Cancel](#)

Go to your “...(Responses)” spreadsheet (which is now unlinked) > click “File” > then click “Move to trash”. The window below will open > click “Go to Sheets home screen”



Important Notes: for your VI-SPDAT Google Form: EDIT Version

- **If any question items are newly created, edited, rearranged, and/or deleted, the latter copies of data mgmt and case mgmt sheets may require editing or may not be applicable for your edited VI-SPDAT google form.**
 - If you are doing minimal editing and require assistance with editing the data mgmt and/or case mgmt sheets, please let us know at hkim@cmtysolutions.org.
- We **HIGHLY** recommend that ALL edits to the google form be finalized BEFORE your google form is used for data entry of actual clients' common assessments to reduce the chances of inaccurate/misplaced data.
- The [Share your form with collaborators](#) link goes over how you can add additional collaborators for the edit version of your form, however, we suggest that you limit the number of collaborators to curb the chances of accidental edits being made after the form is being used for data entry of actual common assessments.

B. CREATING - VI-SPDAT Form Response Spreadsheet

Step 4: Choosing a form response destination²⁴

In your form, click “View responses” in the toolbar. Once you click “**view responses**”, a window will pop open, such as the one shown below. You will want to select “**New spreadsheet**” which creates a new spreadsheet in Google Sheets for your form responses.

²⁴ https://support.google.com/docs/answer/2917686?hl=en&ref_topic=6063584

Choose response destination

☒ New spreadsheet

sample 2 form (Responses)

☐ New sheet in an existing spreadsheet...

☒ Always create a new spreadsheet ?

Create Keep responses only in Forms Learn More

FORM RESPONSES SPREADSHEET

Modify, re-arrange, and analyze without affecting original form responses.

Step 5: Checking Form Response Spreadsheet Column Sequence

Your form response spreadsheet' first row should have all of the question titles in the exact sequential vertical order of the edit version of your form for each question items created.

Page 1 of 2

Sample Community VI-SPDAT (CA V.2.0.) - 5/27/16

Vulnerability Index - Service Prioritization Decision Assistance Tool (VI-SPDAT)
Pre-screen Triage Tool for Single Adults
Canadian version 2.0
©2015 OrgCode Consulting Inc. and Community Solutions. All rights reserved.
1 (800) 365-0422
info@orgcode.com
www.orgcode.com
GOOGLE FORM CREATED - MAY 18, 2015

Administration

1st Question >>> Interviewer's Name*
Please type the FIRST & LAST name of the person who conducted the assessment

2nd Question >>> Agency (if Applicable)
What agency/organization is submitting this form on behalf of the client?

3rd Question >>> Interviewer Type*
☐ Team
☐ Staff
☐ Volunteer

4th Question >>> Survey Date & Time*
FORMAT: MONTH / DAY / YEAR
Month Day Year Hr Min AM/PM

5th Question >>> Survey Location*

ETC. ETC.

VERTICAL SEQUENCE OF QUESTIONS IN YOUR GOOGLE FORM SHOULD BE THE SAME AS

HORIZONTAL SEQUENCE OF THOSE QUESTIONS IN YOUR FORM RESPONSE SHEET COLUMNS

Sample Community VI-SPDAT (CA V.2.0.) - 5/27/16 (Responses)

File Edit View Insert Format Data Tools Form Add-ons Help All changes saved in Drive

	1st Question in Column B	2nd Question in Column C	3rd Question in Column D	4th Question in Column E	5th Question in Column F	ETC. ETC.
1	Timestamp	Interviewer's Name	Agency (if Applicable)	Interviewer Type	Survey Date & Time	Survey Location
2						
3						
4						
5						
6						
7						
8						
9						

Timestamp will always be in Column A
(when a form is created, this is automatically generated and is not an actual question item on any google form)

If any question items on your google form were newly created, edited, rearranged, and/or deleted AFTER your form response spreadsheet was created, the sequence of questions in your responses spreadsheet may not be in the revised sequence you have on your google form (e.g. a deleted question may still appear in your responses spreadsheet; a newly created question may appear in the last column instead of it's appropriate place). If this is the case, you will want to UNLINK the form from the spreadsheet, delete the delinked spreadsheet, and recreate a new spreadsheet for your responses so that the vertical sequence of questions in your google form are the exact same sequence in your form response spreadsheet (steps on unlinking and deleting your spreadsheet are on the [C. Delinking Your Responses Spreadsheet](#) section of the guide).

Please keep in mind that the first column of your form response spreadsheet will always house the “**timestamp**” column. When a form is created, this is automatically generated (collects data on the exact date/time a data entry person clicks “submit” on the google form).

Again, we **HIGHLY** recommend that ALL edits to the google form be finalized BEFORE your google form is used for data entry of actual clients' common assessments to reduce the chances of inaccurate/misplaced data. Once you have the final version of your google form in the accurate order and all edits are finalized, please double check one last time to make sure the sequencing is accurately reflected in your form response spreadsheet.

C. USING - VI-SPDAT Google Form: LIVE Version

You can access the LIVE version of your form by clicking ‘view live form’ under the top toolbar.



Step 6: Filling out sample assessments

BEFORE your google form is used for data entry of actual clients' common assessments, we highly recommend that you fill out sample assessments (not actual client surveys but fake responses) to get a feel for the google form and to also check for data validity:

- I. Fill out and submit sample assessments in the live version of your google form.
- II. Double check the accuracy of responses of the sample assessments in your responses spreadsheet.
- III. Then delete²⁵ the responses of the sample assessments in your google form. You can delete the sample assessments by clicking the “Responses” menu and then selecting “Delete all responses”. You will also want to check your form response spreadsheet and delete the rows that have sample assessments as well.

²⁵ https://support.google.com/docs/answer/2923993?hl=en&ref_topic=6063584

Important Note: Once you start using your google form for data entry of actual clients' common assessments, please keep in mind, you do NOT want to delete any responses. If there is an accidental submission or duplicate submission, you may delete the row in your responses spreadsheet, but otherwise, you do NOT want to "delete all responses". In addition please do NOT unlink your form during data entry.

Step 7: Data Entry

Depending on how you plan to conduct registry week, you may decide to have surveyors use a paper version of the VI-SPDAT or use the VI-SPDAT Google Form via web-based tablets or phones.

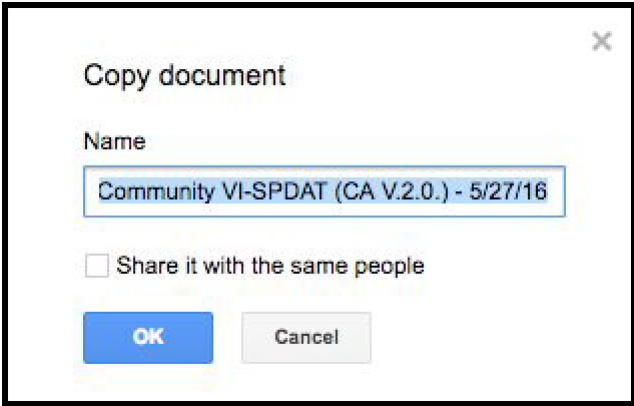
Once data entry is ready to begin, please note the following for those who will be entering the data into the google forms:

- For data entry persons, they will be using the LIVE version of the google form and multiple data entry persons may use the LIVE version URL link of the google form simultaneously. Data Entry persons will NOT need access to the EDIT version of the google form.
- When data entry persons are using the google form, there may be **help text underneath the questions**, please ask data entry person(s) to **read the help text carefully** as incorrectly formatted responses entered may affect the way data is calculated/analyzed for administrators who are using separate data dashboards that will be connected to the responses entered in the form.

D. COPYING: Data MGMT Spreadsheet

Step 8: Copy the Data MGMT Spreadsheet

- I. Click on the [**DATA MGMT: SAMPLE Cmtty name - VI-SPDAT \(CA V.2.0.\) - 5/27/16**](#) link. Once you have the sheet open, click 'File'. A drop down menu will appear, click 'Make a copy', and the following window will appear:



- II. You may go ahead and change the **name** of the Data MGMT spreadsheet to your liking. And please make sure that the checkbox left of “Share it with the same people” is NOT checked off and click the blue ‘OK’ button.
- III. Now you have a copy of the Data MGMT spreadsheet under your google account!

Your Data MGMT spreadsheet houses the following tabs:

- Tab 1: Code Book
 - This is a reference place that lists out the VI-SPDAT form questions, response options for each question, scoring prompts, formulas for scoring prompts, spreadsheet column header letters, etc.
- Tab 2: Form Responses 1
 - This tab is where you will copy and paste your raw client data from your responses sheet. This tab also include pre-made formulas to calculate VI-SPDAT scores. Additionally this is where the data will be pulled from for the third tab.
- Tab 3: Dashboards
 - This tab stores tables and charts of your people who were assessed, using preset formulas.

Step 9: Copying/Pasting the raw client data into your Data MGMT Spreadsheet

- I. In the ‘Form Responses 1’ tab of your data mgmt spreadsheet, you will notice that rows 4 - 295 are filled in with sample data. Please delete those rows only. You can delete by clicking and dragging the row label numbers (placed on the very left side of the sheet) 4 through 295 > right click > and click ‘Delete rows 4-295’.
- II. Open up your form response spreadsheet that is linked to your VI-SPDAT google form, highlight the entire sheet and copy your raw data.
 - A. ***Shortcut for highlighting:*** Near the top left, where the column titles (A, B, C, D....) meets the row titles (1, 2, 3, 4....), click on the box where A and 1 meet (this is the small box right below fx). Once you click this box, the entire spreadsheet should be highlighted. Please copy.
- III. Go back to the ‘Form Responses 1’ tab of your data mgmt spreadsheet. Click on **cell A4 (very important: do NOT copy into cell A3 as row 3 has formulas)**, then paste the copied raw data.
 - A. Because you pasted the entire responses spreadsheet (including the first row which only has the questions as the header),
 1. First, please check to make sure the column headers in the **“Form Responses 1”** tab row 1, match up to the copied headers in row 4. **If the headers DO NOT MATCH UP, please contact hkim@cmtysolutions.org**
 2. Second, you will need to delete row 4 (this should be the header questions). You can do this by clicking on the “4” at the very left column, right click, then click “delete row” from the drop down menu that opens.

- B. Please scroll all the way to the right of the **“Form Responses 1”** tab sheet to **columns CF:DC** - and please make sure that the cells autopopulate in those columns.
- C. Please also check the **“Dashboards”** tab to see that the cells autopopulate with numbers/percentages and that the graphs are accurate.

Step 10: Tidying up your ‘Form Responses 1’ tab.

You will want to ensure that all responses are correctly submitted. For example, if you have a question that requires numerical responses, such as the question “How long has it been since you lived in permanent stable housing? (in months)”, and the response options are a numerical value or the word ‘refused’, you will want to double check that column to ensure that all responses are standard and that no one has submitted an assessment with a response outside of the perimeters of the response options you are looking for. To easily check your raw data, you may use **filtering** (see Appendix II, [7\) Filter your Data](#)) or **conditional formatting** (see Appendix III, [A. HOW TO USE CONDITIONAL FORMATTING](#)).

Additional notes on the “Form Responses 1” tab of the spreadsheet:

1. If you see “#VALUE!” or “#NUM!” in the cells underneath the formula columns (red filled to the right of the ‘Form Responses 1’ spreadsheet) - the corresponding response might be incorrect (e.g. DOB is incorrectly written, or “refused” is spelled incorrectly, etc)
2. If this hasn’t been done already: in the dashboard spreadsheet - within ‘Form Responses 1’ tab - you may want to lock (limit permission levels for) the columns with all of the formulas. You may also want to lock (limit permission levels for) the ‘dashboards’ tab.
 - a. You can set permission levels by clicking “data” (in toolbar) > “protected sheets and ranges”.
 - b. When the right panel opens, click “add a sheet or range”, enter a description; click “range” and then click on the grid icon highlight the rows/columns you want to lock permissions for or click “sheet” and then “set permissions”.
3. The cells under column **CF, CG, & CX** will show “FALSE” as the text - please do not be alarmed! This is okay! It just means that for empty rows, a response of “FALSE” will autogenerate because of the formula that is being used. This does not affect the scoring!
4. Please **DO NOT delete** the THIRD row sample (highlighted in red) as this is where the formulas will be - the **“Dashboards”** tab will not incorporate the third row sample data.
5. **Please DO NOT move the columns or delete any empty columns/rows or cells in ANY tabs as this may affect data validity and dashboards.**

Step 11: Using the ‘Dashboards’ tab

All cells in your ‘Dashboards’ tab should auto populate once the raw client data responses from your form responses spreadsheet are copied into the **“Form Responses 1”** tab. The only cells from the **“Dashboards”** tab that are NOT auto populated are the cells below. You will have to manually type in the appropriate numbers for those cells:

- D6: Total people talked to
- D7: Total surveys submitted
- D8: Total refusals/unable to connect
- (note: cells E6, E7, E8 - WILL auto populate once you manually input numbers for D6, D7, D8)

Important Additional Notes:

- Please **DO NOT rename** ANY tabs as the “**Dashboards**” tab houses formulas that auto-populate data from other tabs.
- Please let us know if you would like us to further customize your dashboards in the “**Dashboards**” tab.

APPENDIX

APPENDIX I: QUICK LINKS REFERENCE LIST

Google Links
Google Apps Learning Center
Google Account: Signing Up
Info on Google Drive
Info on Google Docs Editors
Google docs editors HELP LINK
Google spreadsheets function list
Homelessness Campaign Info Links
Registry Week Information (100,000 homes campaign)
20K By-Name List Recommendations for Practice V1.0 [Adopted from Zero]
By-Name List Data Guidance [Adopted from Zero]
Sample Community VI-SPDAT System Links
Sample community's VI-SPDAT (Canadian version 2.0) pdf
Sample Community VI-SPDAT (CA V.2.0.) - 5/27/16 (google form)
DATA MGMT: SAMPLE Cmty name - VI-SPDAT (CA V.2.0.) - 5/27/16
Case MGMT Sample: Sample Cmty - 5/27/16

APPENDIX II: GET STARTED ON GOOGLE SHEETS (Introductory)

A. Create, Edit, and Format

https://support.google.com/docs/topic/1361470?hl=en&ref_topic=2811806

1) Edit and format data in google spreadsheets

https://support.google.com/docs/answer/46973?hl=en&ref_topic=1361470

You can either add content to an empty cell in your spreadsheet or edit a cell that already has content.

- Add content to an empty cell: Click the cell and start typing.
- Edit a cell that already has content: Double-click the cell you want to edit.
- Add a line break in a cell: To create a line break within a cell while editing, place your cursor in a cell and press Ctrl+Enter (Cmd+Enter on a Mac). You can use this feature to improve the look of text that requires line breaks, such as addresses.

2) Merge cells https://support.google.com/docs/answer/141104?hl=en&ref_topic=1361470

You can combine cells together in documents, spreadsheets, or presentations by merging them. You can also wrap text in a spreadsheet so that you can see all the text inside a cell. To combine cells horizontally and/or vertically in a spreadsheet:

1. Highlight the cells you want to combine.
2. On the toolbar, click Merge .

From the Merge drop-down menu, you can select from the following options:

- Merge all: Merges selected cells into one cell.
- Merge cells horizontally: Merges the cells in each selected row.
- Merge cells vertically: Merges the cells in each selected column.

To unmerge a selected range of cells:

- Highlight the cells you want to unmerge.
- In the toolbar, click Merge .
- Click the arrow to the right of the icon > Unmerge.

3) Wrap text

In a spreadsheet, text that is longer than its cell will overflow into the cell next to it if it's empty, making the full text visible. If the adjoining cells are already full, your text will be clipped off in order to fit. However, if you wish to make it visible, you can wrap the text. If you want the text in the cell to wrap onto a second line in the cell:

- Select the cell.
- In the toolbar, click Wrap text wrap text.

- Click the icon again to turn text wrapping off.

B. Work with sheets, rows, and columns

https://support.google.com/docs/topic/1361469?hl=en&ref_topic=2811806

1) Freeze or unfreeze columns and rows

https://support.google.com/docs/answer/54813?hl=en&ref_topic=1361469

To keep some of your data in the same place as you scroll through a spreadsheet, for example headings or labels, you can freeze rows or columns.

Freeze rows or columns

1. Open a spreadsheet and select a cell in a row or column you want to freeze.
2. Open the **View** menu.
3. Hover over **Freeze**.
4. Select one of the options to freeze up to ten rows, or five columns. You can also choose **Up to current row** (or **Up to current column**) to freeze the rows or columns before a cell you've highlighted.

Unfreeze rows or columns

1. Open a spreadsheet and select a cell in a row or column you want to unfreeze.
2. Open the **View** menu.
3. Hover over **Freeze**.
4. Choose either **No rows** or **No columns** to unfreeze your rows or columns.

2) Add and delete rows or columns in a spreadsheet

https://support.google.com/docs/answer/44684?hl=en&ref_topic=1361469

To add a row or column to a spreadsheet, right-click on the gray area containing the column letter or the row number. Select the action that you'd like to complete. For example, to insert a blank column to the left of the column you selected, you'd select **Insert 1 left** from the drop-down menu. To delete a row or column, select **Delete row** or **Delete column** from the drop-down menu.

If you'd like to insert multiple rows or columns, highlight the number of columns or rows you wish to insert. Then, right click the column or row header, and select "Insert N..." For example, if you highlight five rows, right click the row header, and select **Insert 5 above** or **Insert 5 below**.

To add a large number of rows (100+) to your spreadsheet all at once, scroll to the bottom of the spreadsheet. In the text box, enter the number of rows you'd like to add and click the **Add** button.

3) Copy a sheet

https://support.google.com/docs/answer/180897?hl=en&ref_topic=1361469

You can make a duplicate copy of any sheet in a spreadsheet. That copy can be made within the same spreadsheet or into another, separate spreadsheet.

Here's how to copy a sheet to another spreadsheet:

1. At the bottom of a spreadsheet, click the down arrow next to the sheet name to open the sheet menu.
2. From the menu, click Copy to.
3. Choose the destination spreadsheet from the list.
4. Click Select.
5. If there's already an existing sheet with the same name, the copied sheet will be named "Copy of sheetname."

To copy one sheet within a spreadsheet, follow these steps:

1. Click the down arrow next to the sheet name to open the sheet menu.
2. From the menu, select Duplicate.
3. A duplicate sheet (which contains the exact formatting) will appear in a new tab beside the original sheet. It's labeled Copy of Sheet.

4) Protect a range or sheet from being edited

https://support.google.com/docs/answer/144687?hl=en&ref_topic=1361469

Protect a range or sheet

1. Open a spreadsheet.
2. Select a cell or range of cells.
3. Click the Data menu and select Protected sheets and ranges.
4. In the box that appears on the right, take an action:
 - Add a description (optional).
 - To protect a range, click Range. To protect a sheet, click Sheet.
 - Range: Change or enter the range you're protecting. To do this, click on the spreadsheet grid icon and highlight the range in the spreadsheet. If you chose a cell or range earlier, it'll appear automatically.
 - Sheet: Choose a sheet to protect. If you want a set of cells to be unprotected in a sheet, check the box next to "Except certain cells."
5. Click Set permissions or Change permissions.
6. Choose how you want to limit editing:
 - Select "Show a warning when editing this range" to show a warning when anyone makes an edit. It doesn't block people from editing, but they'll see a message asking them to confirm if they really want to make an edit. This can be useful to prevent typos (even from yourself).
 - Select "Restrict who can edit this range" and choose who can edit the range or sheet:
 - Everyone: Anyone can edit the range or sheet.
 - Only you: Only you (and the owner if you're not the owner) can edit the range or sheet.

- Only domain: If you use Google Apps for work or school, only people in your domain can edit the range or sheet. This option is only available when everyone in your domain can edit the spreadsheet.
 - Custom: Only the people you choose can edit the range or sheet.
 - Copy permissions from another range: Reuse the same permissions you set up on a different set of cells or sheet.
7. Click Save or Done.
 8. To see protected cells you can't edit, click the View menu > Protected ranges. A striped background will appear over the cells.

Who can create a protected range or sheet:

- If you own a spreadsheet: You can set editing permissions for ranges and sheets.
- If you can edit a spreadsheet: You can set editing permission but can't remove editing permission for owners.
- If you can view or comment on a spreadsheet: You won't be able to make any changes or delete a protected range or sheet.

Edit a copy of a protected sheet: To edit data in a copy of a protected sheet

- If you have "edit" permissions: Make a copy of the protected sheet, copy the workbook, or upload a new version.
- If you have "view" permissions: Make a copy of a spreadsheet.
- Warning: Protected ranges and sheets can help stop people from changing a spreadsheet, but they shouldn't be used for security purposes because not all actions are blocked. Other people can still print, copy and paste, and import and export copies of a protected spreadsheet. Only share spreadsheets with people you trust.

5) Hiding rows and columns

https://support.google.com/docs/answer/58142?hl=en&ref_topic=1361469

Hiding and unhiding rows

To hide a row, right-click the number of the row to highlight the entire row. Select **Hide row** from the drop-down menu. An icon appears over the hidden row, and the row's number is no longer visible.

To unhide a row, just click the icon and the row reappears on the spreadsheet.

Hiding and unhiding columns

To hide a column, right-click the letter of the column to highlight the entire column. Select **Hide column** from the drop-down menu. An icon appears, showing the letter of the column that's been hidden. If you have two or more adjacent columns hidden, the icon will show the range of letters, such as B-E.

To unhide a column, click the letter icon and the column reappears.

To hide multiple, adjacent rows or columns all at once, follow these steps:

1. Click the row number or column letter of the first row/column you want to hide. The row/column is highlighted.
2. Press and hold Shift on your keyboard while clicking the last row number or column letter you want to hide.
3. All rows or columns in the range are highlighted.
4. Right-click anywhere in the highlighted range, and choose **Hide rows** from the drop-down menu.

To unhide several hidden rows or columns all at once, just highlight the range and select **Unhide rows/columns**. For example, if you have columns C and H hidden, you can select columns B-I, right-click anywhere in the selected range, and choose **Unhide columns**. All hidden columns in the range will reappear.

6) Hide a sheet from view

https://support.google.com/docs/answer/1218656?hl=en&ref_topic=1361469

Google spreadsheets allows you to take individual sheets out of view by hiding the sheet. This feature is particularly useful if you have individual sheets that are old, rarely used, or are placeholders for calculations used by other sheets.

Note: Hiding a sheet is not the same as [protecting a sheet](#). All editors on the spreadsheet will be able to unhide and view these sheets. Spreadsheet viewers will not be able to view hidden sheets.

How to hide and unhide a sheet

To hide an individual sheet in your spreadsheet, follow these steps:

1. Click on the sheet tab that you'd like to hide.
2. Select **Hide sheet** from the sheet tab menu. If your spreadsheet doesn't contain two or more sheets, this option won't show.
3. Your sheet will be hidden from view.

To unhide a sheet in your spreadsheet, follow these steps:

1. From the **View** menu, scroll to **Hidden sheets**. If your spreadsheet doesn't contain any hidden sheet, this option will be greyed out.
2. Scrolling to the **Hidden sheets** menu item will expand an additional menu that displays all of your hidden sheets.
3. Alternatively, you can click the sheet menu button. Hidden sheets will be shown in grey.
4. Select the sheet that you no longer want hidden.
5. Notice that your sheet now shows with the rest of your sheet tabs at the bottom of your spreadsheet.

Note: If you, your spreadsheets viewers, or spreadsheet editors make a copy of the sheet (**File > Make a copy**) hidden sheets will be preserved, but they will be able to unhide the sheets. Additionally, data contained in hidden sheets will be accessible via Google Apps Script and the Google Data API.

Importing and exporting spreadsheets with hidden sheets

Hidden sheets will remain hidden if importing or exporting your spreadsheet from the following formats:

- Exporting the spreadsheet to .pdf, .xls, or .ods format
- Importing the spreadsheet from .xls, .xlsx, or .ods format
- Spreadsheet List view
 - If you include the page parameter (#gid=N) in List view, however, the hidden sheet will show
- Exporting the spreadsheet to html with the "/ccc?output=html" parameter
 - If you include the page parameter (#gid=N) in the URL, the hidden sheet will show
- Publishing the spreadsheet

Work with data https://support.google.com/docs/topic/1361472?hl=en&ref_topic=2811806

7) Filter your Data

https://support.google.com/docs/answer/3540681?hl=en&ref_topic=1361472

To easily see and analyze data in a spreadsheet, use filters. Filters let you hide data that you don't need to see. You'll still be able to see all your data when you turn the filter off.

Note: When you add a filter, anyone with access to your spreadsheet will see the filter too.

Anyone with permission to edit your spreadsheet will be able to change the filter.

To filter your data:

1. Open a spreadsheet in Google Sheets.
2. Select a range of cells.
3. Go to the "Data" menu and select Filter. You can also go to the toolbar and click the filter icon toolbar icon.
4. To see filtering options, click the down arrow to the right of the filter dropdown button.
 - Filter by condition: Choose from a list of conditions or write your own. For example, if the cell is empty, if data is less than a certain number, or if the text contains a certain letter or phrase.
 - Filter by value: Uncheck any data points that you want to hide and click OK. If you want to choose all data points, click Select all. You can also uncheck all data points, by clicking Clear.
 - Search: Search for data points by typing in the search box. For example, typing "P" will shorten your list to just the names that start with P.
5. To turn the filter off, go to the "Data" menu and select Turn off filter. You can also click the filter icon.

Note: Only one filter is allowed per spreadsheet so that people don't overwrite each other's data. If you want more than one filter on a sheet, use filter views. When you turn off and delete the filter, you'll see all of your data but anything you've sorted will stay sorted.

APPENDIX III: WORKING WITH FORMULAS + SCRIPTING

A. HOW TO USE CONDITIONAL FORMATTING

Oftentimes, when you're working in a spreadsheet, all cells start to look the same! Wouldn't it be helpful if you could make them look different based on their content? (For example, highlighting in red all the cells that contain the word 'no' in a specific column). Luckily, that's what conditional formatting is used for!

In order to set up conditional formatting, just follow these steps:

1. Click the 'Format' tab at the top of any spreadsheet
2. Select 'Conditional formatting...'
3. Select the appropriate statement from the first drop-down menu (depends on the condition you are trying to create). The options are as follows:
 - a. Text contains
 - b. Text does not contain
 - c. Text is exactly
 - d. Cell is empty
 - e. Date is
 - f. Date is before
 - g. Date is after
 - h. Greater than
 - i. Less than
 - j. Is equal to
 - k. Is not equal to
 - l. Is between
 - m. Is not between
 - n. Custom formula is
4. Enter the appropriate value (either text, number, or date) into the field
5. Select the format you would like to use - either changing the color of the text or the color of the cell background
6. Choose the range to which you want to apply the conditional formatting. It could either be just one cell or an entire row/column of cells
7. If you want to add another formatting condition, click '+ Add another rule'
8. Click 'Save rules' when you're done!

B. HOW TO WRITE FORMULAS/SCRIPTING

Basic formula housekeeping:

1. All formulas must begin with an equal sign
2. All formulas must have an equal number of open and closed parentheses
3. If you want to "lock" a reference cell or overall range, use a \$ sign
 - a. Example: \$A2:\$A100 (locks down column A reference)
 - b. Example: \$A\$2:\$A\$100 (locks down both column A reference and individual cell)

references)

1. BEGINNER

1. **SUM** - If you want to add up the contents of two or more cells. Note: the contents of these cells must contain numerical values rather than text.
 - a. **=SUM(A2+A3)** - adding contents of two cells together
 - b. **=SUM(A2:A)** - adding contents of multiple cells or entire column together
2. **AVERAGE** - Averaging the values of a specific range
 - a. **=AVERAGE(A1:A8)**
3. **COUNT** - If you want to count the number of items that occur in a list. Note: this is useful when you have text values in a series of cells rather than numerical values.
 - a. **=COUNT(A1:A8)** - counting the number of independent values (note: NOT calculating the sum) in a specific range
4. **COUNTIF** - If you want to count the number of X that fall into a certain category or meet certain requirements (e.g. number of females)
 - a. **=COUNTIF(A1:A8, "Female")**
5. **COUNTIFS** - If you want to count the number of X that meet two or more requirements (e.g. number of female veterans). Note that this formula requires referencing two different ranges, one for each criteria.
 - a. **=COUNTIFS(A1:A8, "Veteran", B1:B8, "Female")**
6. **TODAY ()** - Calculating the current date. Will automatically update every day.
 - a. **=TODAY()**

2. INTERMEDIATE

1. **AGE CALCULATION** - Calculating someone's age based on their DOB
 - a. **=ROUNDDOWN(DAYS360(\$X2,TODAY()),1/360,0))**
 - i. X refers to the column where the DOB is located
2. **ARRAY FORMULA (PART 1)** - An array formula can be very valuable when you want to copy the exact contents of a range of cells without actually manually copying and pasting everything.
 - a. **=ARRAYFORMULA(A1:A10)**
 - i. If you want to copy the contents of the range A1:A10 into another set of cells
 - b. **=ARRAYFORMULA(A1:A)**
 - i. If you want to copy the contents of the entire column A range - this is useful when you expect there to be more data being entered in the future and don't want to specify an exact endpoint.
3. **FILTER** - The filter function can be extremely useful when you want to pull only a select amount of data in between tabs on the SAME spreadsheet. In other words, you want to filter the data as it travels from one tab to the next. If, for example, Tab A contained names of all dogs in the puppy show but you only wanted to bring over the the names of the dogs who were Dalmatians into Tab B
 - a. **=FILTER('Tab A'!A2:A, 'Tab A'!A2:A="Dalmatian")**

- i. Tab A refers to the tab you want to pull data from
 - ii. A2:A refers to the specific range you want to reference
 - iii. "Dalmatian" refers to the criteria you want to filter for
- 4. **IMPORTRANGE** - This formula is used to import data from another completely separate spreadsheet (note: NOT just another tab in the same spreadsheet). It is a fairly complex formula and takes significant calculation power so should be used relatively sparingly and only when it is necessary.
 - a. =IMPORTRANGE("SpreadsheetURL"; "ReferenceTab!CellRange")
 - i. Spreadsheet URL refers to the entire URL of the spreadsheet that you are trying to pull data FROM
 - ii. Reference Tab refers to the name of the tab on that spreadsheet that contains the data you want to pull
 - iii. Cell Range refers to the specific range of cells on that tab that you want to pull
 - b. Example:


```
=IMPORTRANGE("https://docs.google.com/a/cmtysolutions.org/spreadsheets/d/1wtVTxj0ir3O1HdjGjFmVNGNRztD0eXVNUcUAZef31Rg/edit#gid=0"; "Form Responses!A2:D100")
```
- 5. **IF STATEMENTS** - Understanding the logic behind If Statement formulas might be the most important one in your arsenal! We use them all the time in order to calculate eligibility for housing resources. However, there is no one single example of an If Statement so it's easier to try to understand the basic logic underpinning them instead. That way, you'll be armed with the knowledge to create them for any situation! Here are a few core tips:
 - a. The basic structure looks like this: If **A**, then **B**. Otherwise, **C**. You'll be filling in the 'A', 'B', and 'C' portions of the argument.
 - b. Every If Statement takes into account both sides of an argument - if it does exist, then **this**. But if it doesn't, then **that**.
 - c. You can create an If statement with just one argument, like the example above. If A, then B. Otherwise, C. However, you can also create an If Statement with multiple arguments - these are called Nested If Statements.
 - d. Nested If Statements take into account both sides of multiple arguments - if **A** exists, then **B**. If **C** exists, then **D**. If **E** exists, then **F**. Otherwise, **G**.
 - e. If you want to start narrowing down a list (e.g. to determine eligibility), you'll need to use Nested If Statements that begin to exclude people if they don't meet certain criteria. If they pass all the test statements, then they are eligible.

Examples:

- 1. Let's say we want to give one point to a person if they were born in the month of May. If not, they will get 0 points.
 - a. =IF(\$A2="May", 1, 0)

2. Let's say we only want to give a point to someone if they were born in the month of May and are female. This is a nested If Statement and will require us to exclude anyone who does not meet those criteria in order to narrow down the list.
 - a. `=IF($A2<>"May", 0, IF($B2="Male", 0, 1))`
 - b. In the formula above, each component translates to this:
 - i. `$A2<>"May", 0` → If A2 does NOT equal May, give it a zero
 - ii. `$B2="Male", 0` → If B2 equals male, give it a zero
 - iii. `1` → Otherwise, if neither of those are true, give it a 1
 - iv. This way we end up only giving ones to females born in May!

C. HOW TO COPY FORMULAS

Knowing how to copy formulas might be one of the the most useful tools to have in your back pocket. It especially comes in handy when you need to replace a deleted formula! Thankfully, as long as you know the general basics of how to copy and paste, you'll pick this up in no time.

1. Make sure to open up the tab or spreadsheet that contains the formula you'd like to copy. Also keep open the tab or spreadsheet that contains the cell(s) you'd like to paste into.
2. Go into the spreadsheet with the formula you want to copy and find the relevant formula you need to use. In the case of most of these spreadsheet, the majority of formulas will be located in Row 2.
3. Click the cell with the relevant formula and select Control+C (Command+C if you're on a Mac) or go to the Edit tab and select 'Copy'. Multiple ways to skin a cat!
4. Navigate to the tab/spreadsheet where you'd like to paste the copied formula and find the appropriate cell
5. Use Control+V (Command+V on a Mac) or go to the Edit tab and select 'Paste' to paste down the copied formula into your new cell

You're done! Easy as pie. In some cases, you may not want to paste the formula exactly as it was written in the original cell, instead preferring to alter it slightly. The only reason you might choose to not just copy/paste and alter afterwards is if the formula is bringing over LARGE amounts of data that would take up significant calculation bandwidth. In this case, you may want to alter the formula BEFORE pasting into the new cell. Follow these easy steps to learn how to do that:

1. Go into the spreadsheet with the formula you want to copy and find the relevant formula you need to use. In the case of most of these spreadsheet, the majority of formulas will be located in Row 2.
2. Find the cell with the relevant formula and double click it so your cursor is actually sitting with the formula itself
3. Highlight the entire formula EXCLUDING the equal sign
4. Select Control+C (Command+C on a Mac) to copy the part that you have highlighted
5. Navigate to the tab/spreadsheet where you'd like to paste the copied formula and find the appropriate cell
6. Use Control+V (Command+V on a Mac) to paste down the highlighted portion of that

formula

You'll notice that the formula looks more like a string of long text than a real formula. This is what happens when you remove the equal sign! The spreadsheet no longer recognizes it as a real formula and proceeds to just treat it as plain text. In this format, you're free to play around and alter the formula to meet your new requirements before it brings over any data. When you're ready, just make sure to add the equal sign back in.

Many people may not like working with a formula that doesn't have an equal sign because the color coding disappears and it's harder to differentiate among the various formula components. So it's up to you to decide whatever works best!