How to use Devergy's Survey Toolkit

The EnAccess Foundation

The context

Devergy deploys mini-grids in rural Tanzania. The company relies on lots of survey data from the field, and needed a way to collect and store survey data (with GPS coordinates), as well as other types of customer and market information.

Most startup energy access companies and organizations have the exact same need: gathering data in multiple formats - in an **easy, reliable,** and **scalable** way - and often in areas without network connectivity.

This guide will walk you through a survey toolkit that Devergy created to manage survey data at their company. This guide should be seen as a starting point - once you learn the tools, you'll be able to create and customize surveys that are relevant to your specific business.

The guide walks you through the survey toolkit in the way that Devergy uses it in real-life: creating a survey template, entering data, managing data, and displaying results on a map. There are also instructional videos available on the EnAccess project page.

We think this toolkit is perfect for startups or organizations that are just getting started in remote communities, or other areas where there is minimal market information available.

Also, this toolkit is can be used by any type of organization - not just mini-grid companies!

What you'll find in this guide

The Survey Toolkit combines existing applications: EpiCollect 5, Google Sheets, and Google My Maps. In this guide, you will learn...

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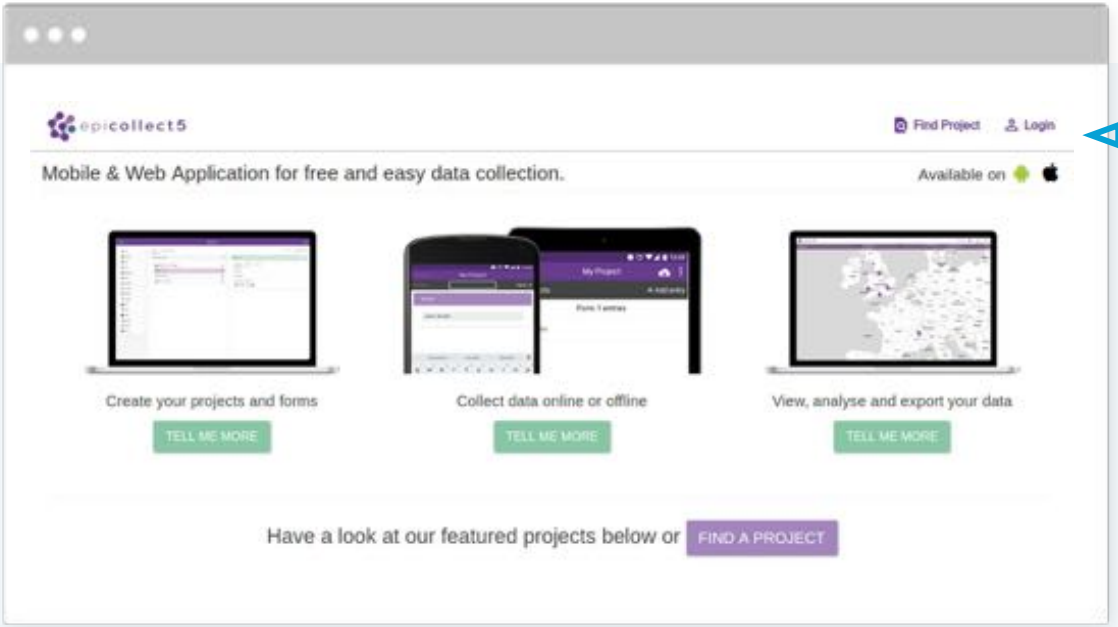
1. How to **create a survey form** with EpiCollect 5
2. How to **collect survey data** with a mobile device
3. How to **integrate survey data** for use with Google Sheets
4. How to **visualize** data and results on a map with Google My Maps

Part One

How to **create a survey form** with EpiCollect 5

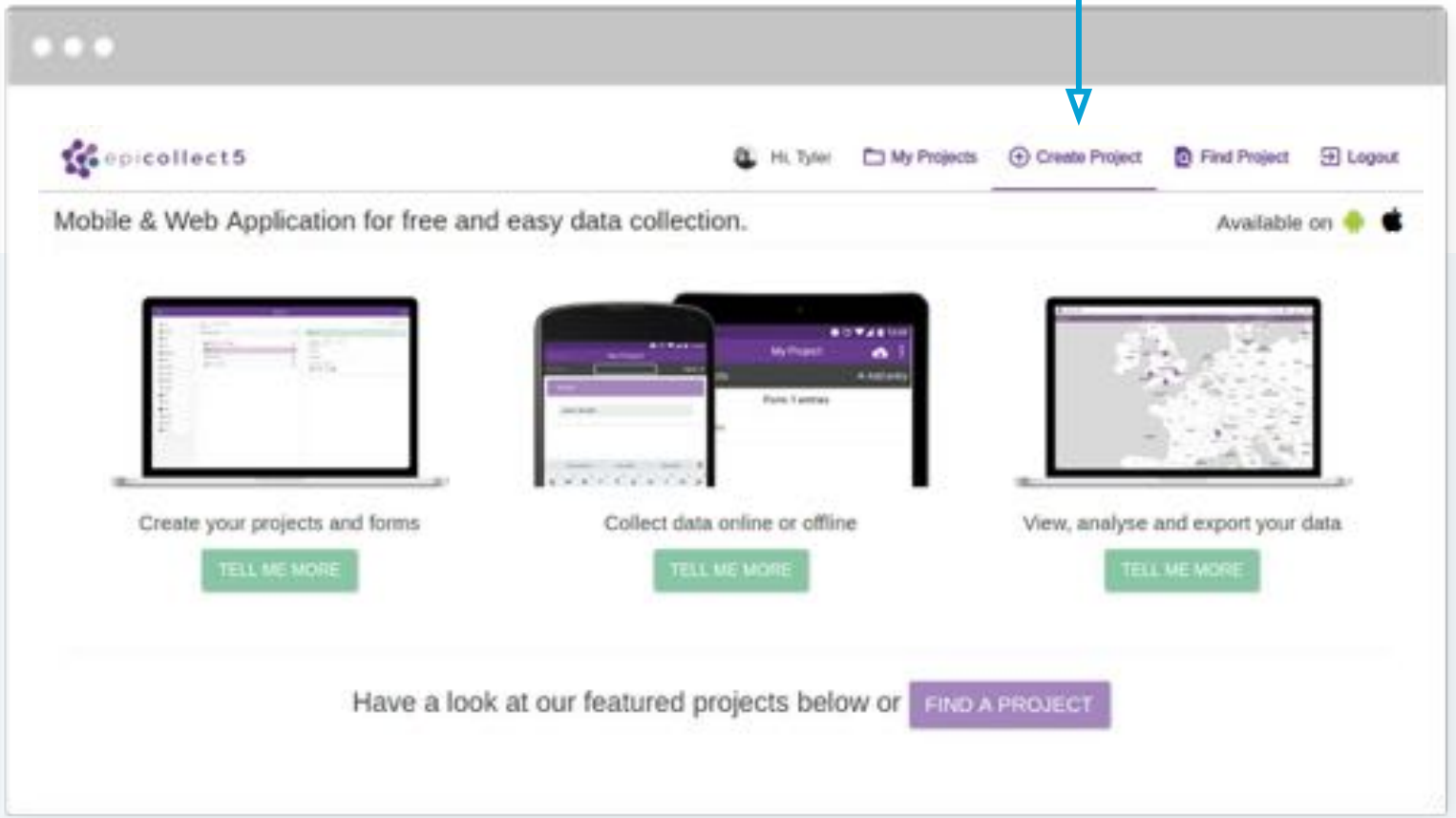
Part One

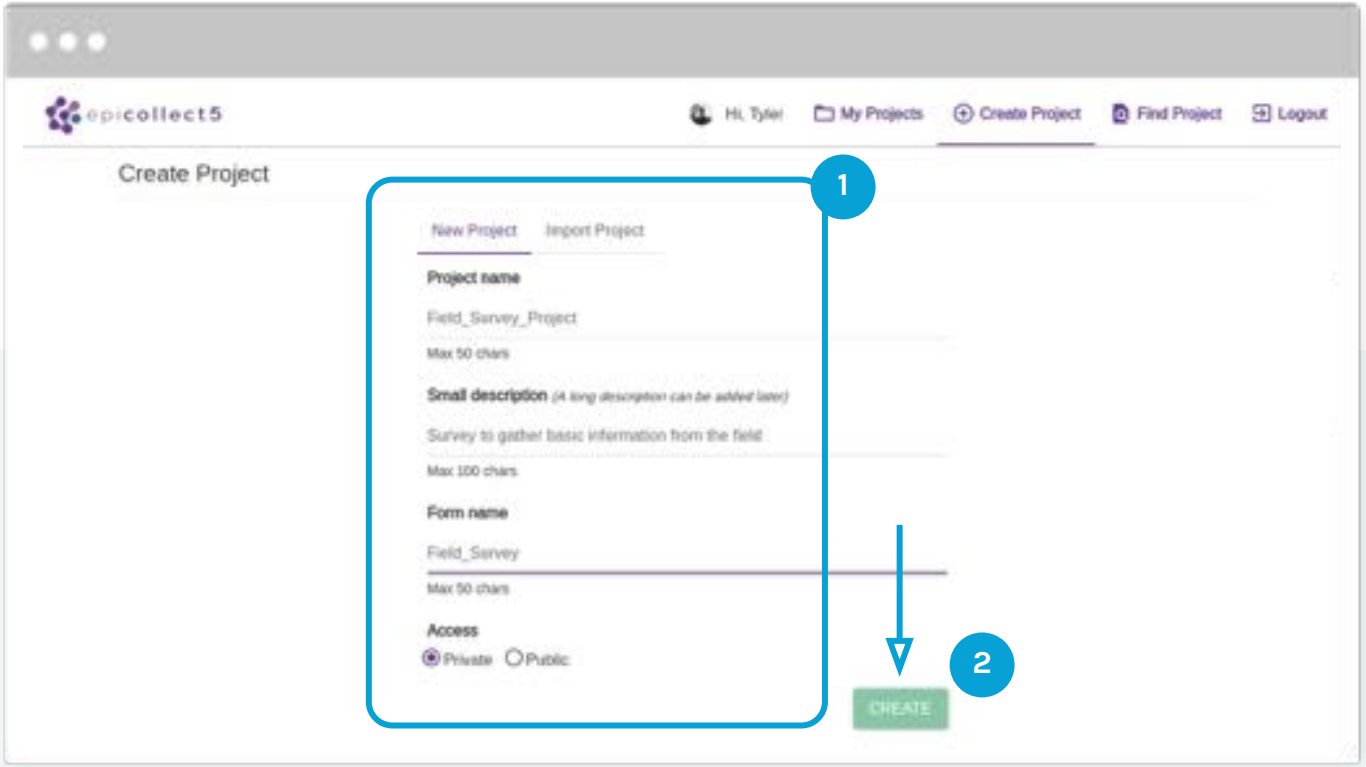
How to create a survey form with EpiCollect 5



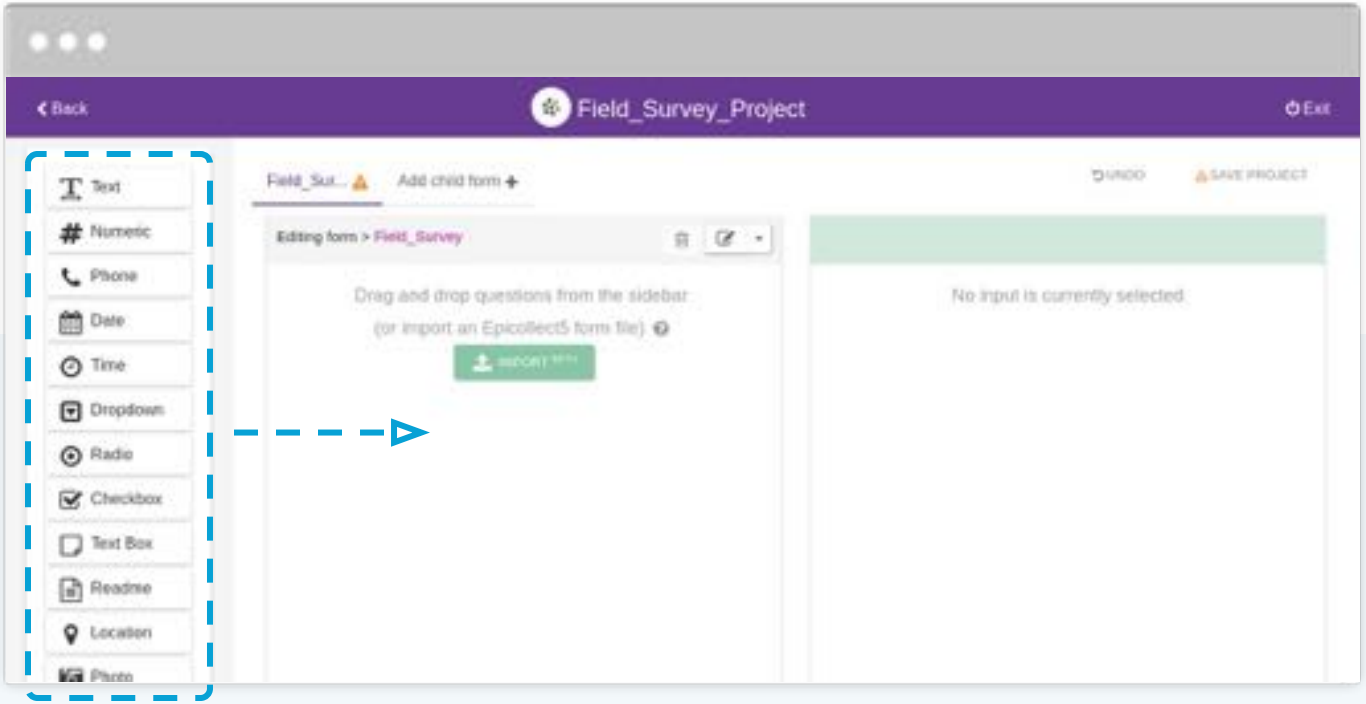
Go to https://five.epicollect.net/
Login to go to the homescreen

Click **Create Project**

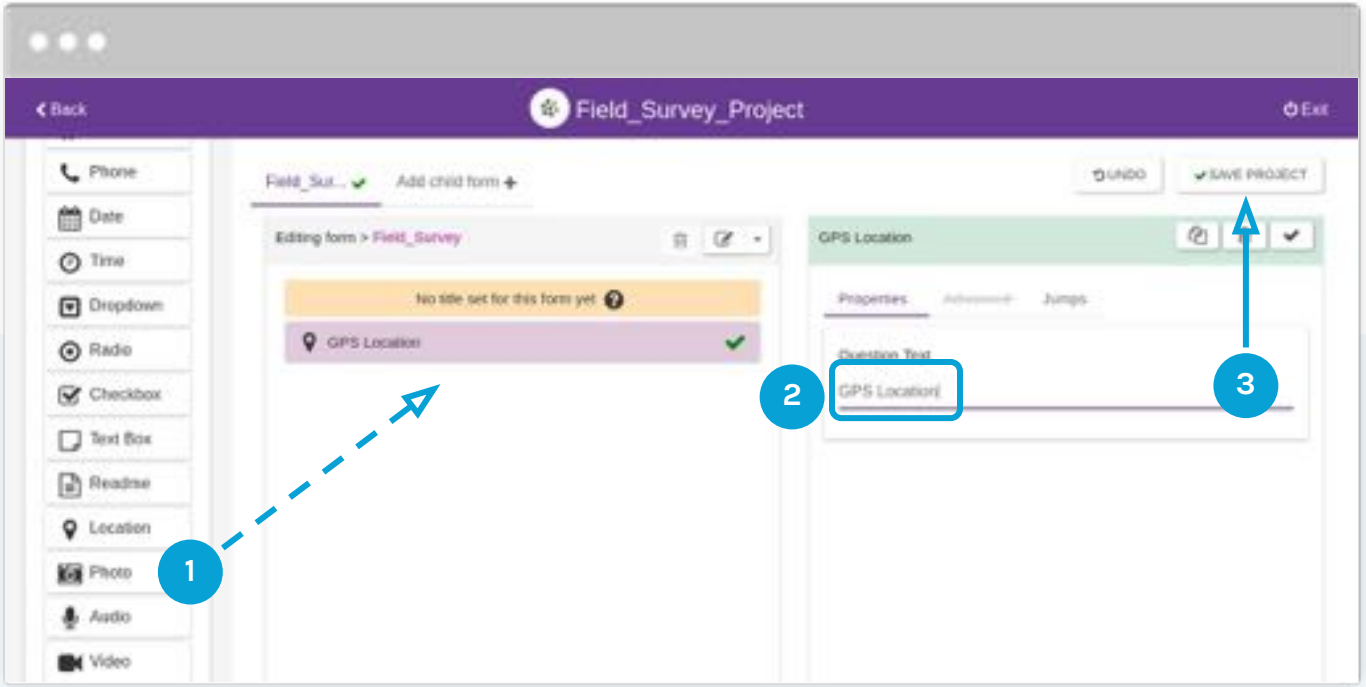




1. Name the project, add a small description, and name the form (note: the project name must be unique). Devergy recommends keeping access private.
2. Click **Create.**

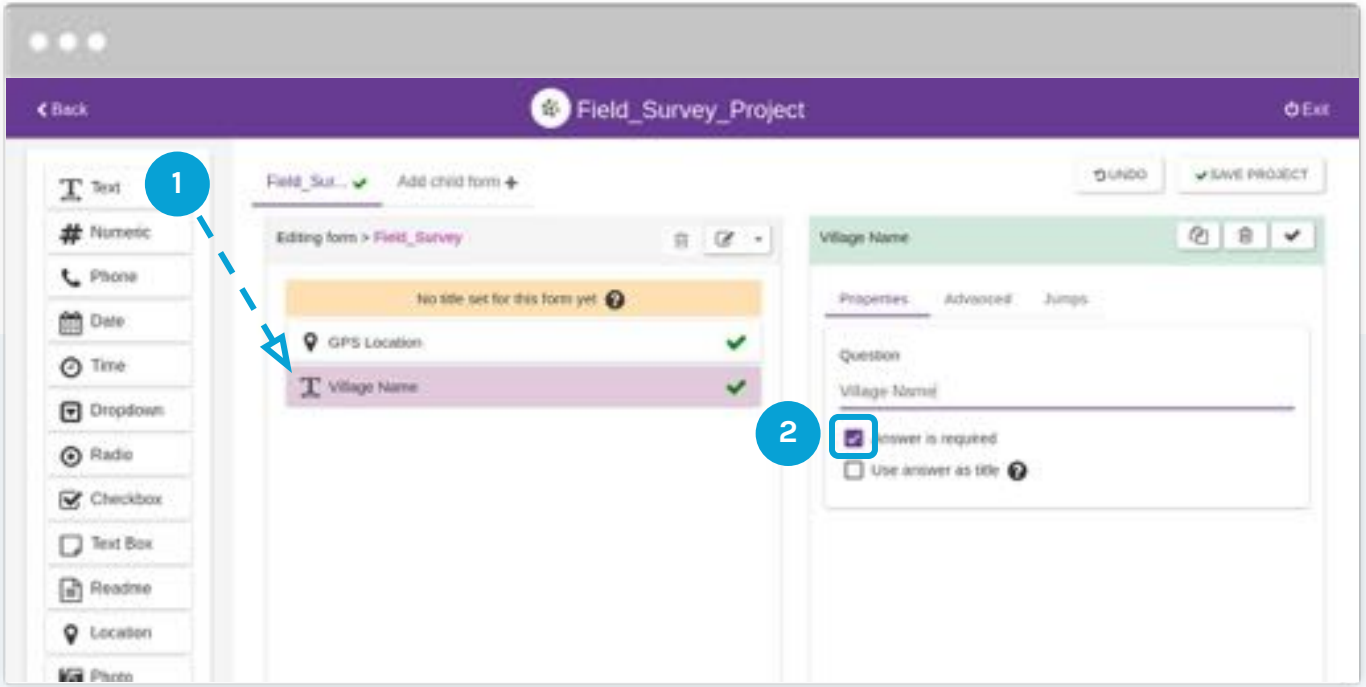


You will be prompted to open the form builder. After opening it, you can drag different types of entries/questions directly to the survey form. You can also get to the form builder from the left-side menu on the project homepage.

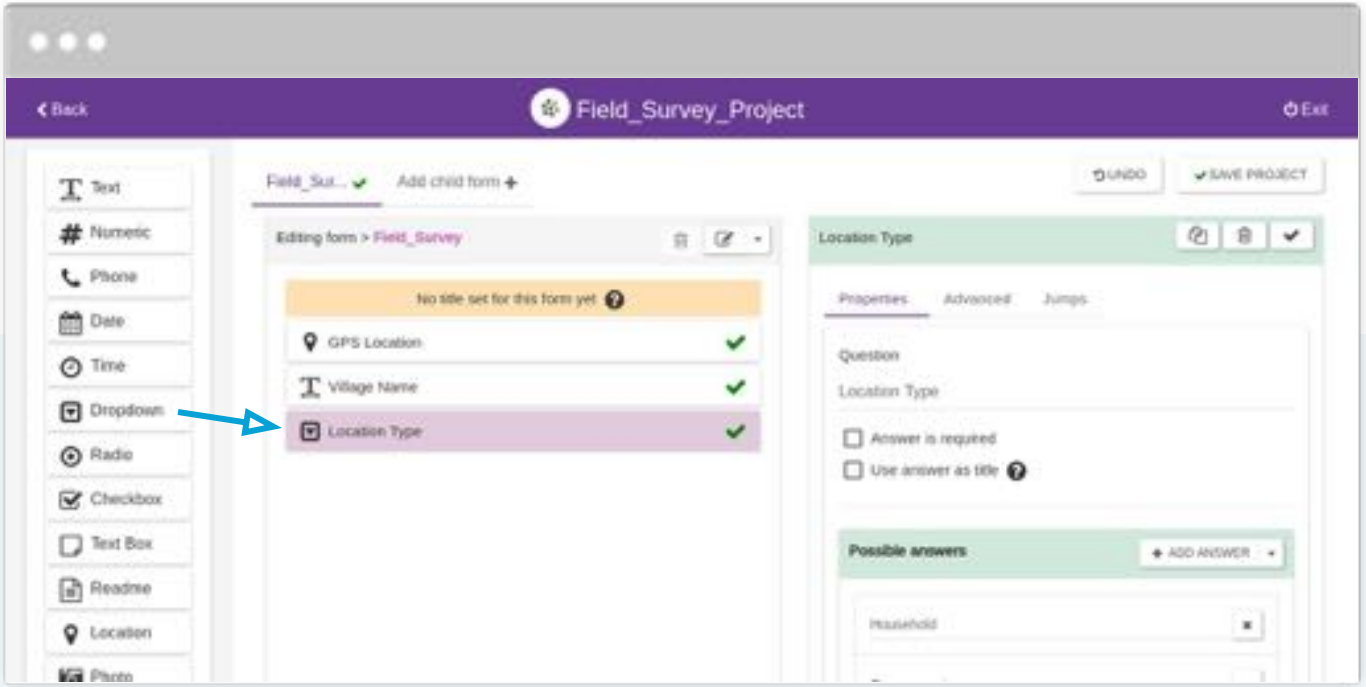


When creating a survey, we will first add the GPS coordinates as a question. 1) Drag the **Location** question type to the form; 2) Name it **GPS Location** (note: each question needs to be named); 3) Save the project.

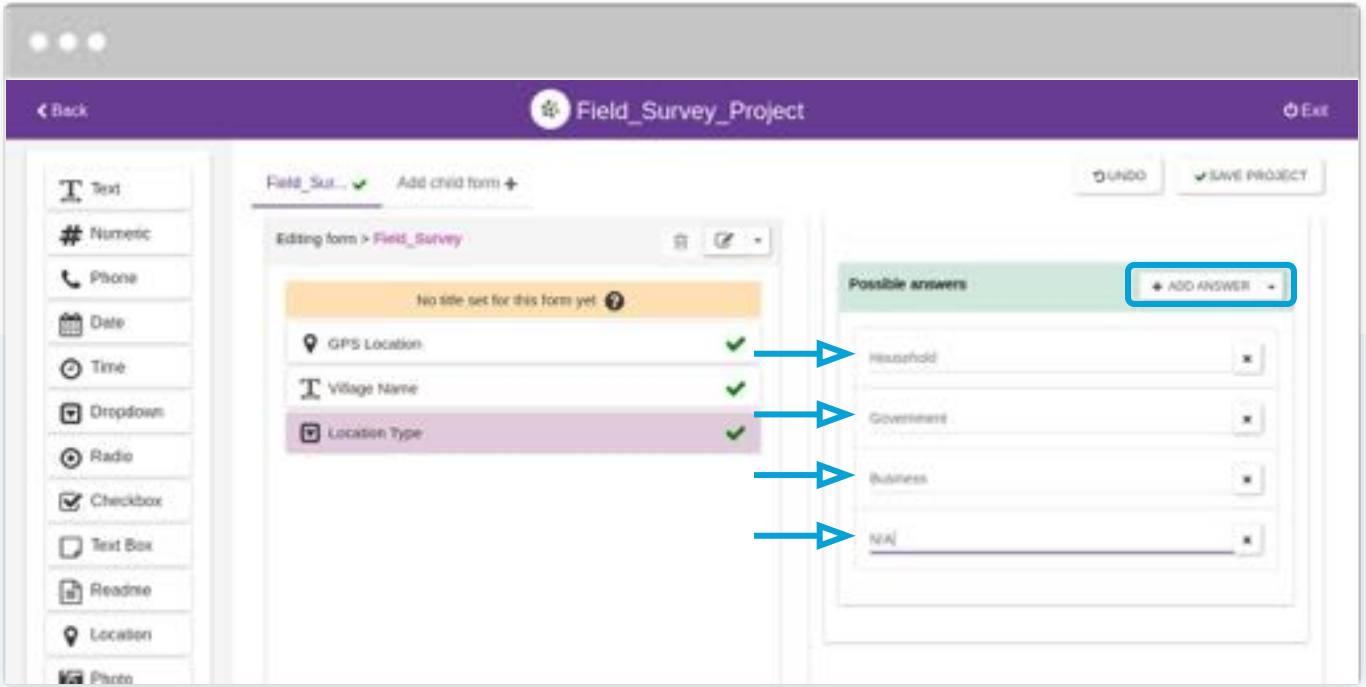
Don’t forget to save the project as you add questions to your survey template; updates are not automatically saved.



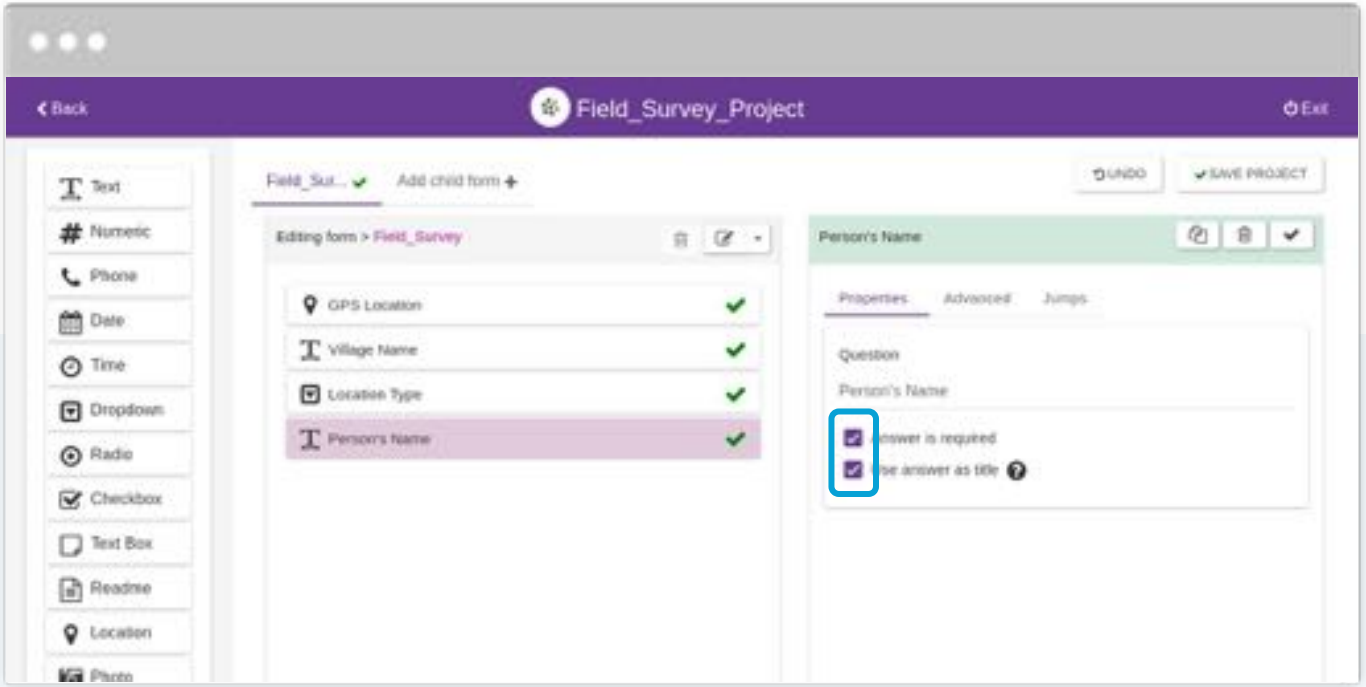
Next, we will add an entry for Village Name by dragging a **Text** question type to the survey form. We have marked this question as **Answer is required**. This means that the survey data cannot be uploaded unless this question has been answered.



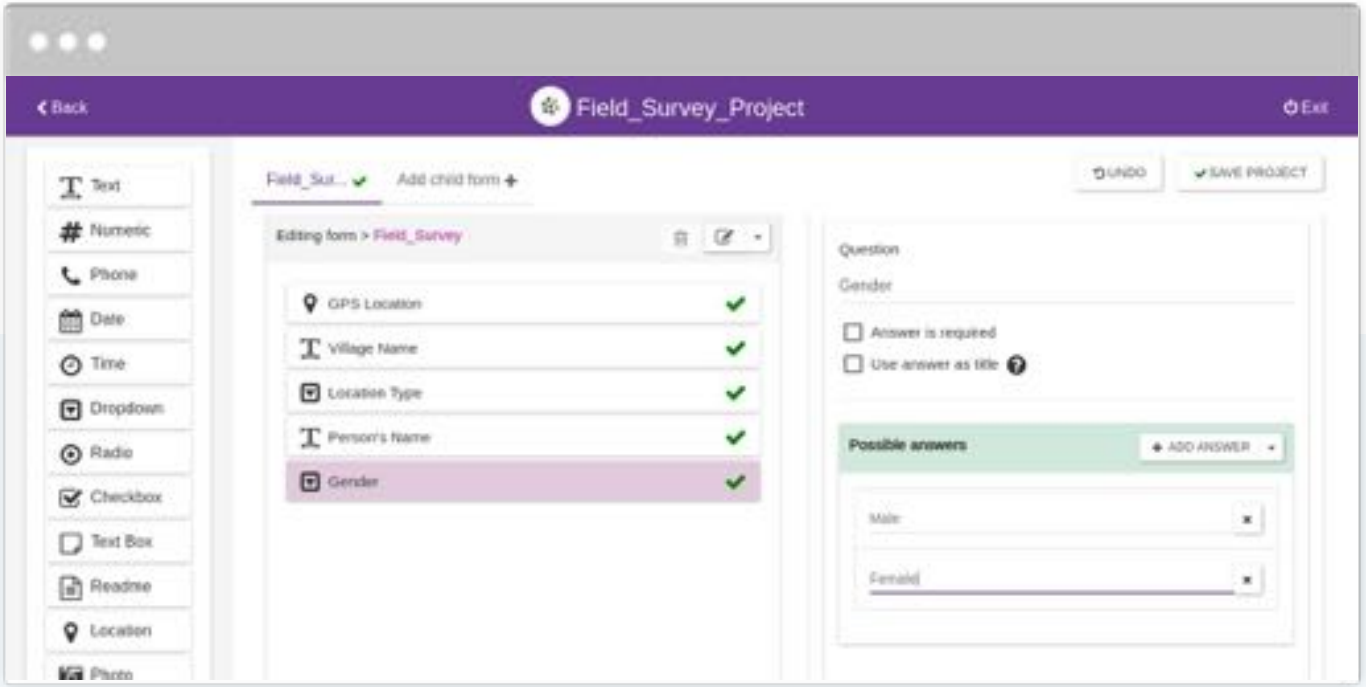
Next, we'll add **Location Type** as a **Dropdown** question type...



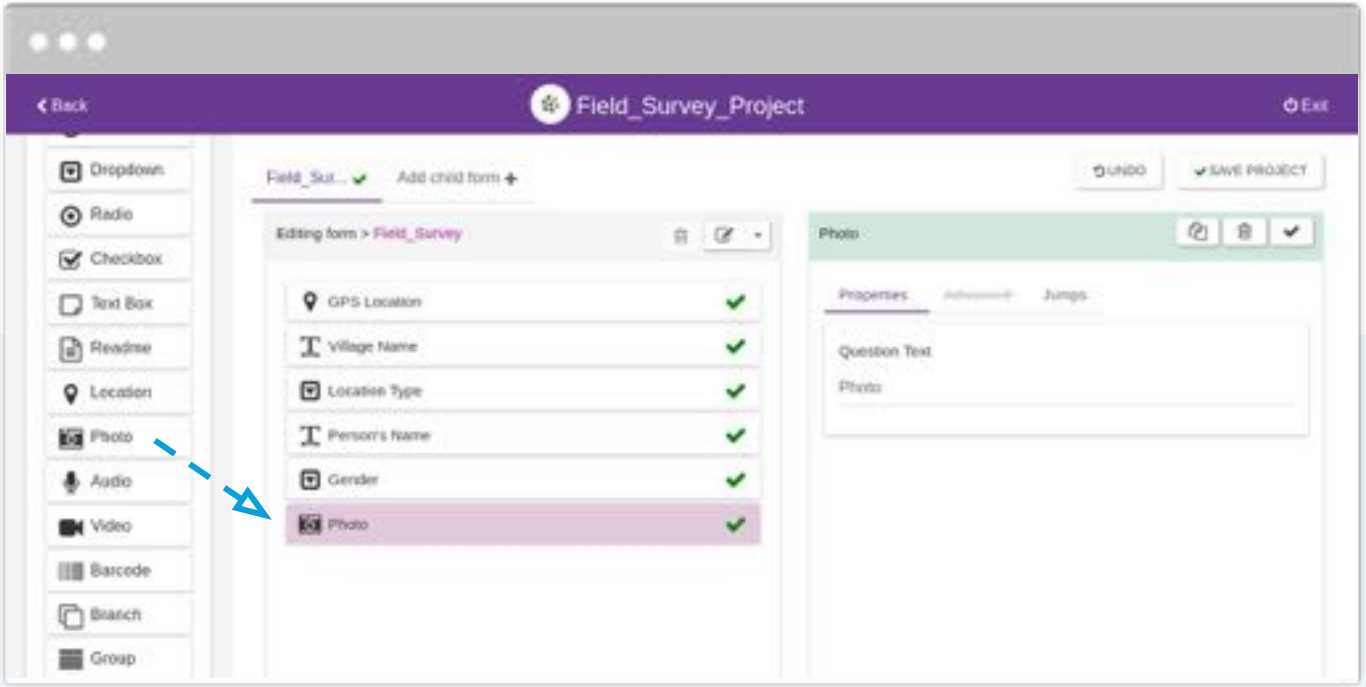
...and add different location types (blue arrows on the right hand of the screenshot) as the various options that appear in the **Dropdown** menu. Click **Add Answer** to add options that will appear in the dropdown menu of the final survey.



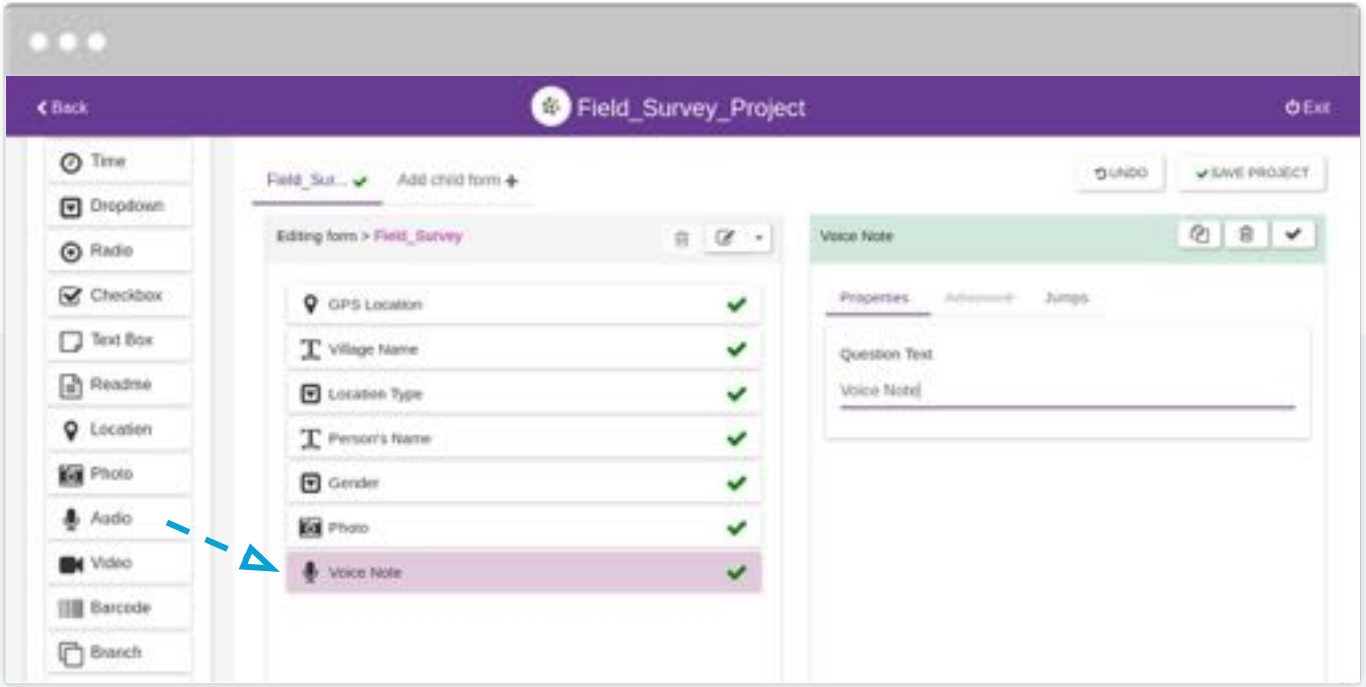
Next we'll add another **Text** question type for Person's name. At Devergy, the "person" is typically a potential future customer; but this can also be someone else in the community that you are collecting feedback from. For this question, we'll mark **Use answer as title**. This means that each survey entry will be labeled by the name of the interviewee.



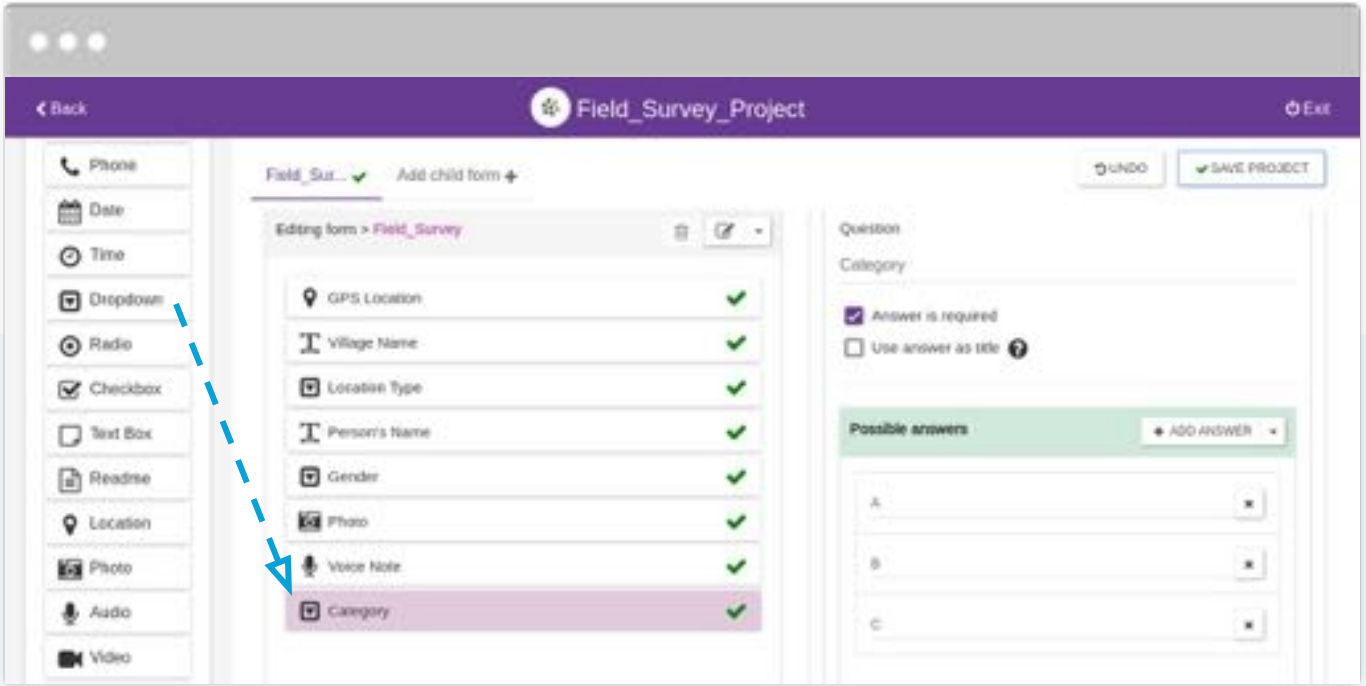
We will add another **Dropdown** for gender.



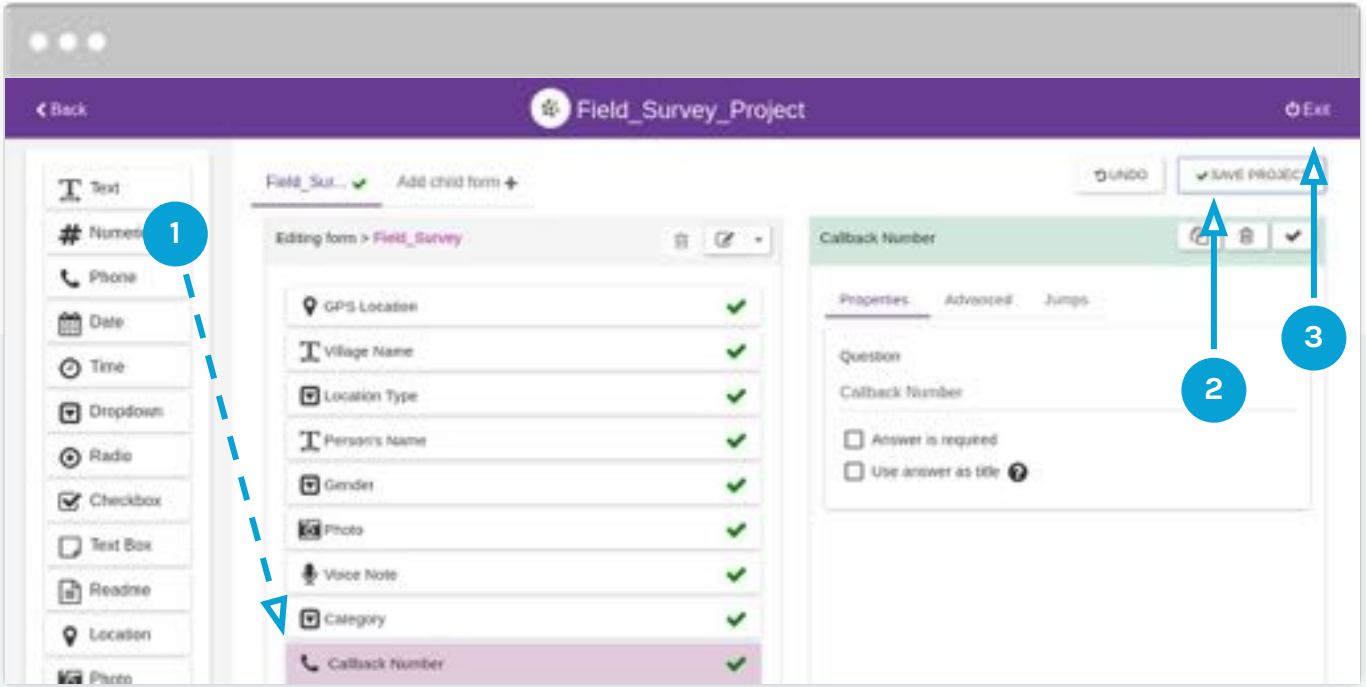
Here we'll add a **Photo** entry type. The agent will be able to either take a photo directly, to add as a piece of data to the survey, or add a photo from his or her phone.



Next, we'll add an **Audio** type entry. This can be used to collect a voice memo and attach it to the survey.

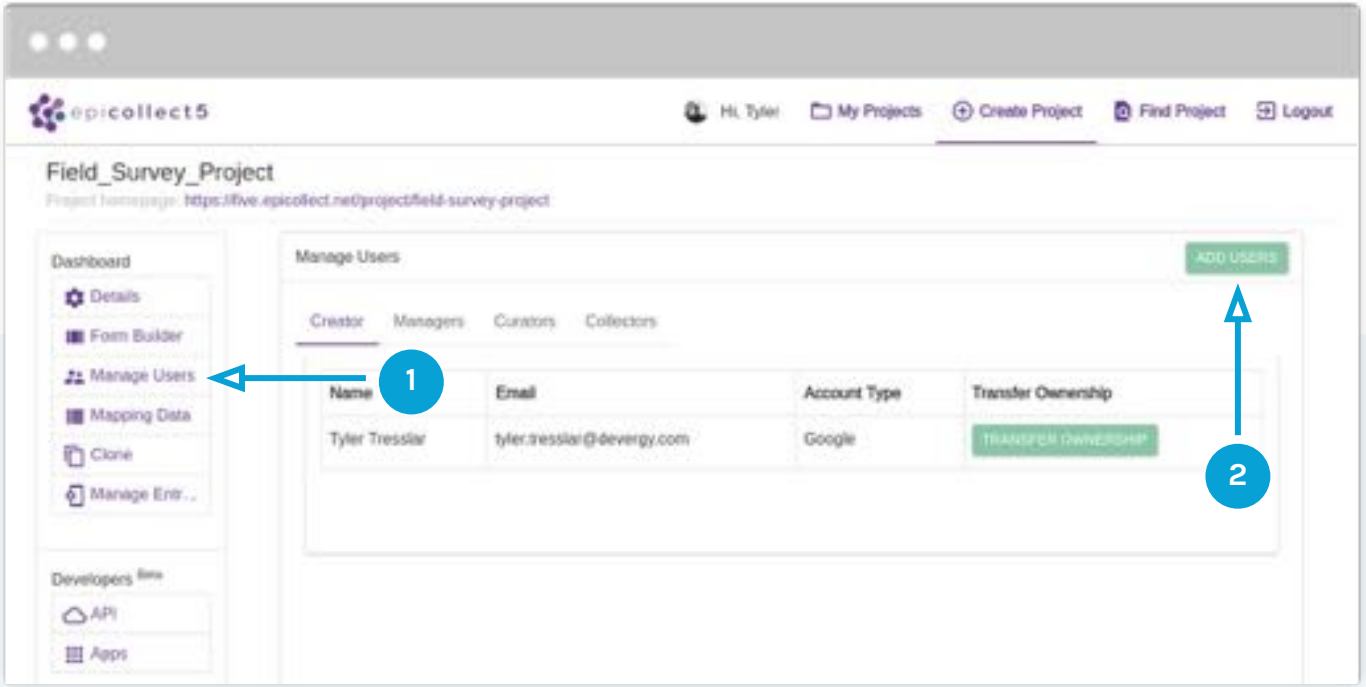


Here we'll add another **Dropdown** entry called **Category** with options A, B, and C. This field can be customized fit the purpose of various types of surveys. For example, in a sales leads qualification survey, a company might label the categories as "Hot", "Warm", and "Cold" to note how likely a sales prospect is.



Finally, we will add a **Phone** question type for a Callback Number, and then **Save the Project**. Remember to save the project, then click **Exit**.

Keep in mind: we're walking through a process that Devergy uses. There are plenty of ways to customize and build surveys. Our goal is to demonstrate the features of EpiCollect, and the process of how a survey form is created.

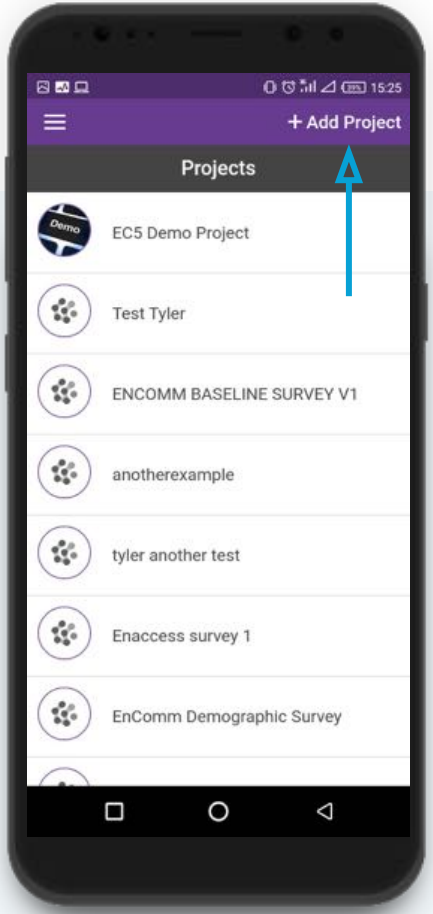


Once your survey form is completed, you can make it available for staff that will be collecting data. Anyone using the form to collect data needs to be added as a user. To add users, click on **Manage Users** from the project homepage, then click **Add Users**. More information about users can be found here. Once users are added, you can start collecting data!

Part Two

How to collect survey data with a mobile device

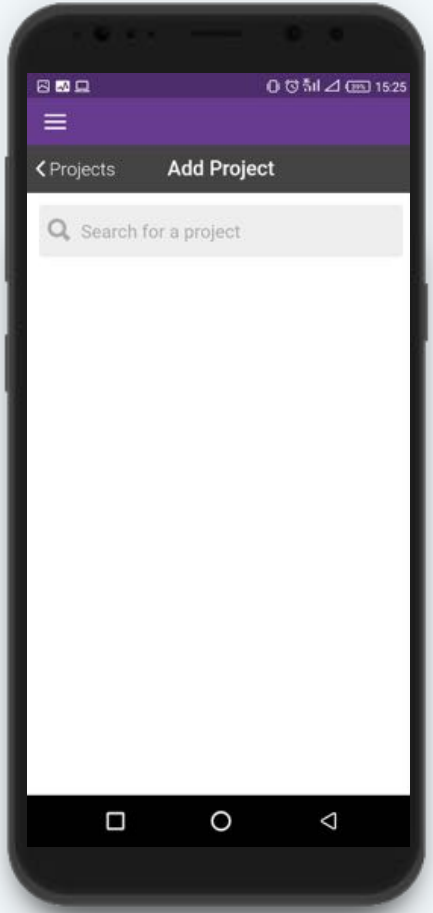
- Preparing each device
- Data collection



Before we get started, each device will need to have the EpiCollect 5 app installed. After opening EpiCollect 5, the user will be brought to the Projects page.

Tapping **Add Project** will allow the user to search for a project (e.g. the survey form or template that we created in Part 1) within EpiCollect 5.

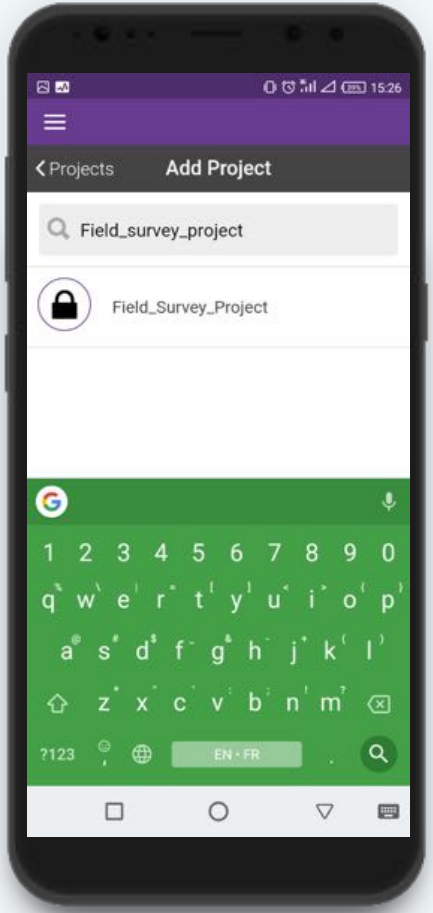
This must be done while connected to the internet.

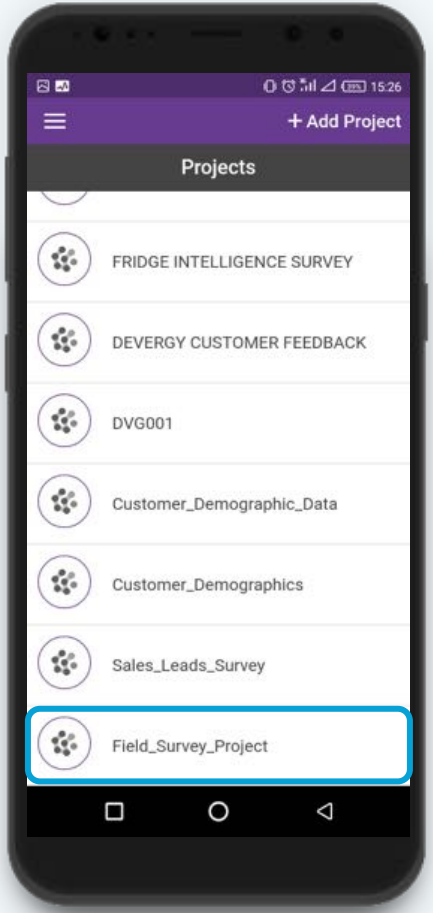


Type the name of the project (or survey template) you are looking for into the search bar. Remember, our project was called **Field_Survey_Project**. You may be asked to login.

Tap on the project name to add it to the Projects screen. New projects are added at the bottom of the list.

The survey form that was created is now on the phone, and the phone is ready to be used during data collection.



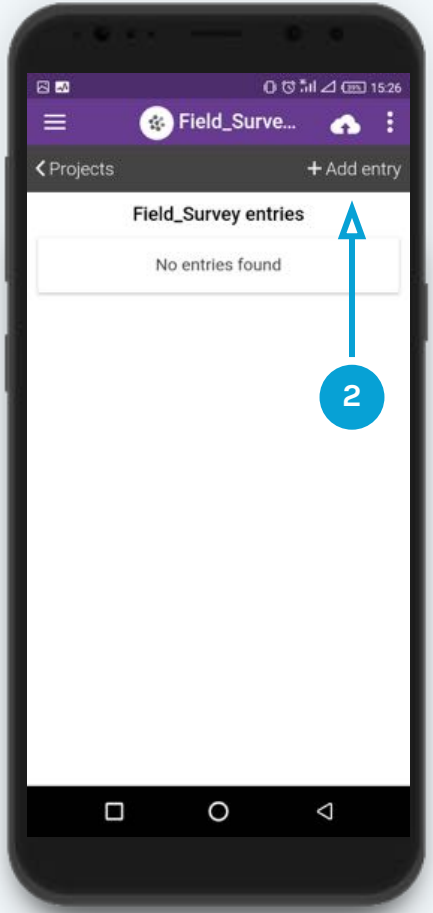


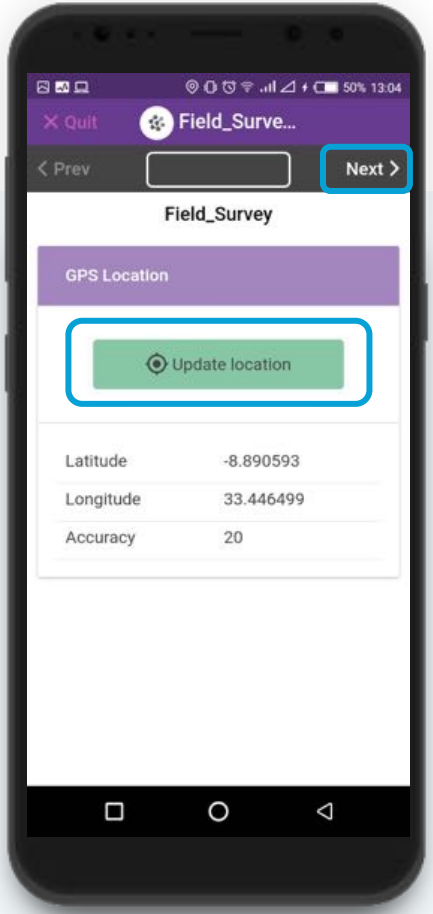
Now that we're out in the field, we are no longer relying on having a steady data connection.

First, tap the name of the survey form you want to use.

Second, to start a survey using that form, click on **Add entry**. Each new survey that you collect is a new entry to the project.

Note: You may need to give EpiCollect 5 permission to access the device's location.

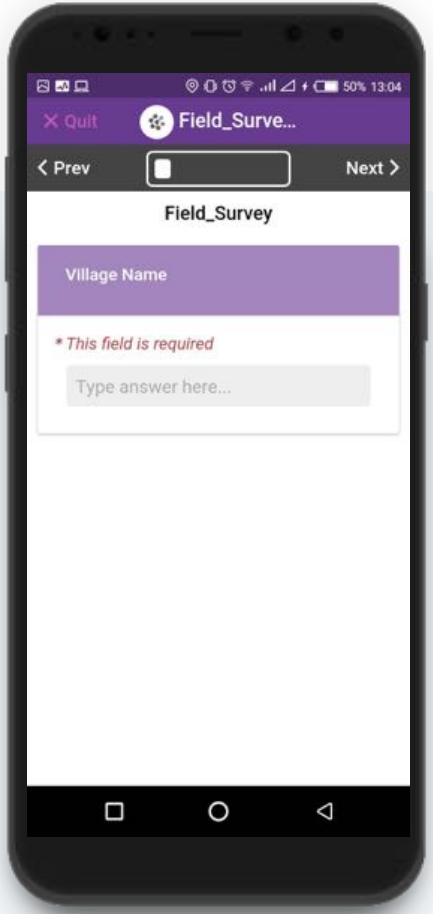




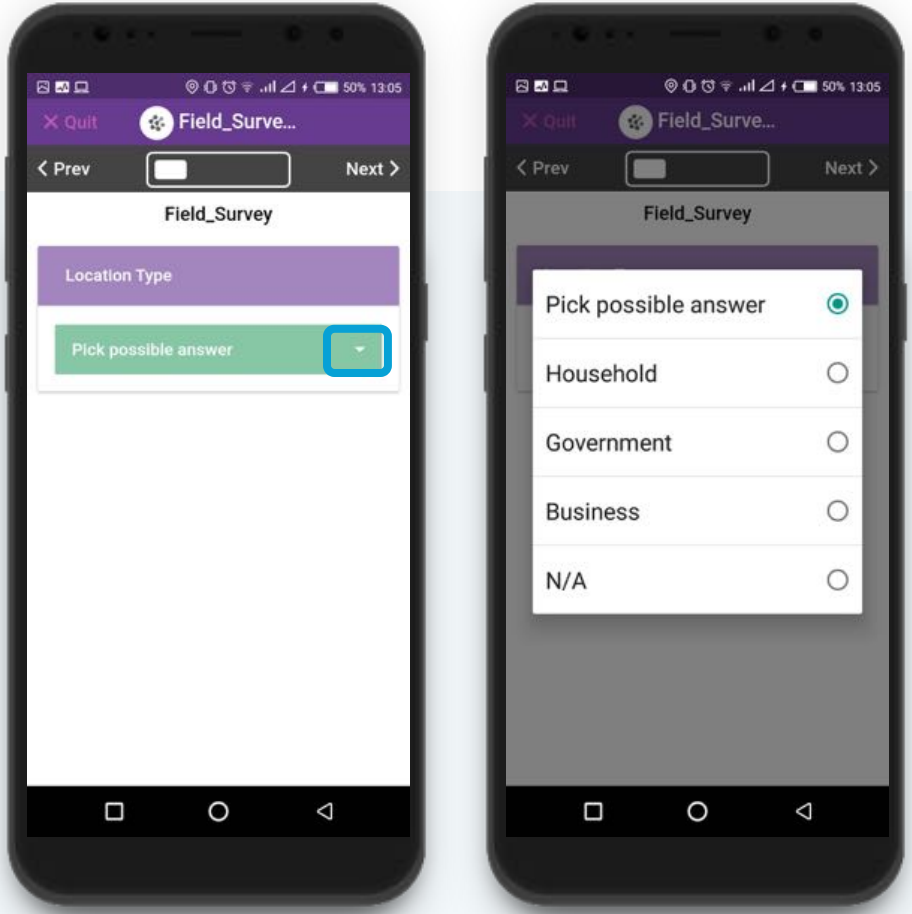
This is how a Location type entry appears in the mobile app. If you tap the **Update Location** button, the coordinates are saved. The accuracy can be improved by moving away from obstructions such as trees, tall structures, and by moving outdoors. Make sure you are standing next to the location you want to record, then tap **Update Location**.

At this point, you can turn off your device's location feature to conserve battery.

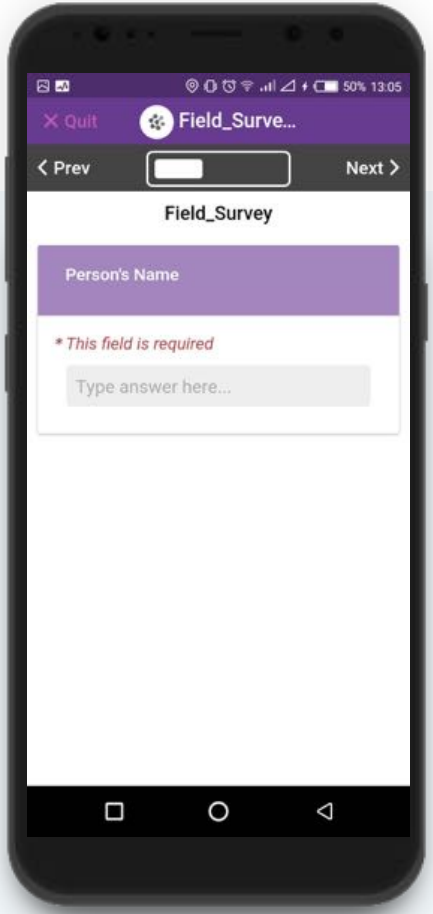
Tap **Next** to move to the next question.



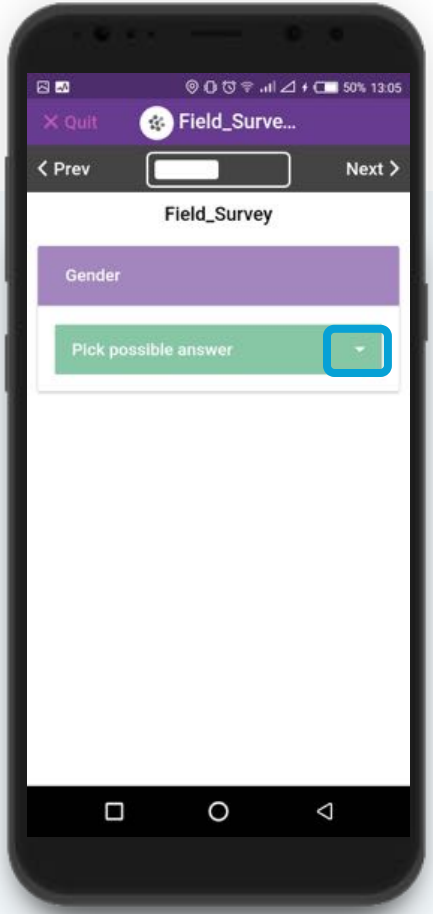
This is how the **Text** entry appears in the mobile app. Click on the **Type answer here...** field and enter the Village Name, then tap **Next**.

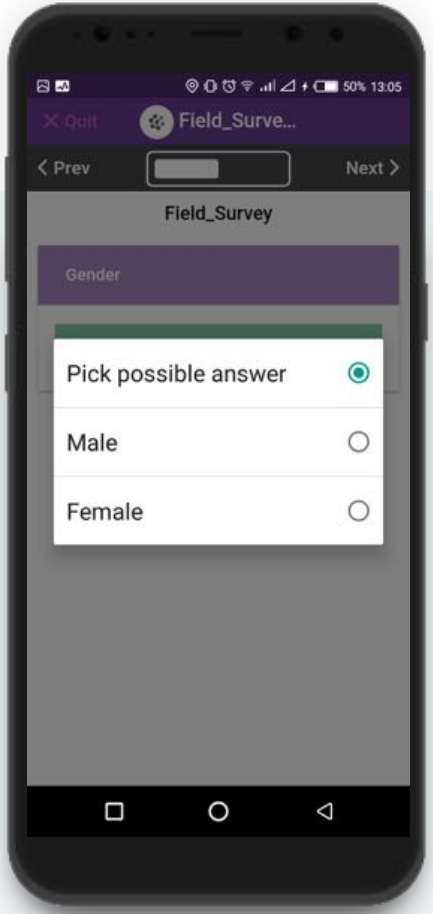


This is how the **Dropdown** entry appears in the mobile app. Tap **Pick possible answer** and choose the appropriate option.

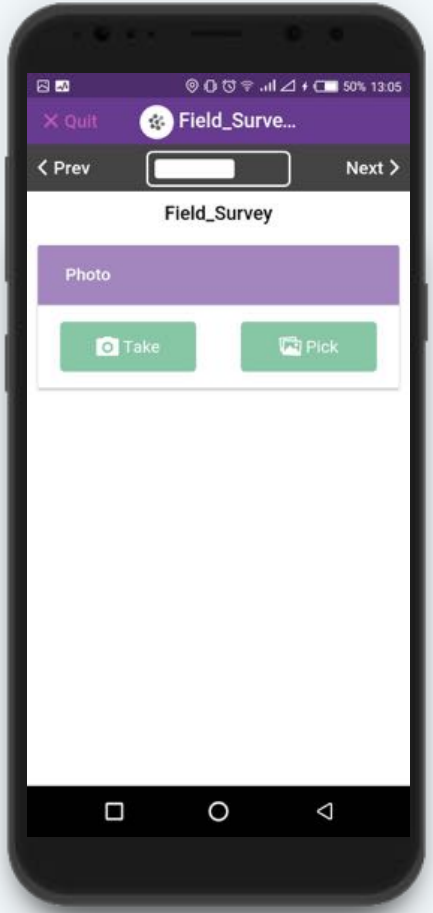


This is a **Text** entry again, and where you can add the interviewee's (in Devergy's case, the name of a potential future customer) name.





This is where we note the interviewee's gender.

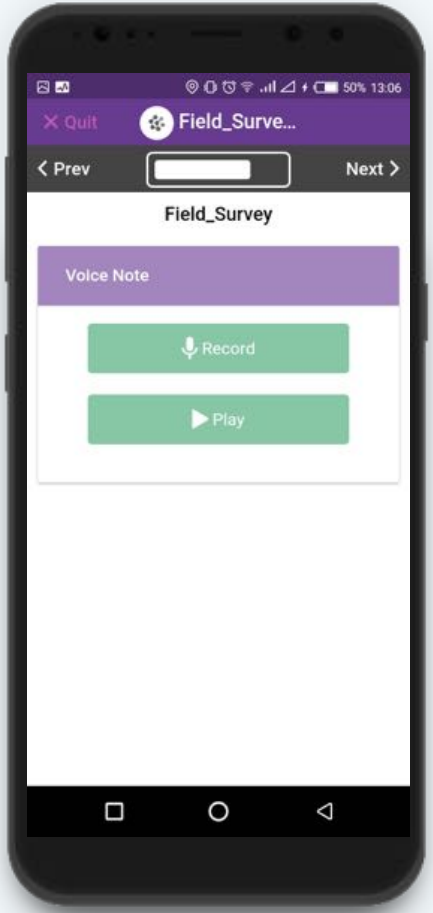


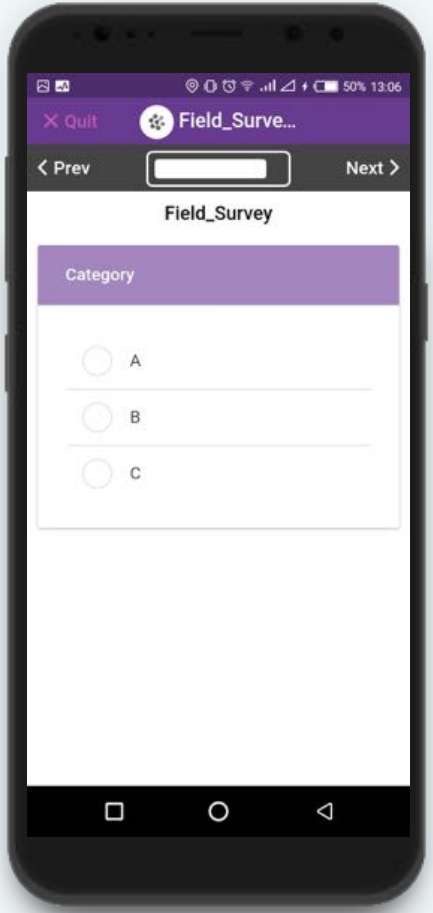
Here (left) we can add a photo. In Devergy's case, agents collect photos of the person being interviewed, the exterior of their house, or other subjects.

Note: Photos can be sensitive. Make sure your interviewee is comfortable with any photos you are taking.

Then tap **Next**.

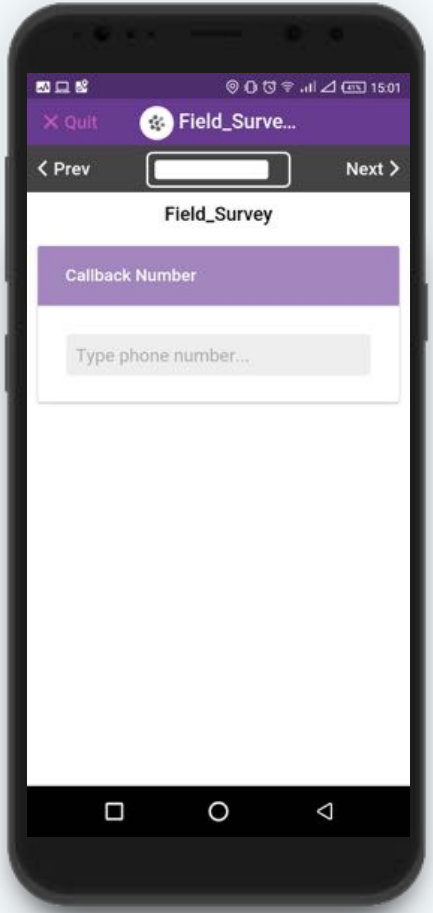
Here (right) we can add a voice note. Surveys often spark ideas, suggestions for improvements, or other insights that agents may want to relay to HQ.

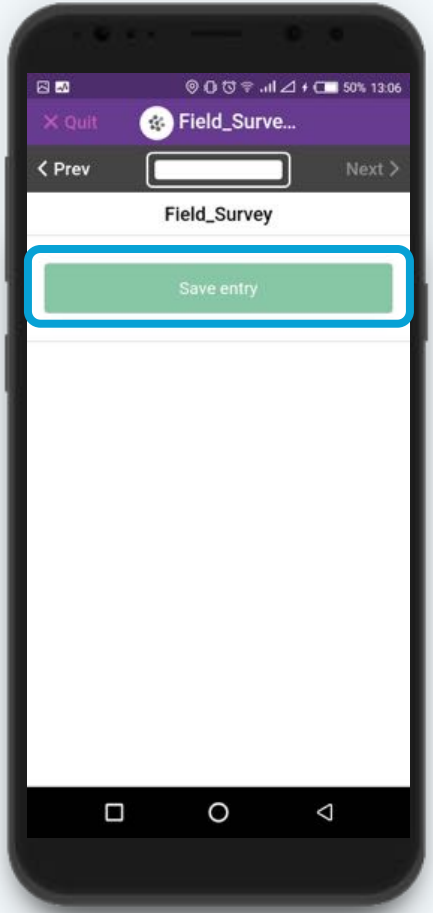




Here (left) is the **Category** entry. Tap the appropriate response (i.e. “A”, “B”, or “C”), then tap **Next**.

Before Devergy finishes a survey, their team normally requests a callback number (right) for each interviewee. In some instances, you may want to record more than one number, or an accompanying note (e.g. whose phone it is).

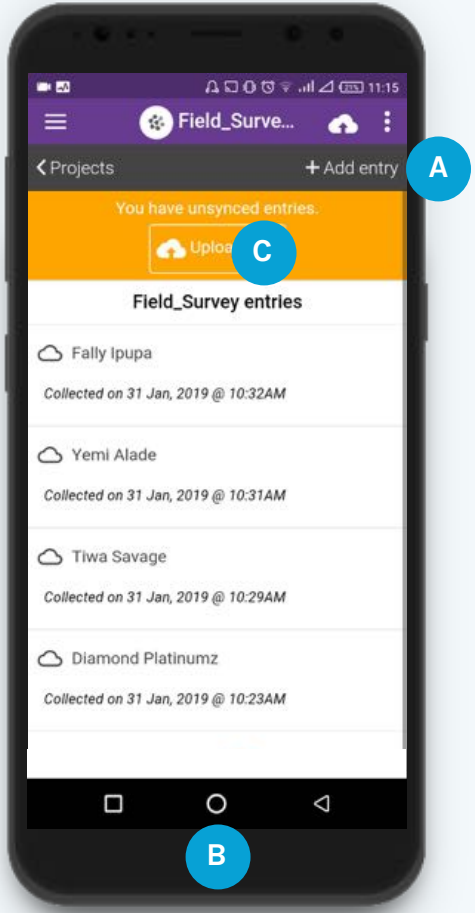


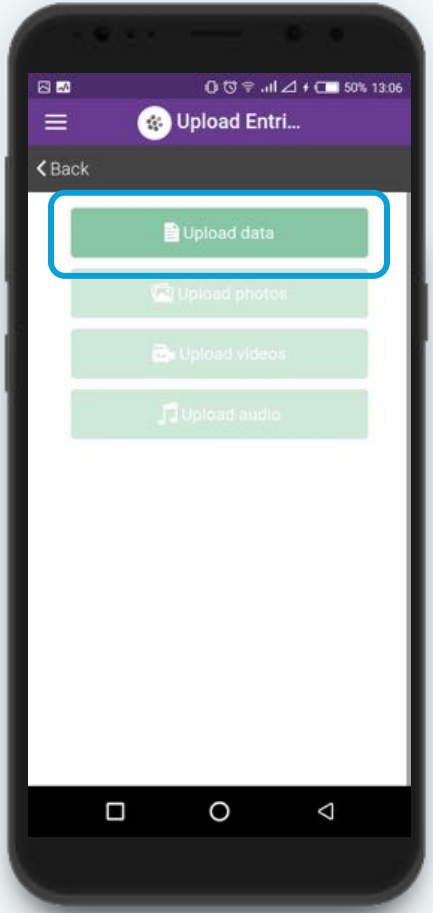


Tap **Save entry**. The survey entry has been recorded on the device, so even without an internet connection, everything is safe.

You can now: A) continue collecting additional data from new interviewees; B) close the app, or; C) upload surveys to the server*.

*Uploading surveys to the server requires a solid data or wifi connection. This is typically done back in the office.

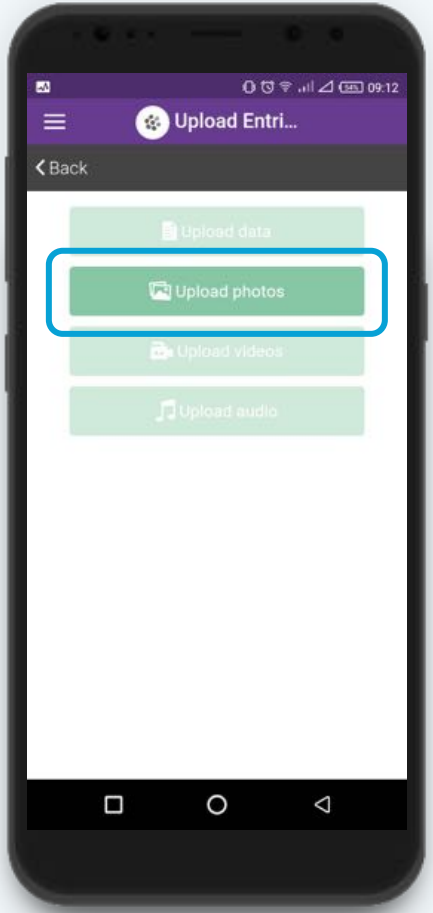




After a user has chosen to **Upload data**, they will be brought to this screen (left).

First, you'll upload the actual survey data. Media files - photos, videos, and audio - are uploaded separately (right). This offers flexibility in case there is a limited data connection.

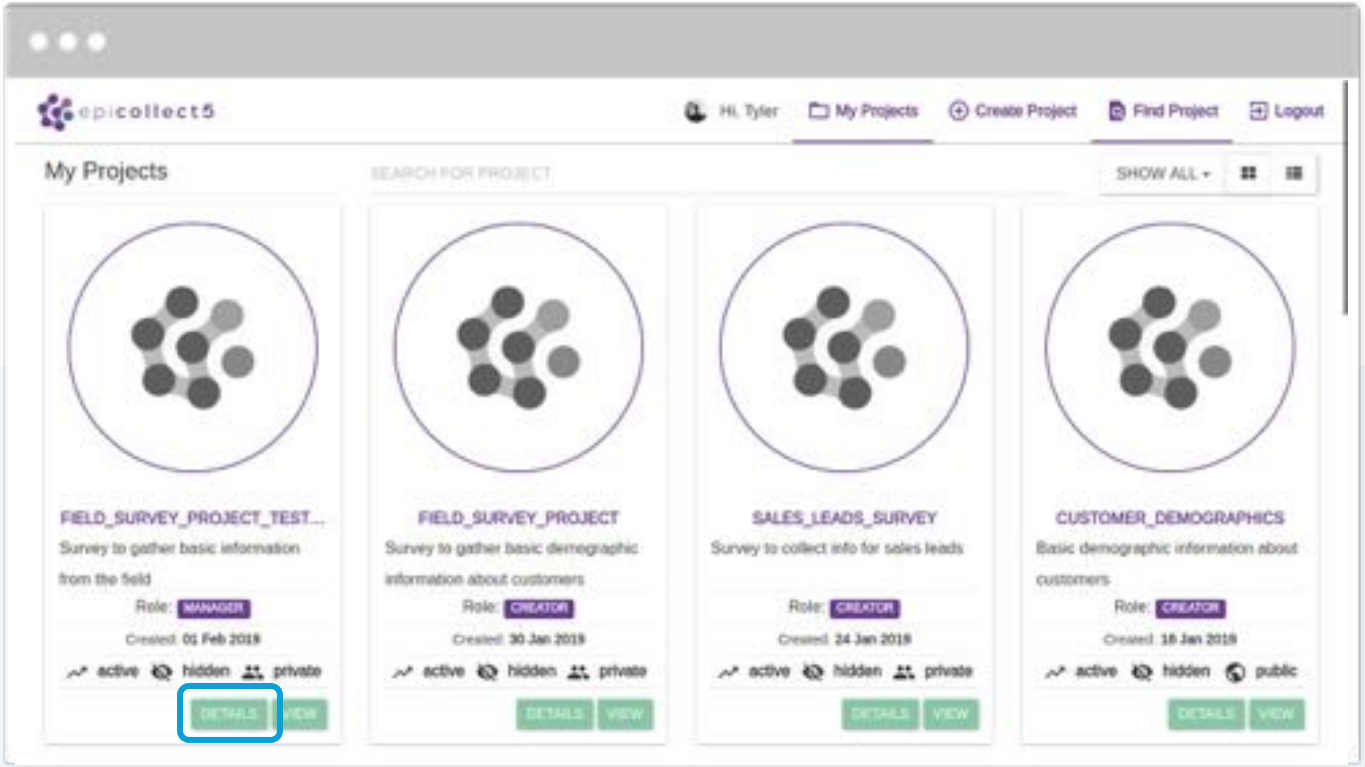
The user can now leave the app or press **Back** to go back to the project homepage.



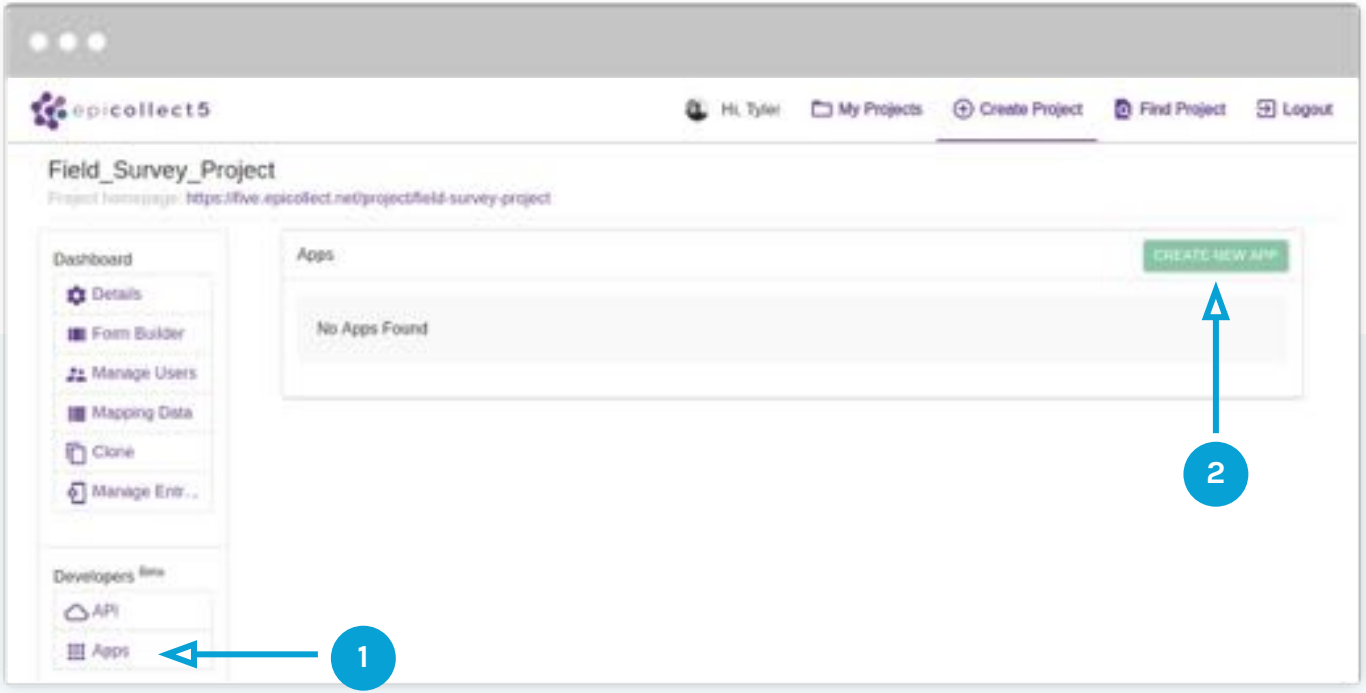
Part Three

How to integrate survey data for use with Google Sheets

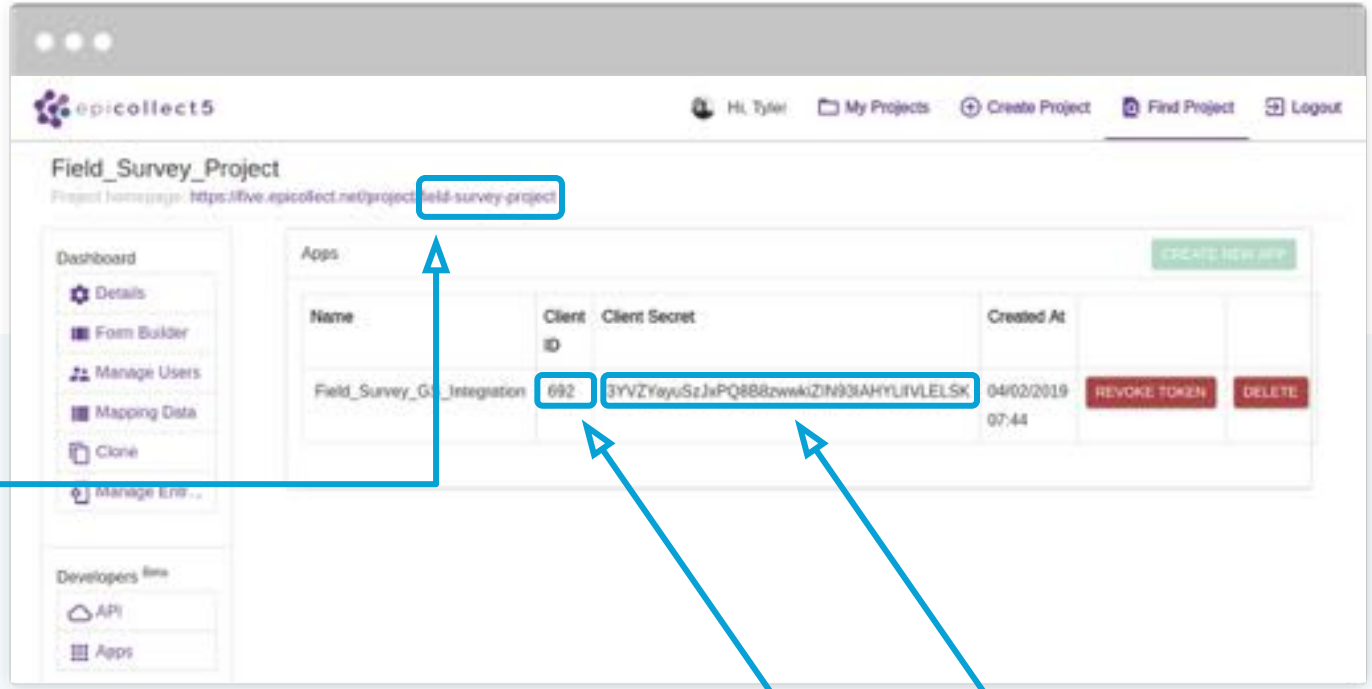
Now that we have uploaded our survey entries, we will need to access and analyse the data. EpiCollect 5 allows us to download our entries as a CSV file. For even easier access and updating, we will show you how to automatically input entries into a Google Sheet, and update the data with a single click.



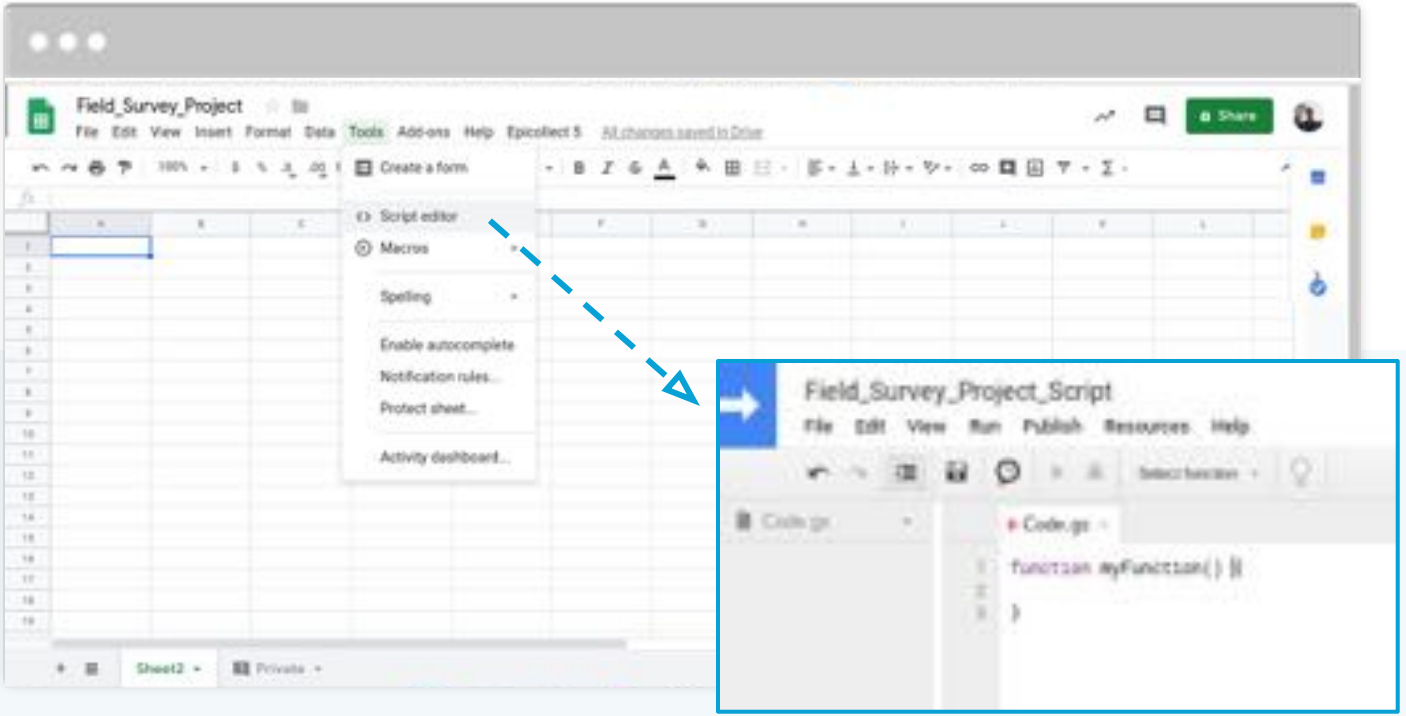
Clicking here will bring you to all of the projects (survey forms) that you have saved in EpiCollect (login required). You'll see the various survey projects that are ongoing. Click **Details** under the project you want to work with.



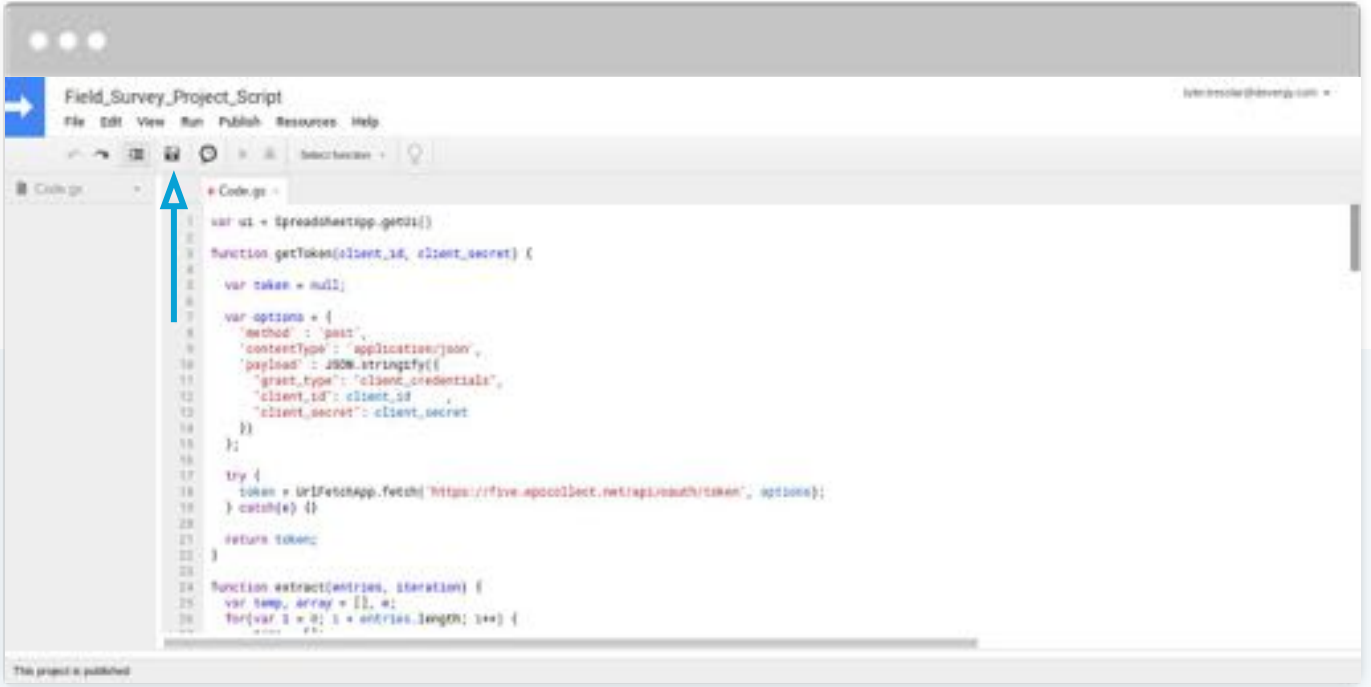
From the project homepage, click **Apps** then click **Create New App**. We will be creating the app that connects EpiCollect to Google Sheets. You will be prompted to name the app - we've called it **Field_Surveys_GS_Integration**. Click **Create New App**.



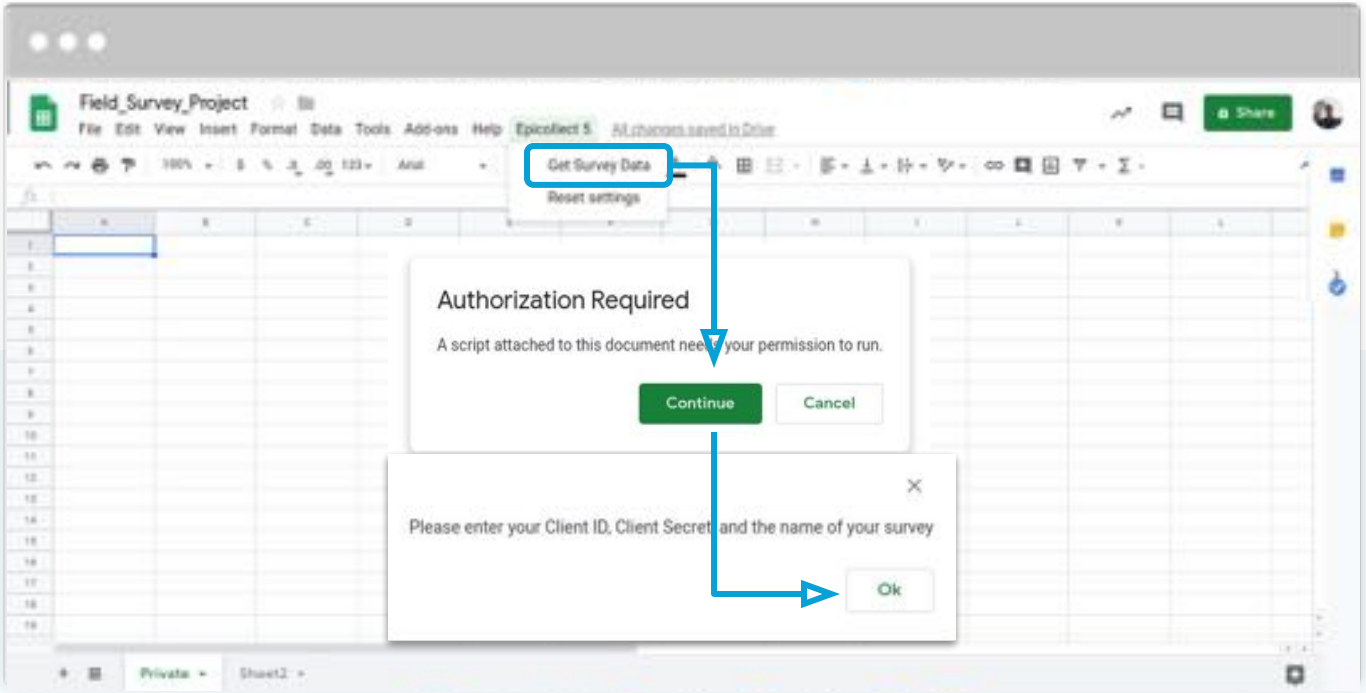
After the app is created, make note of the **Client ID**, **Client Secret**, and the **http version of the project name.** Don't close this browser tab yet! We will be coming back to the information on this page later.



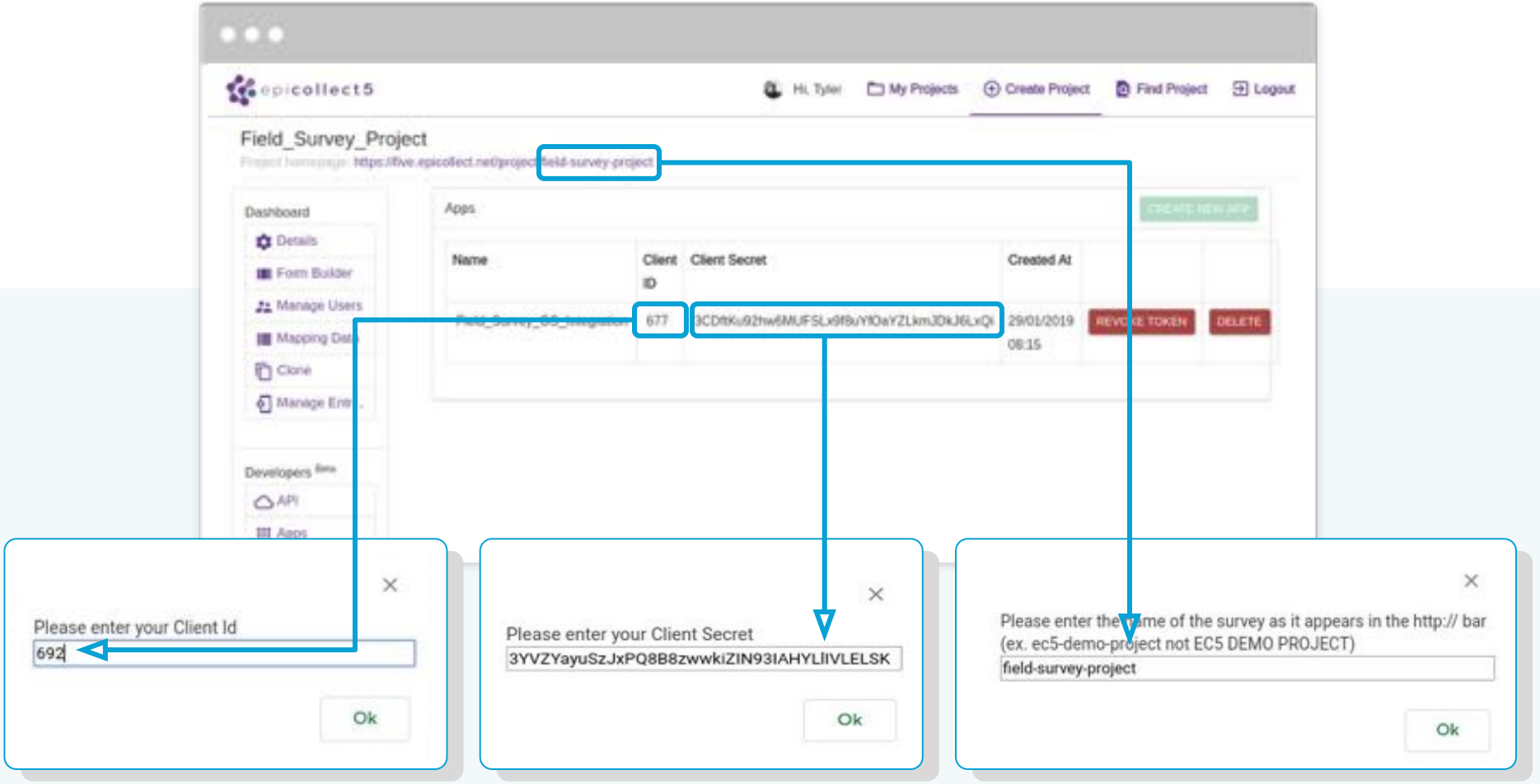
From your Google Drive, open a new blank Google Sheet and give it a name. We've called ours **Field_Survey_Project**. With the Sheet open, open the **Tools** tab and select **Script editor**. This will open the Script Editor in a new browser tab. Note: At this point, the Script Editor should only contain *function myFunction*. If there is existing code in the Script Editor, see your system administrator.

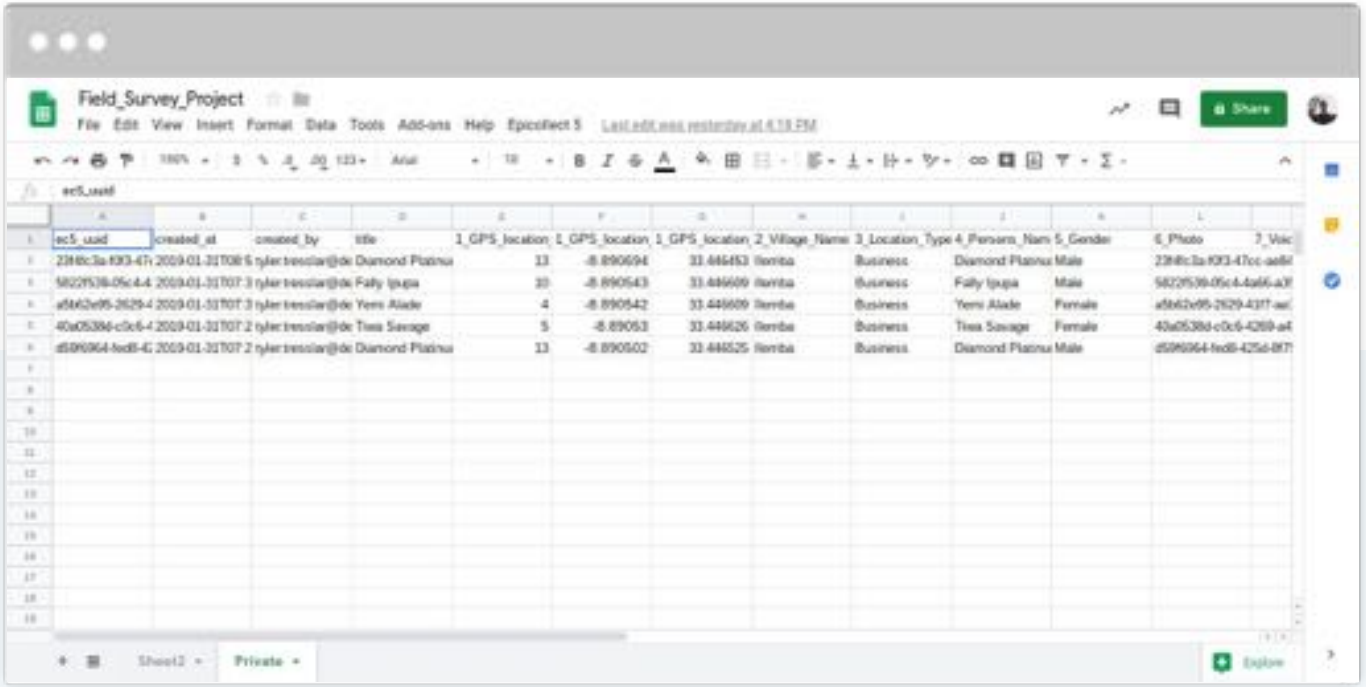


Copy the entire script, found here, and paste it in the Script Editor, replacing all of the existing text. Save the project, and you will be prompted to give the script a name. We have called the project **Field_Survey_Project_Script**. This script pulls the data from the EpiCollect 5 server and arranges it on your Google Sheet.



After the script is saved, refresh the Google Sheet. Don’t panic - it will automatically close the script editor. After refreshing, you will see a new menu called **EpiCollect 5**. Open the new menu and click **Get Survey Data**. You will be prompted to authorize the script: click **Continue**, login, and authorize the script. You will be prompted to enter information about the survey: the Client ID, Client Secret, and the Name of Your Survey.


epicollect5
Hi, Tyler
My Projects
Create Project
Find Project
Logout
Field_Survey_Project
Dashboard
Details
Form Builder
Manage Users
Clone
Developers
API
Apps
Name
Client ID
Client Secret
Created At
677
29/01/2019 08:15
Please enter your Client Id
692
Ok
Please enter your Client Secret
3YVZYayuSzJxPQ8B8zwwkiZIN93IAHYLIIVLELSK
Ok
Please enter the name of the survey as it appears in the http:// bar
(ex. ec5-demo-project not EC5 DEMO PROJECT)
field-survey-project
Ok



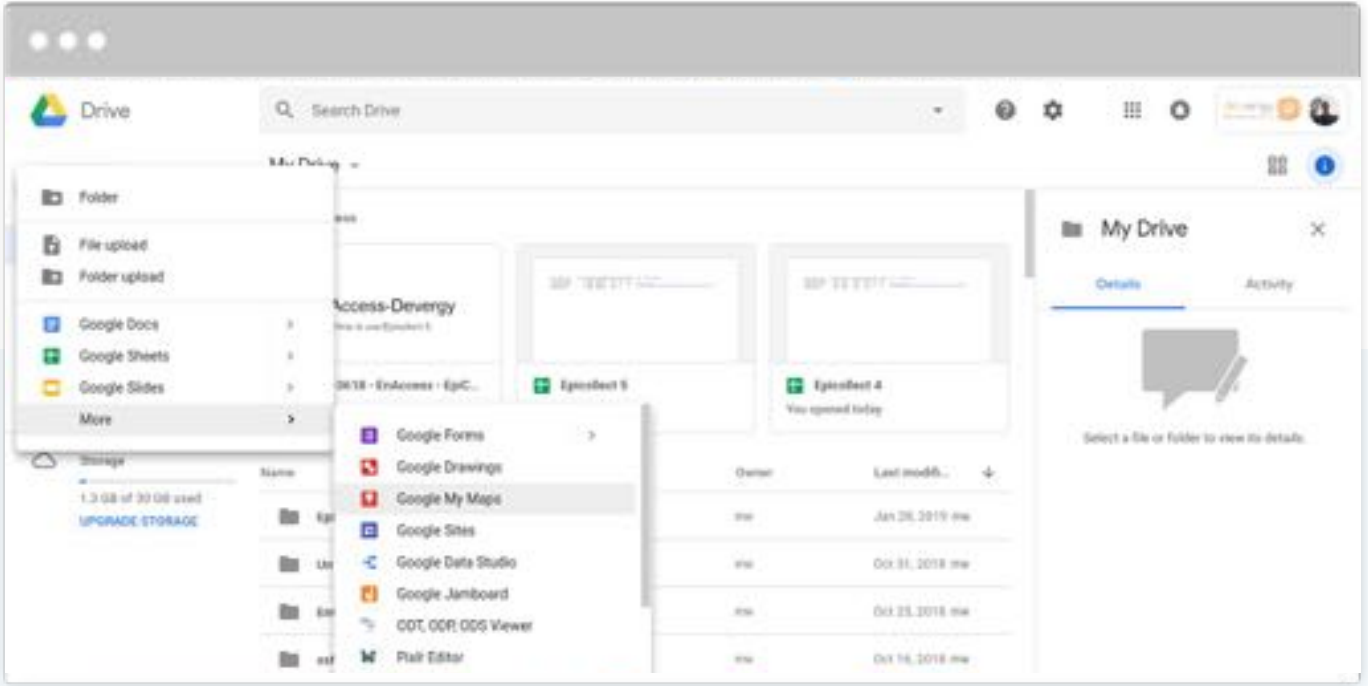
The data will automatically upload into the sheet. To refresh the data, simply click **Get Survey Data** again (you will not be prompted to re-enter any data). If there is any problem with the data - e.g. it is not loading - try clicking **Reset Settings**, then **Get Survey Data** and repeat the process of entering the project details.

Part Four

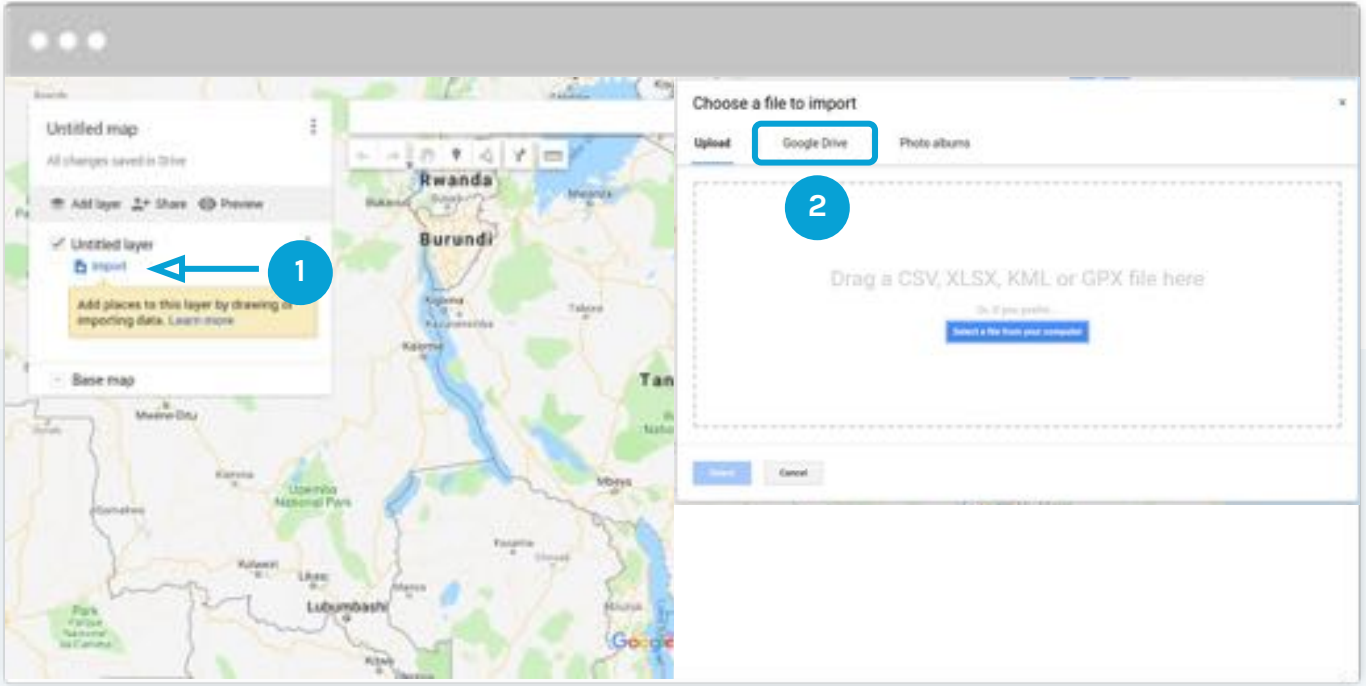
How to visualize data and results on a map with Google My Maps

Now that we have data from our survey in a spreadsheet, we'll want to display it in an accessible format. We can map our data using Google My Maps.

We'll also show you how you can download a copy of the map data to be used with GIS software (e.g. QGIS) or an offline maps app (e.g. Maps.Me).

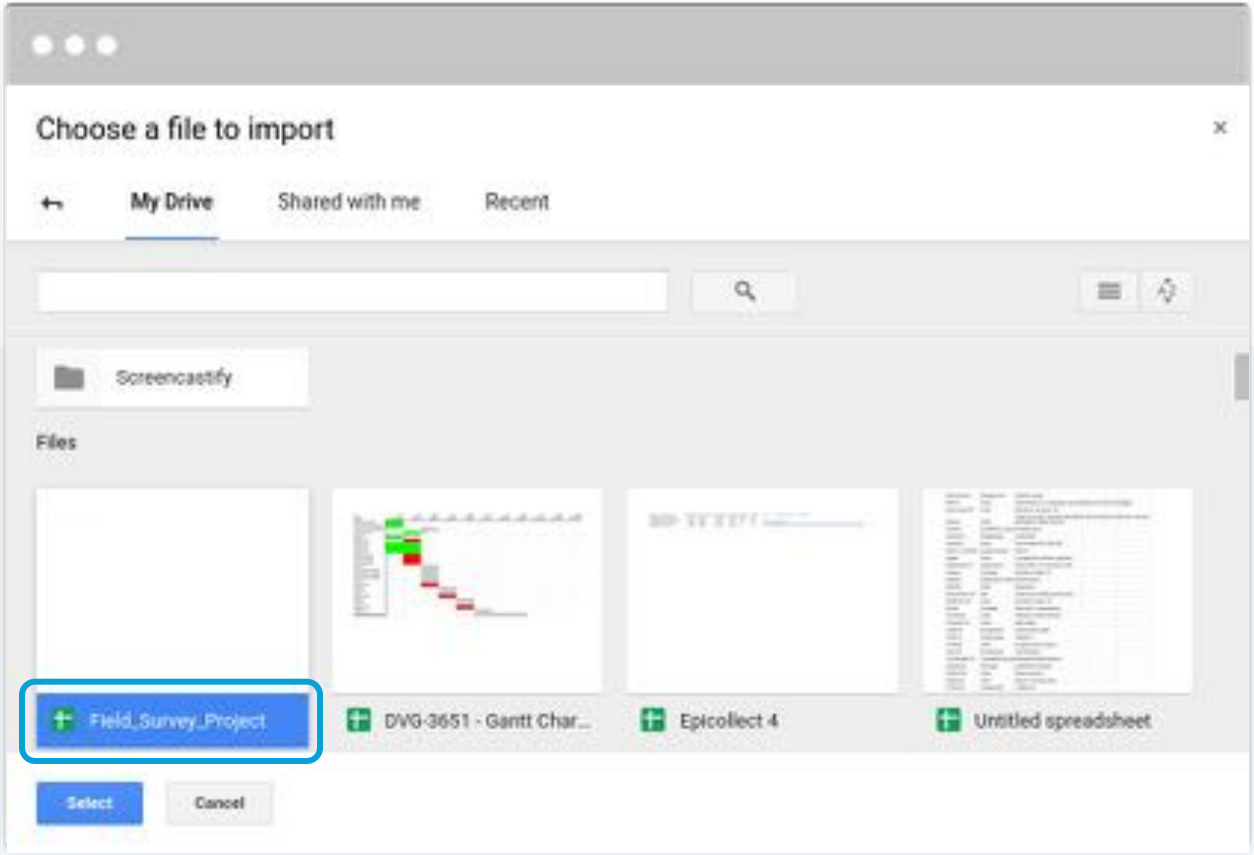


From your Google Drive, open a new **Google My Maps** project.

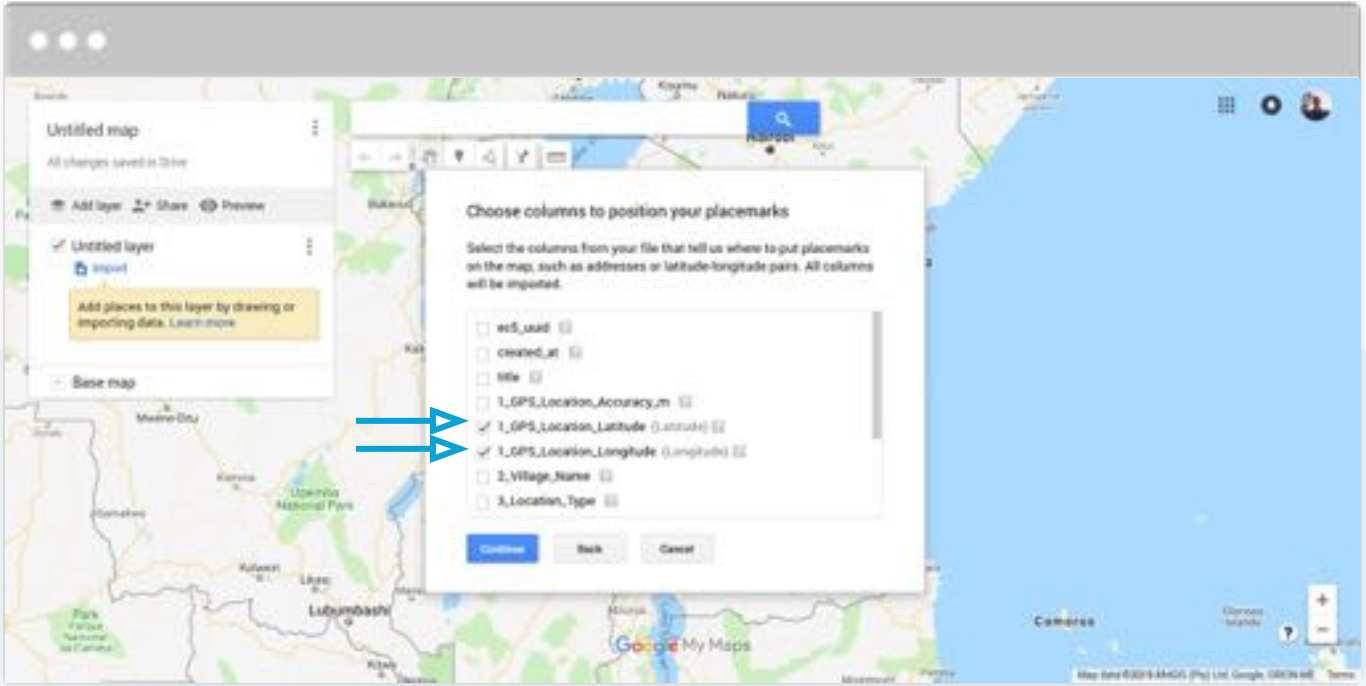


1. Click **Import**
2. Click **Google Drive** to search for files in your Google Drive

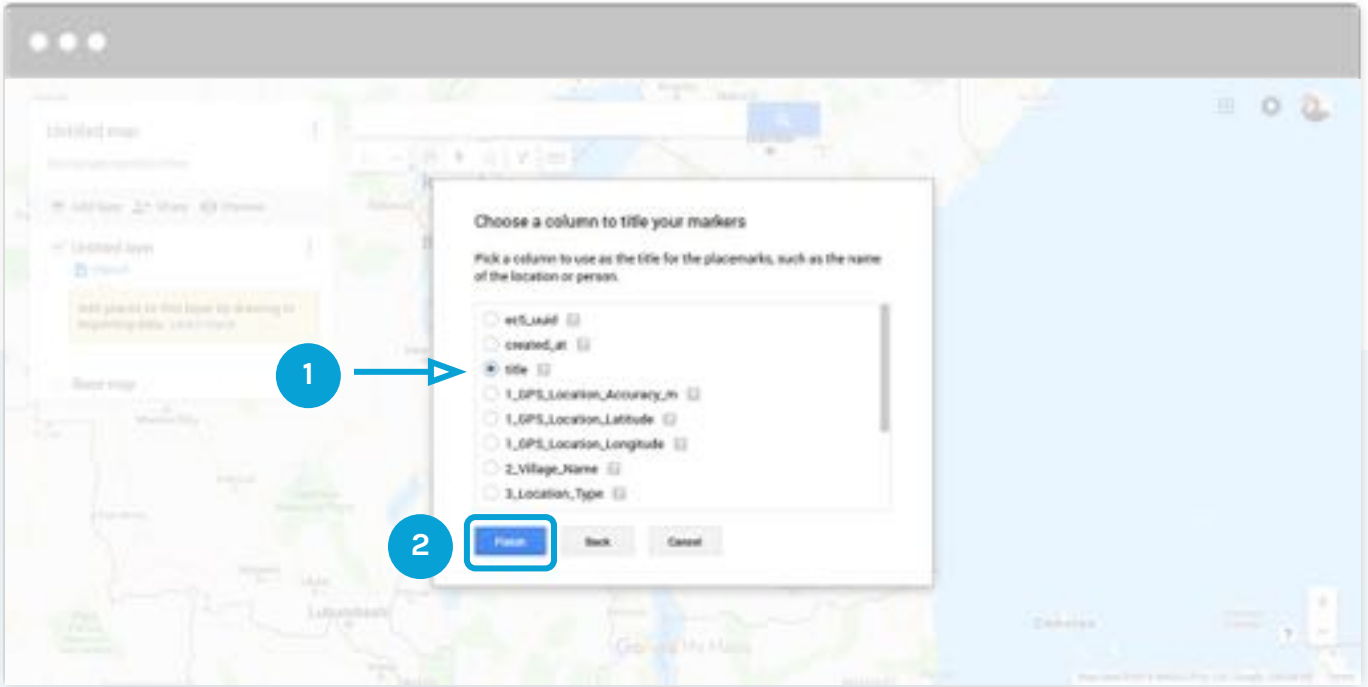
Note: Maps can only pull from the first sheet in your Google Sheets file. Make sure that the data that you want to use is on the Sheet in the first position.



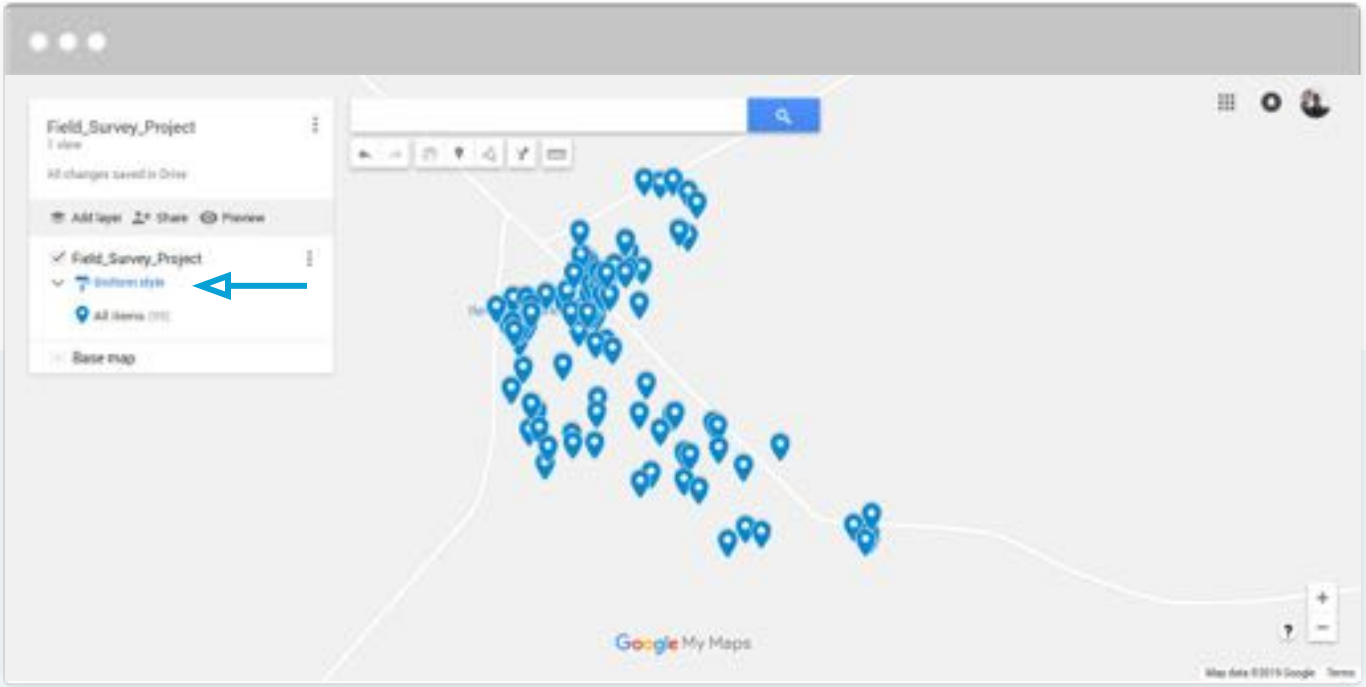
Select the Google Sheets file that contains the data that you would like to display on a map.



Select the Latitude and Longitude pairs.



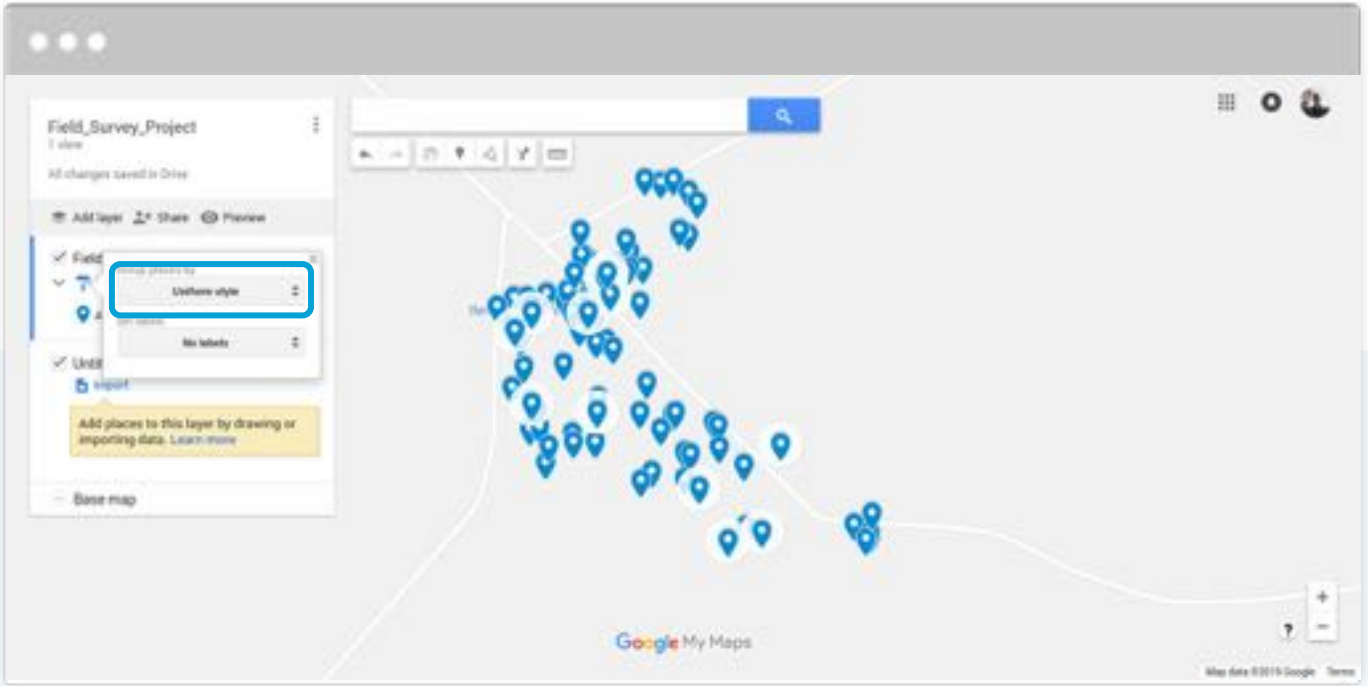
First, select the column that you would like to use for a title and then click **Finish**.



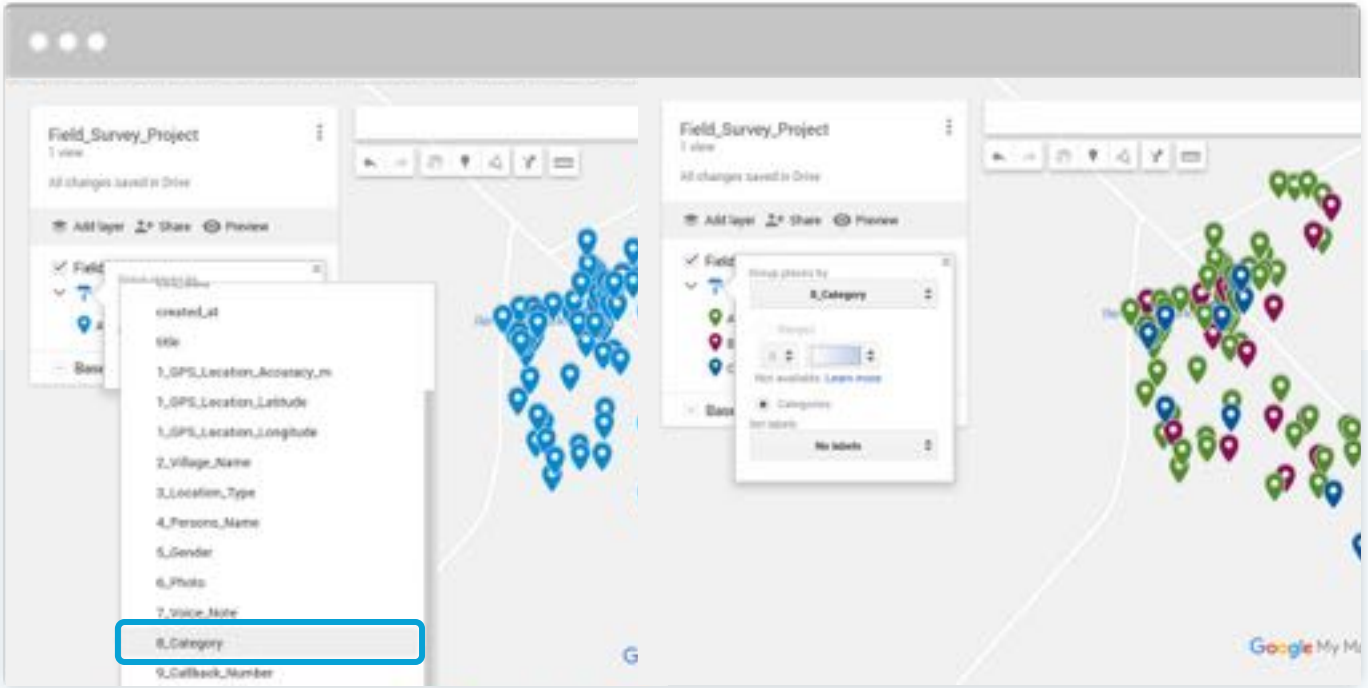
All of the survey entries are now placed on the map. Clicking on each entry will present the data points collected per entry.

Now, let's work on formatting the data points on the map. This can be useful if you immediately want to separate certain data points from others.

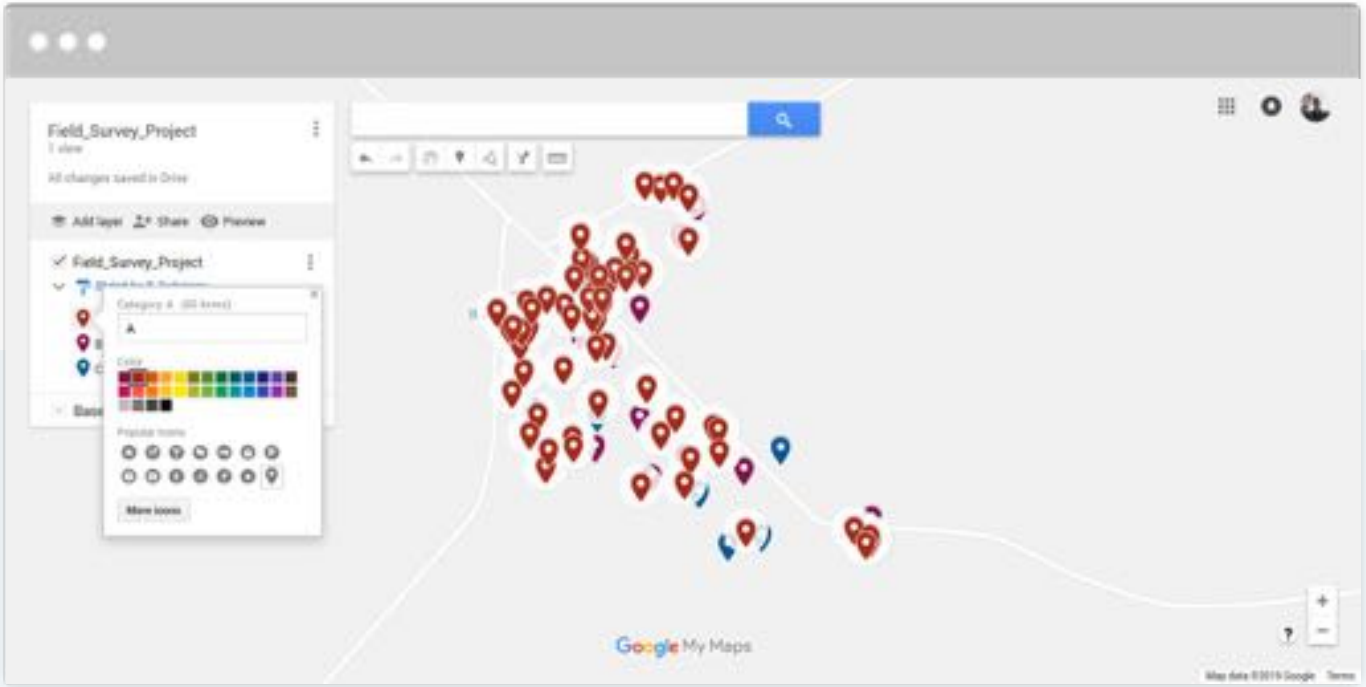
Click on the paint roller icon. This will open a menu.



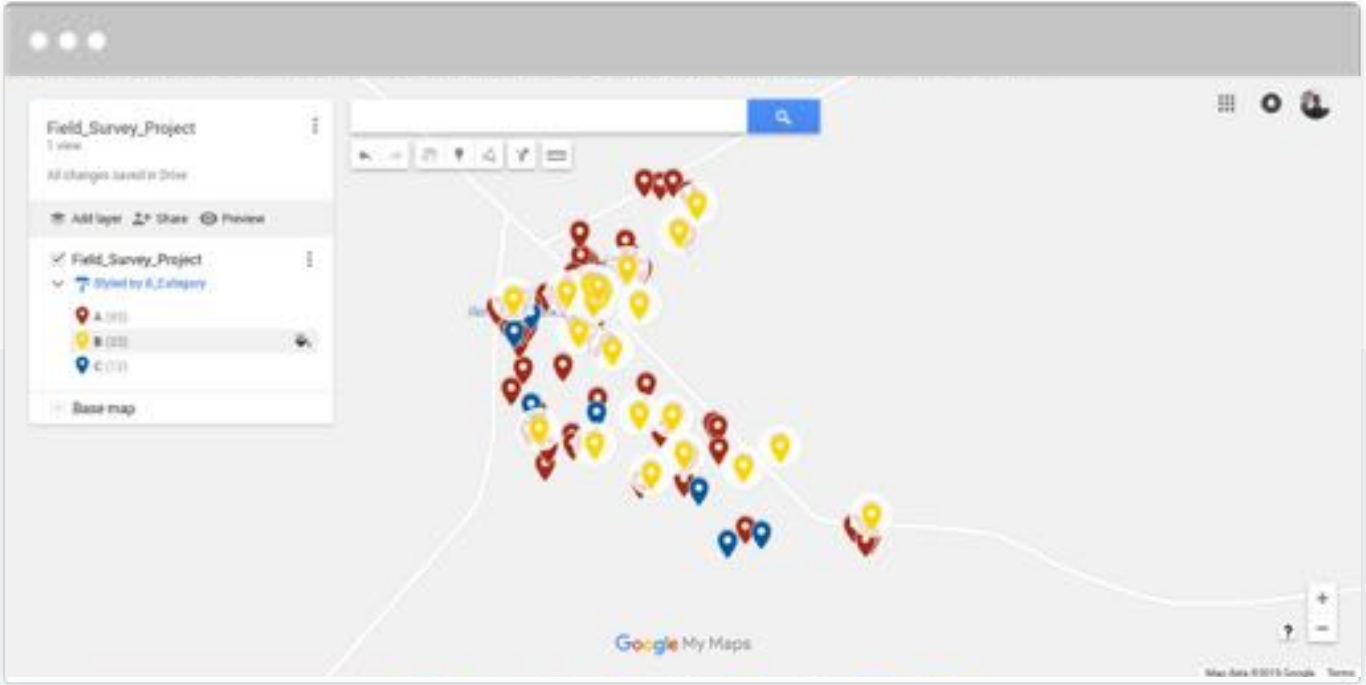
Click on the first dropdown to format the pins by a category.



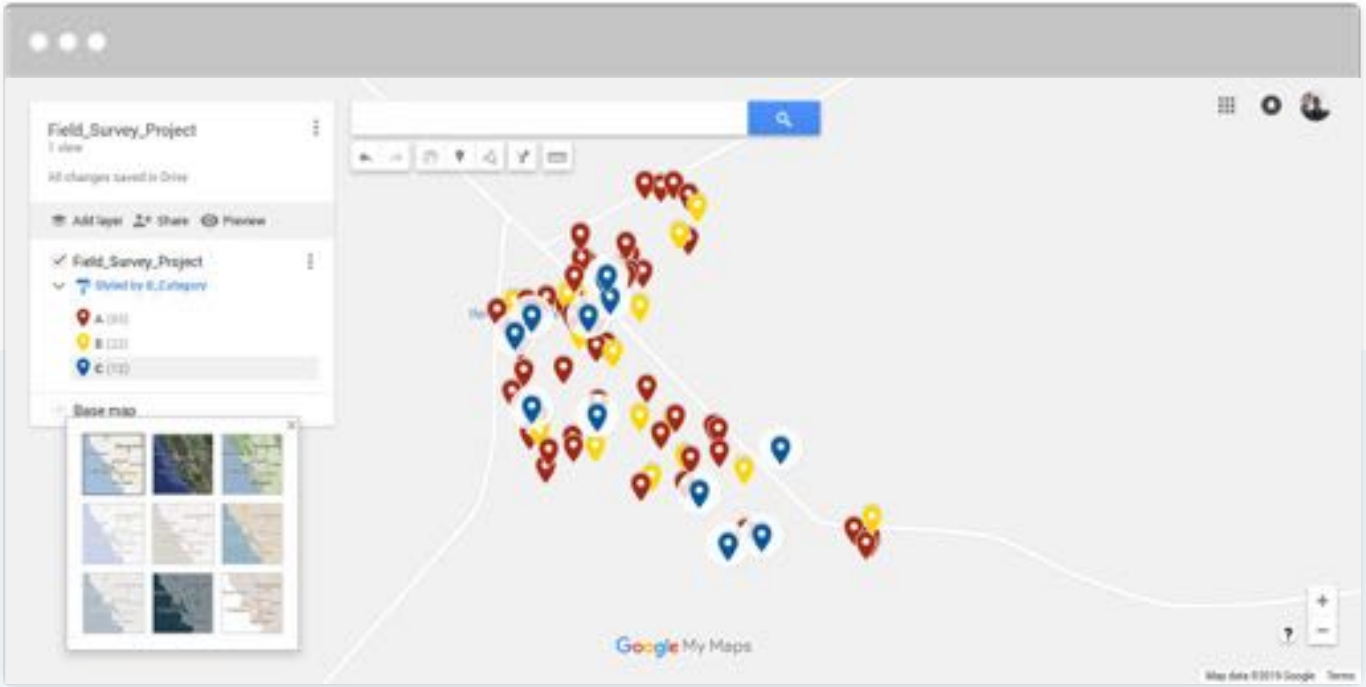
Let’s say we want to color the pins by category. In our survey, we had included categories “A”, “B”, and “C”. If we order the pins by **8_Category**, as shown above, our map will change from the basic version on the left, to the multi-colored version on the right.



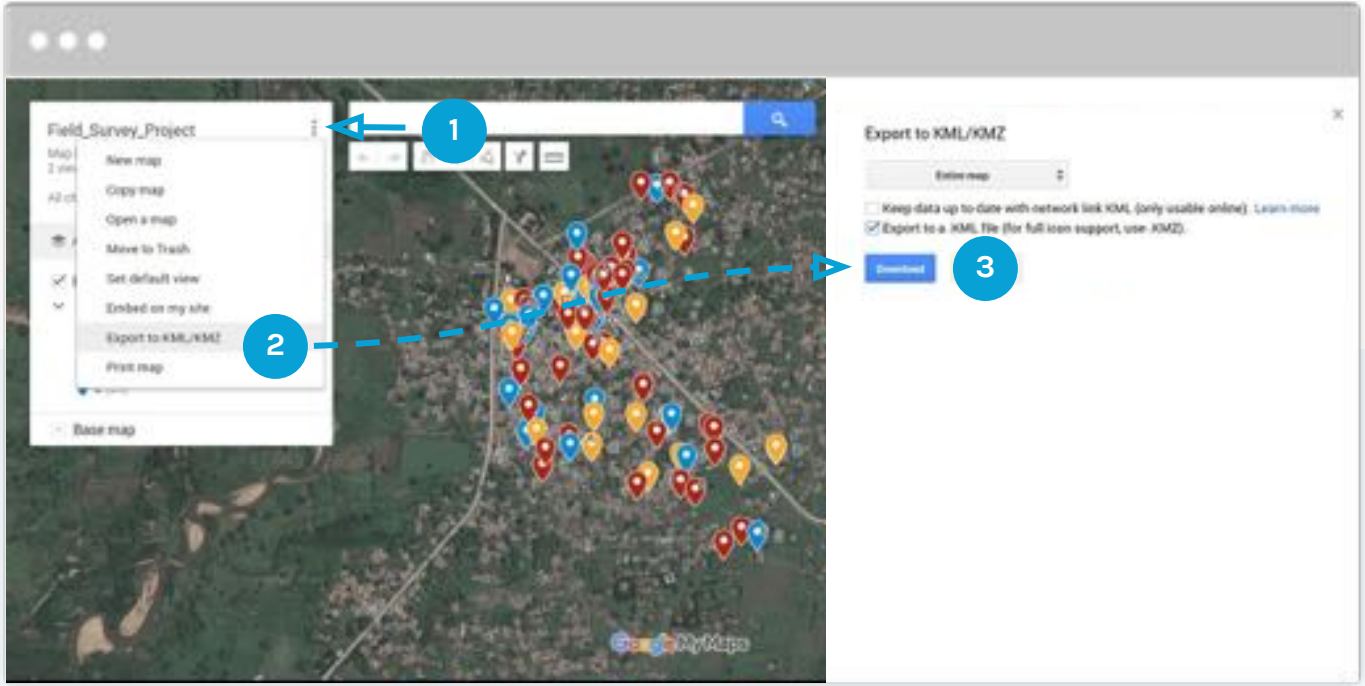
Let’s customize the colors of the markers. If we assume that our categories “A”, “B”, and “C” actually meant “Hot”, “Warm”, and “Cold” (i.e. in the context of sales leads), we can assign colors per Category. We’ll assign red for our Hot leads, orange for our Warm leads, and blue for our Cold leads.



To change the color of a category, mouse over to the right-hand side of the Category, and click on the paint bucket icon that appears.



Now that we've organized our leads by color, we can change the base map. There are a few options here. For this example, we'll use satellite imagery to help us view any buildings or obstructions.



We've finished the map!

We can download the KML or KMZ version of this map to use with QGIS or an offline maps app. To do this: 1) Click the three dots at the upper right corner to open the menu; 2) Click **Export to KML/KMZ**. Check the box (right) if you want prefer to download as a KML file, then 3) Click **Download** in the popup.

Happy surveying!

We’d love to hear your feedback on this toolkit.

Send any questions, comments, or suggestions for improvement to: info@enaccess.org.