

How to use Devergy's Survey Toolkit



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...

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

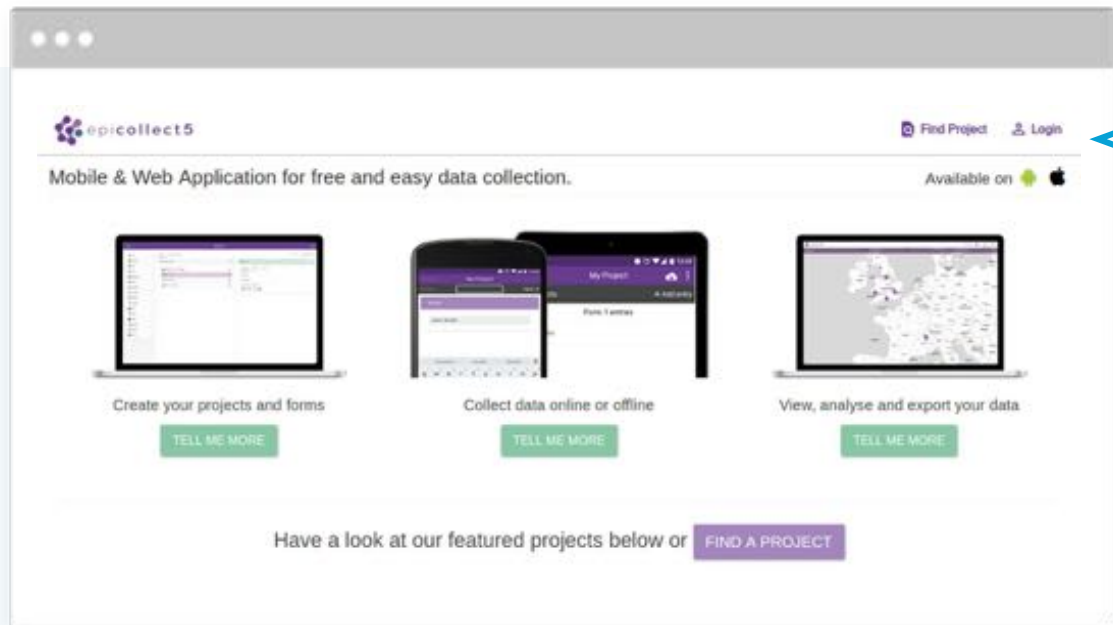
Part One

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



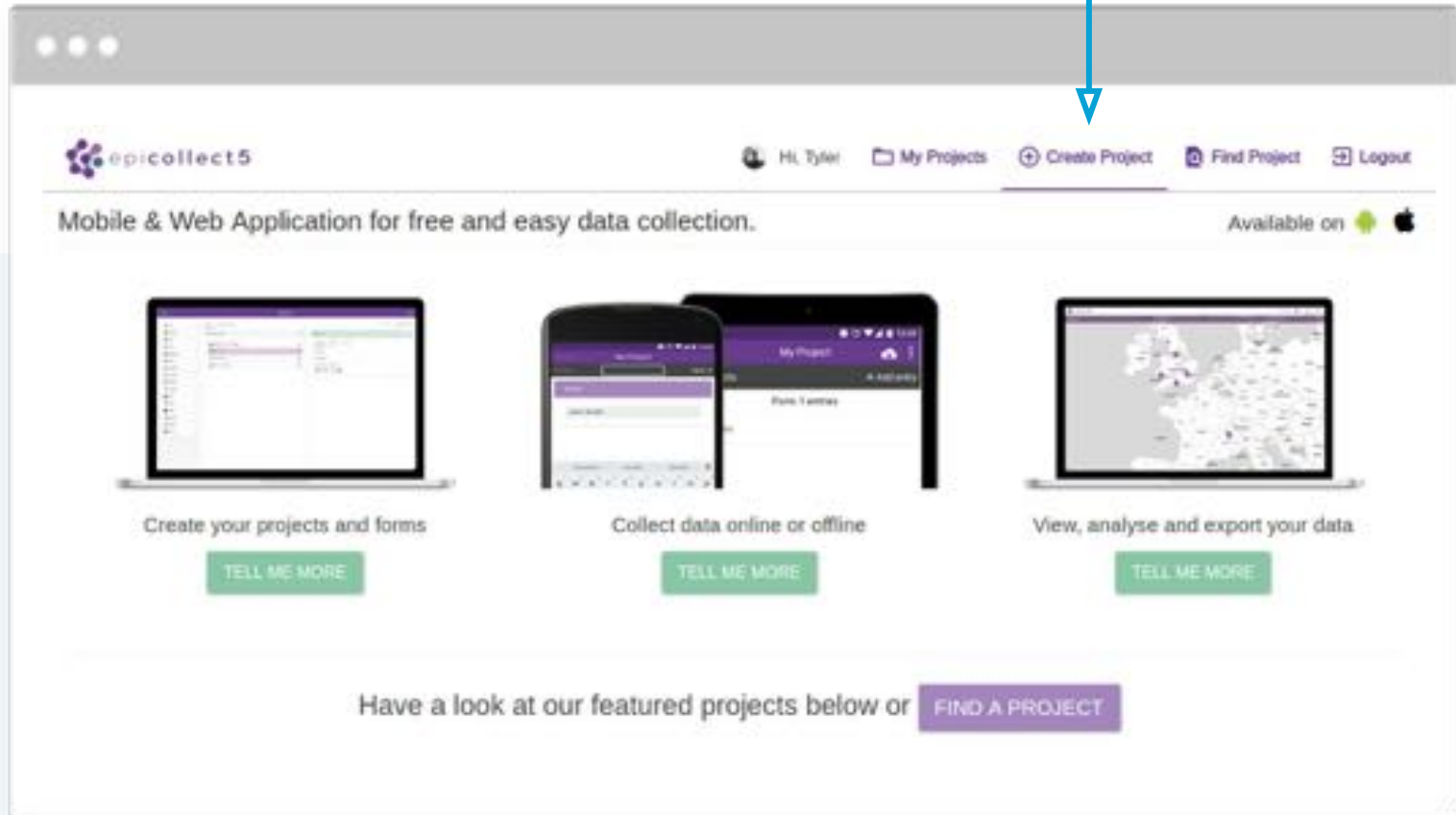
Part One

How to create a survey form with EpiCollect 5



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

Click **Create Project**



epicollect5

Hi, Tyler

My Projects

Create Project

Find Project

Logout

Create Project

New Project Import Project

Project name

Field_Survey_Project

Max 50 chars

Small description (A long description can be added later)

Survey to gather basic information from the field

Max 100 chars

Form name

Field_Survey

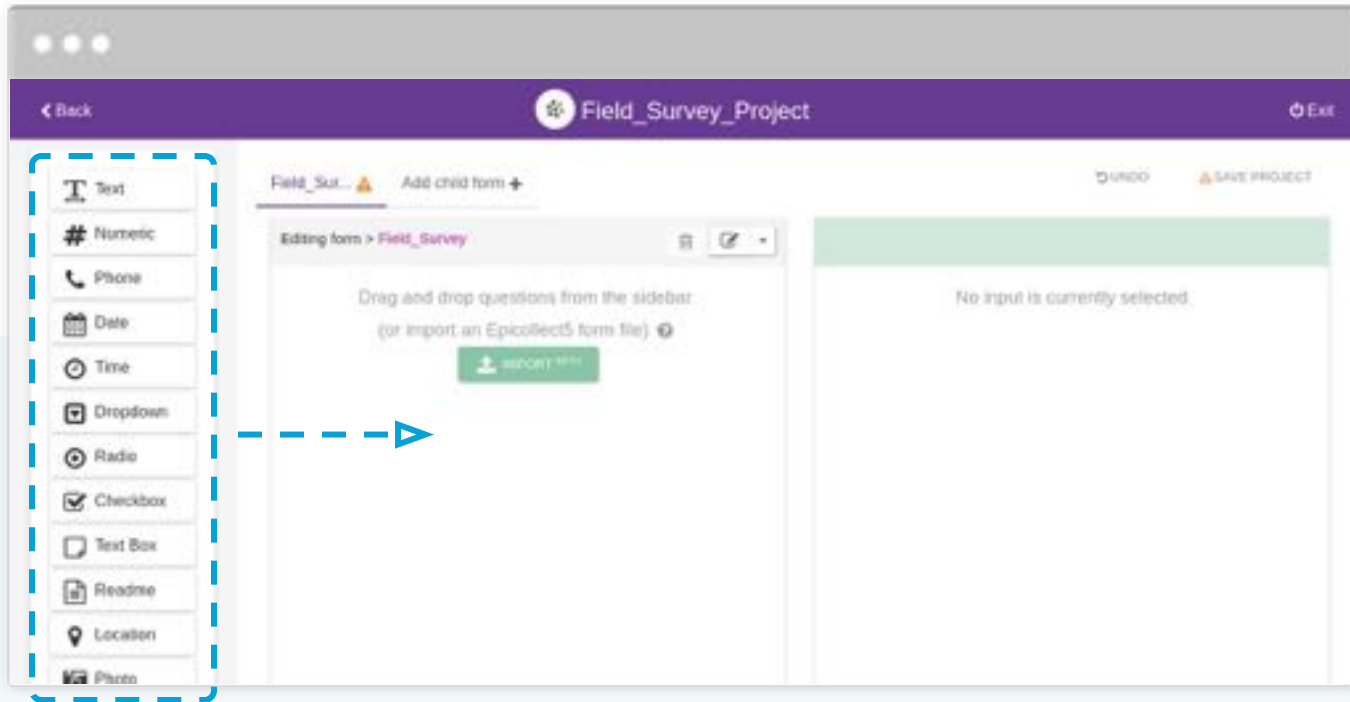
Max 50 chars

Access

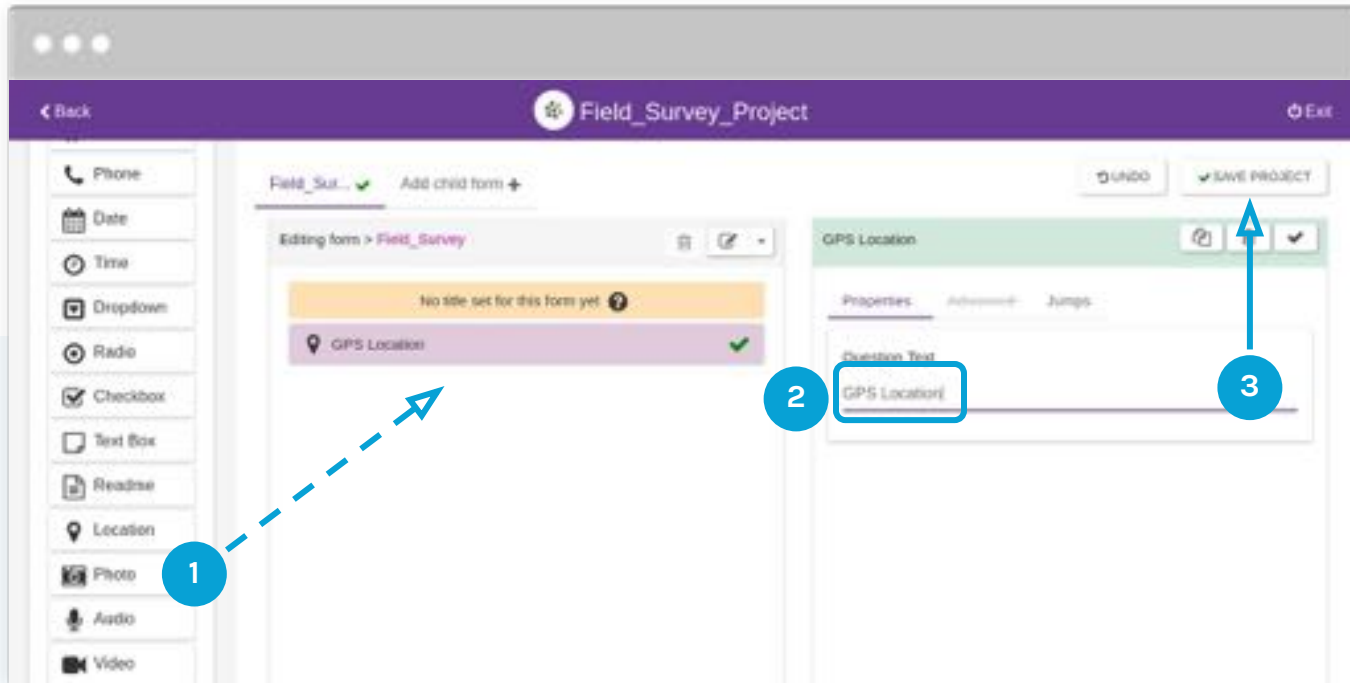
☒ Private ☐ Public

CREATE

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**.



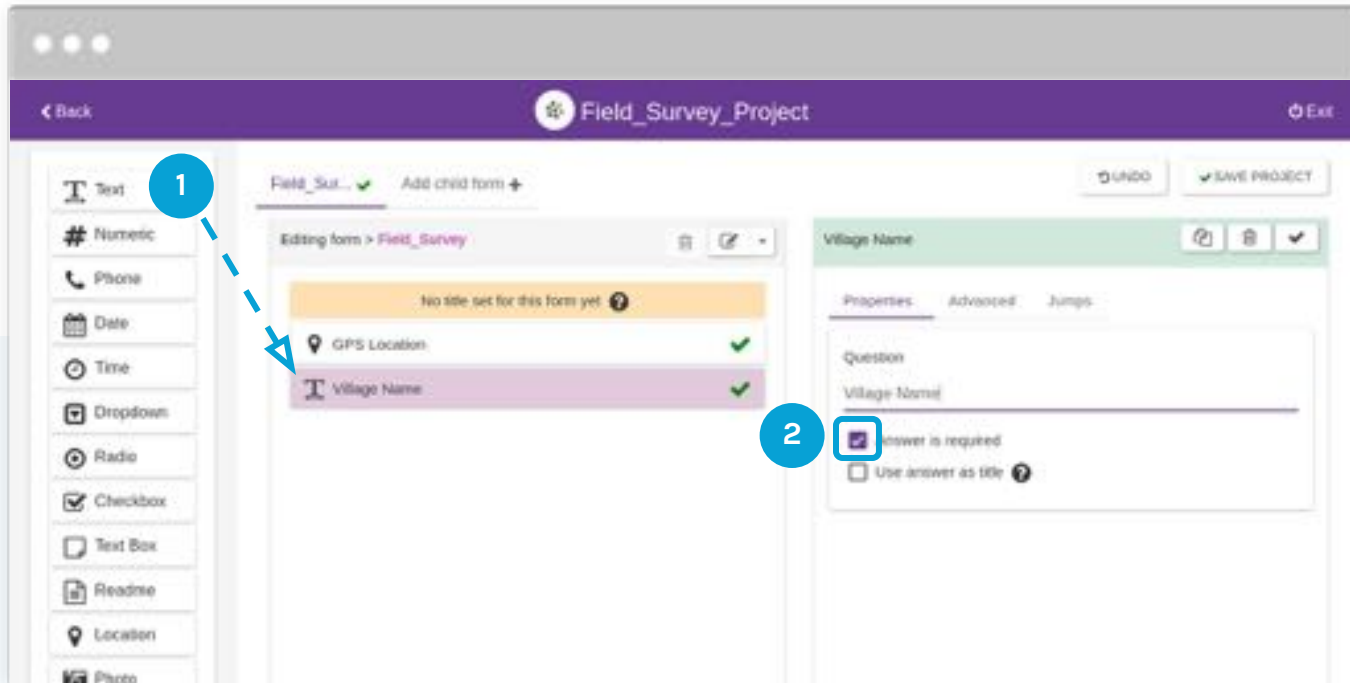
You will be prompted to open the form builder. After opening it, you can drag different types of entries/questions directly to the survey form. You can also get to the form builder from the left-side menu on the project homepage.



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.

The screenshot shows a software interface for creating a survey form titled "Field_Survey_Project". On the left is a vertical toolbar with various question types: Text, Numeric, Phone, Date, Time, Dropdown, Radio, Checkbox, Text Box, Readme, Location, and Photo. The "Dropdown" option is highlighted with a blue arrow. The main workspace is divided into two panes. The left pane, titled "Editing form > Field_Survey", shows a list of questions: "GPS Location", "Village Name", and "Location Type", each with a green checkmark. The "Location Type" question is selected and highlighted in purple. The right pane, titled "Location Type", shows the configuration for this question. It has tabs for "Properties", "Advanced", and "Jumps". Under the "Properties" tab, there are checkboxes for "Answer is required" and "Use answer as title". Below these is a section for "Possible answers" with an "ADD ANSWER" button and a list of answers, including "Household".

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

The screenshot displays the 'Field_Survey_Project' interface. On the left is a sidebar with form field types: Text, Numeric, Phone, Date, Time, Dropdown, Radio, Checkbox, Text Box, Readme, Location, and Photo. The main area shows 'Editing form > Field_Survey'. It lists three fields: 'GPS Location', 'Village Name', and 'Location Type', each with a green checkmark. The 'Location Type' field is highlighted in purple. To the right, the 'Possible answers' section for 'Location Type' is shown, with a blue box around the '+ ADD ANSWER' button. Below this button are four options: 'Household', 'Government', 'Business', and 'N/A', each with a delete icon. Blue arrows point from the 'Location Type' field to each of these four options.

...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.

The screenshot displays a software interface for creating a survey form. At the top, a purple header bar contains a 'Back' button, a star icon, the title 'Field_Survey_Project', and an 'Exit' button. Below the header, a sidebar on the left lists various question types: Text, Numeric, Phone, Date, Time, Dropdown, Radio, Checkbox, Text Box, Readme, Location, and Photo. The main area is divided into two panels. The left panel, titled 'Field_Survey' with a green checkmark and an 'Add child form +' button, shows a list of fields: GPS Location, Village Name, Location Type, and Person's Name. Each field has a green checkmark to its right. The 'Person's Name' field is highlighted with a purple background. The right panel, titled 'Person's Name', shows the configuration for this field. It has tabs for 'Properties', 'Advanced', and 'Jumps'. Under the 'Properties' tab, the question text 'Person's Name' is shown. Below it, two checkboxes are visible: 'Answer is required' and 'Use answer as title', both of which are checked. A blue square highlights these two checkboxes. At the top right of the right panel, there are 'UNDO' and 'SAVE PROJECT' buttons.

Next we'll add another **Text** question type for Person's name. At Deveryg, 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.

The screenshot shows a web-based form editor for a project titled "Field_Survey_Project". On the left is a sidebar with various field types: Text, Numeric, Phone, Date, Time, Dropdown, Radio, Checkbox, Text Box, Readme, Location, and Photo. The main area is divided into two panes. The left pane, titled "Editing form > Field_Survey", lists the form fields: GPS Location, Village Name, Location Type, Person's Name, and Gender. Each field has a green checkmark to its right, indicating it is valid. The "Gender" field is currently selected and highlighted in purple. Above this list are buttons for "Field_Sur..." (with a checkmark) and "Add child form +". The right pane shows the configuration for the selected "Gender" question. It includes checkboxes for "Answer is required" and "Use answer as title" (with a help icon). Below these is a section titled "Possible answers" with an "ADD ANSWER" button. Two answers are listed: "Male" and "Female", each with a delete icon (an 'x' in a square).

Field_Survey_Project

Back Exit

Field_Sur... Add child form +

Undo Save Project

Editing form > Field_Survey

GPS Location ✓

Village Name ✓

Location Type ✓

Person's Name ✓

Gender ✓

Question

Gender

☐ Answer is required

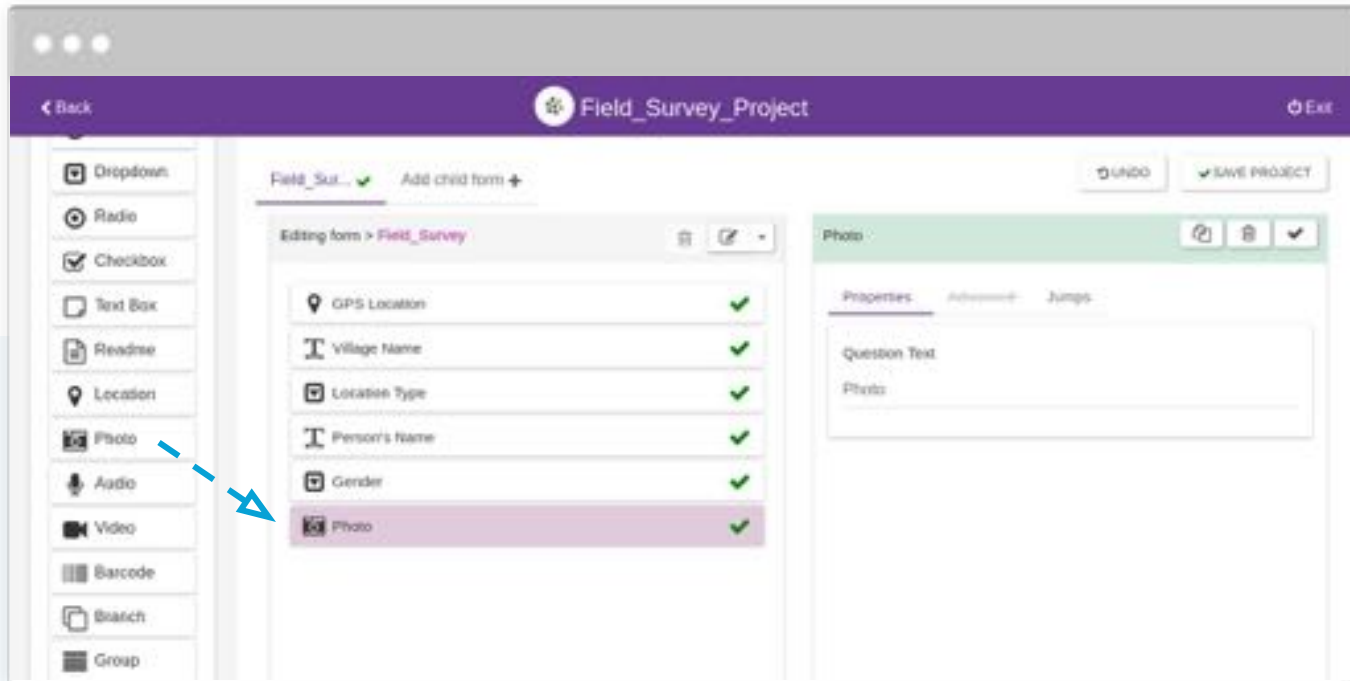
☐ Use answer as title ?

Possible answers + ADD ANSWER

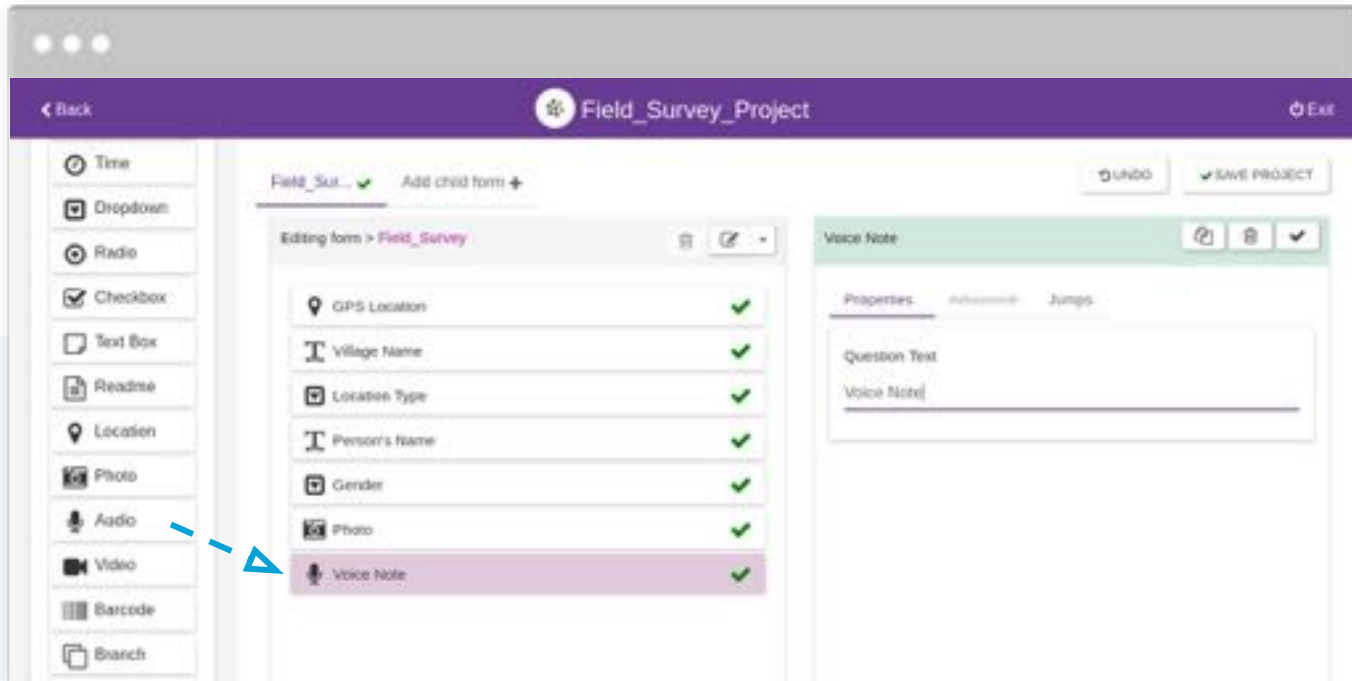
Male x

Female x

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.

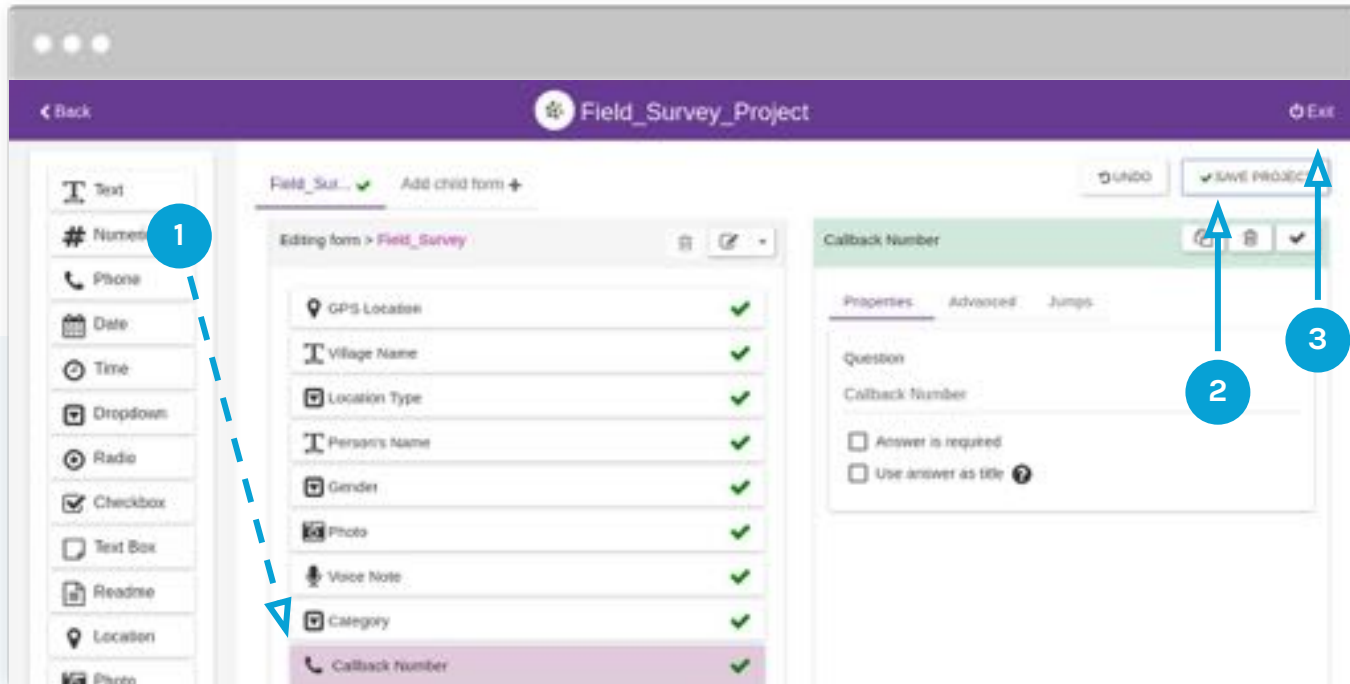


Next, we'll add an **Audio** type entry. This can be used to collect a voice memo and attach it to the survey.

The screenshot shows a software interface for creating a field survey project. At the top, there's a purple header bar with a 'Back' button, a star icon, the title 'Field_Survey_Project', and an 'Exit' button. Below the header, on the left, is a vertical sidebar with various field type icons: Phone, Date, Time, Dropdown, Radio, Checkbox, Text Box, Readme, Location, Photo, Audio, and Video. A blue dashed arrow points from the 'Dropdown' icon in the sidebar to the 'Category' field in the main list. The main area is titled 'Field_Sur...' and 'Add child form +'. It contains a list of fields: GPS Location, Village Name, Location Type, Person's Name, Gender, Photo, Voice Note, and Category. Each field has a green checkmark to its right. The 'Category' field is highlighted with a purple background. To the right of the list, there's a 'Question' section with 'Answer is required' checked and 'Use answer as title' unchecked. Below that is a 'Possible answers' section with a green header and an 'ADD ANSWER' button. It lists three options: A, B, and C, each with a delete icon.

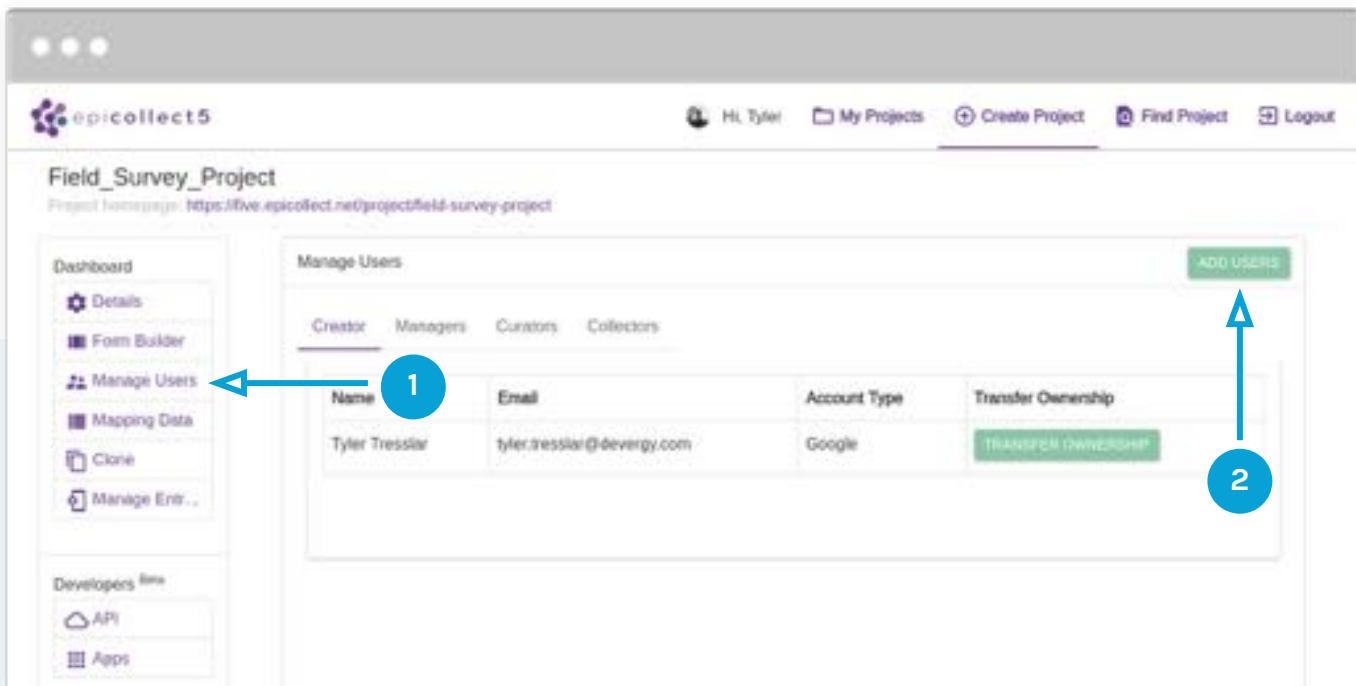
Field Type	Field Name	Status
GPS Location	GPS Location	✓
Village Name	Village Name	✓
Location Type	Location Type	✓
Person's Name	Person's Name	✓
Gender	Gender	✓
Photo	Photo	✓
Voice Note	Voice Note	✓
Category	Category	✓

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.



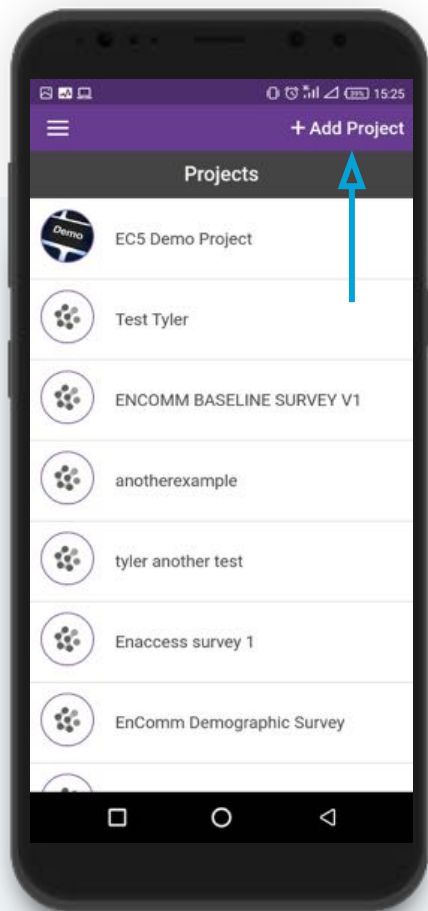
Once your survey form is completed, you can make it available for staff that will be collecting data. Anyone using the form to collect data needs to be added as a user. To add users, click on **Manage Users** from the project homepage, then click **Add Users**. More information about users can be found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

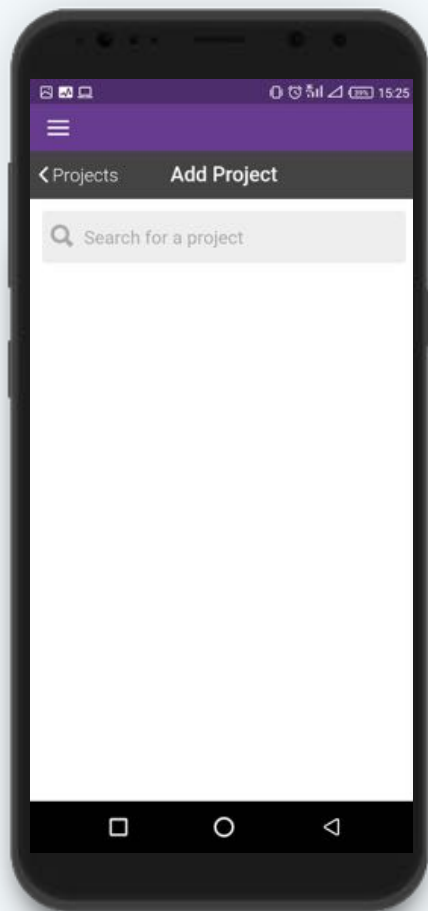




Before we get started, each device will need to have the EpiCollect 5 app installed. After opening EpiCollect 5, the user will be brought to the Projects page.

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.

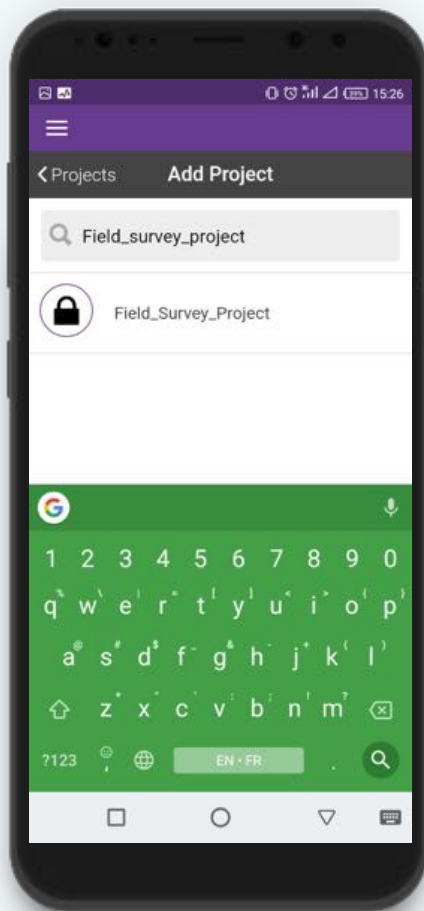
This must be done while connected to the internet.

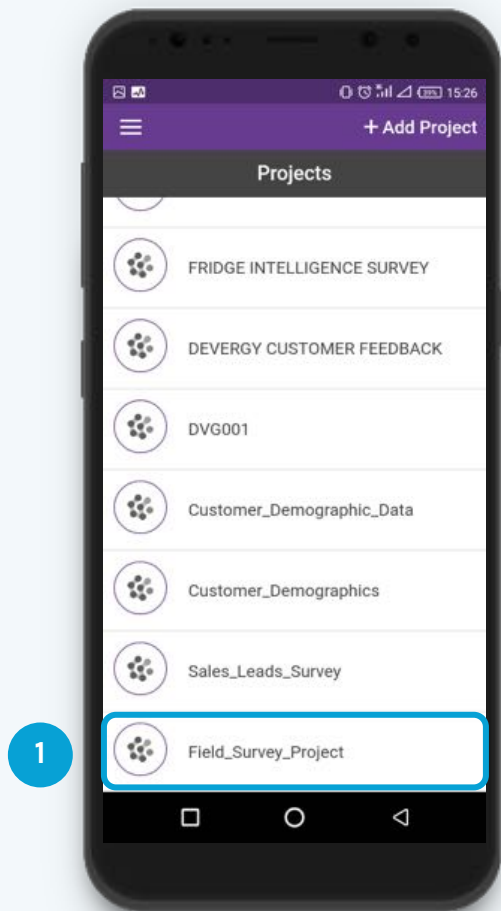


Type the name of the project (or survey template) you are looking for into the search bar. Remember, our project was called **Field_Survey_Project**. You may be asked to login.

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.



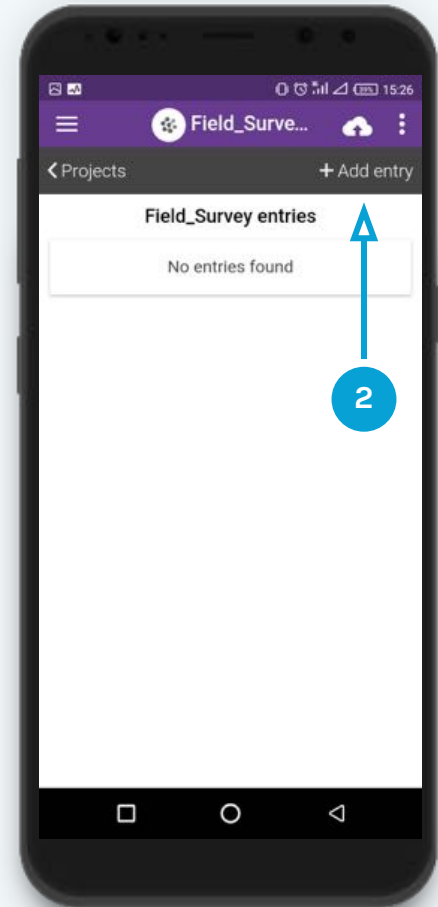


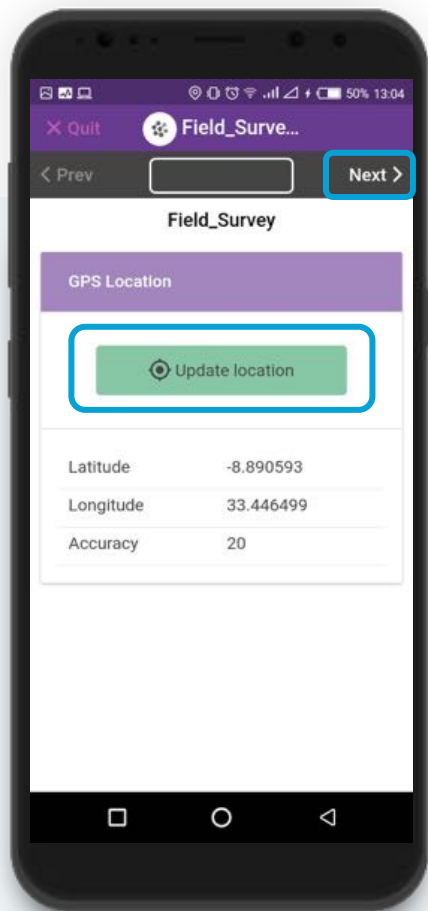
Now that we're out in the field, we are no longer relying on having a steady data connection.

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.

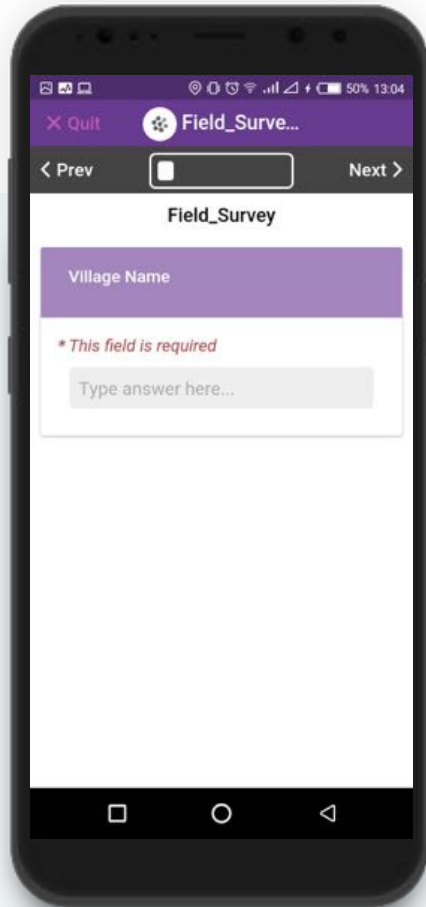




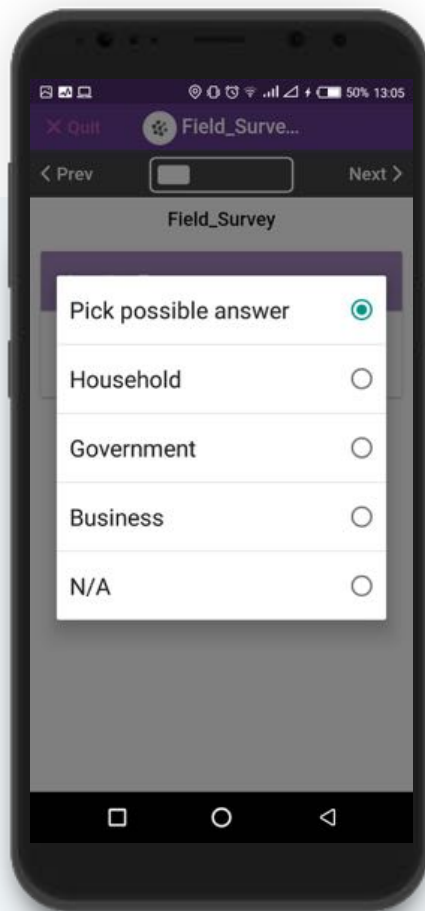
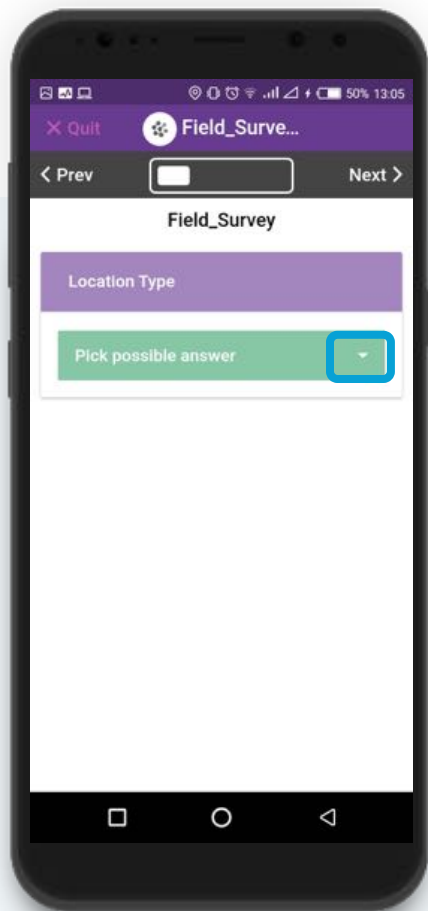
This is how a Location type entry appears in the mobile app. If you tap the **Update Location** button, the coordinates are saved. The accuracy can be improved by moving away from obstructions such as trees, tall structures, and by moving outdoors. Make sure you are standing next to the location you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

Field_Surve...

< Prev Next >

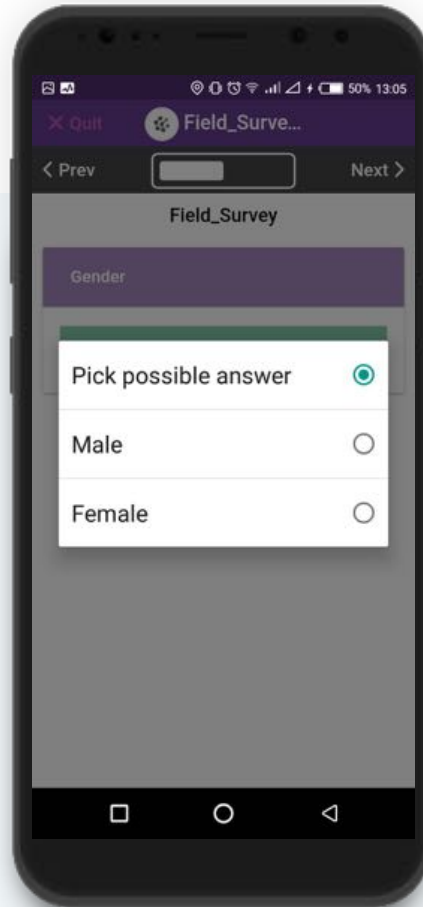
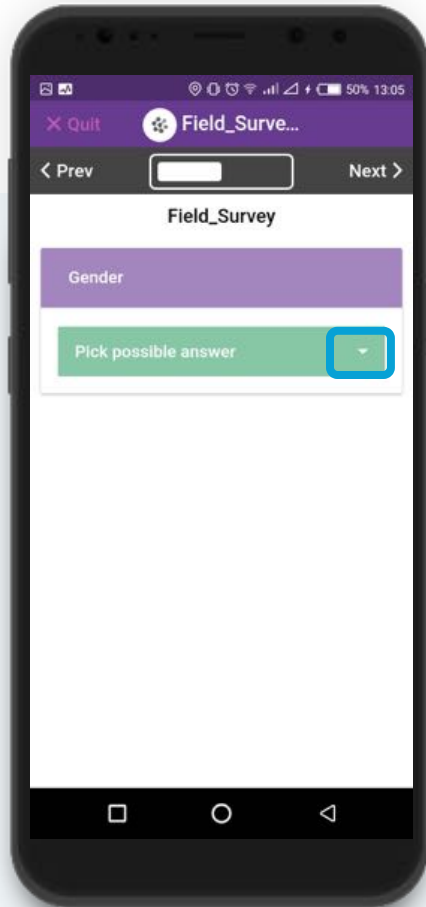
Field_Survey

Person's Name

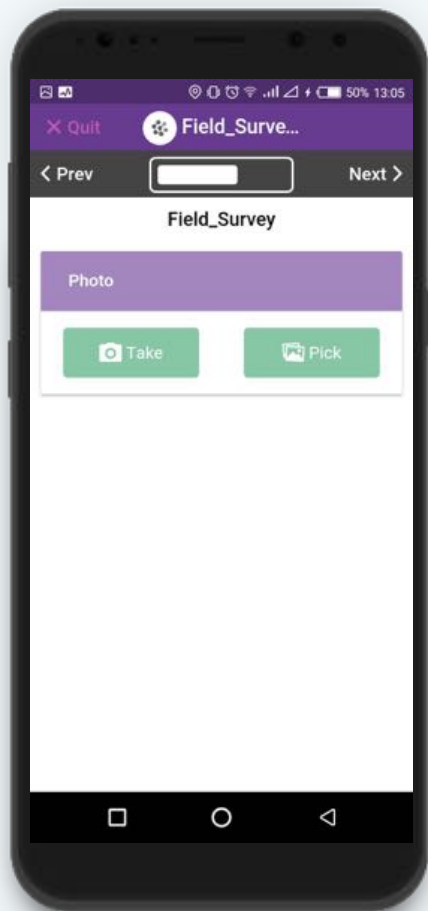
* This field is required

Type answer here...

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.

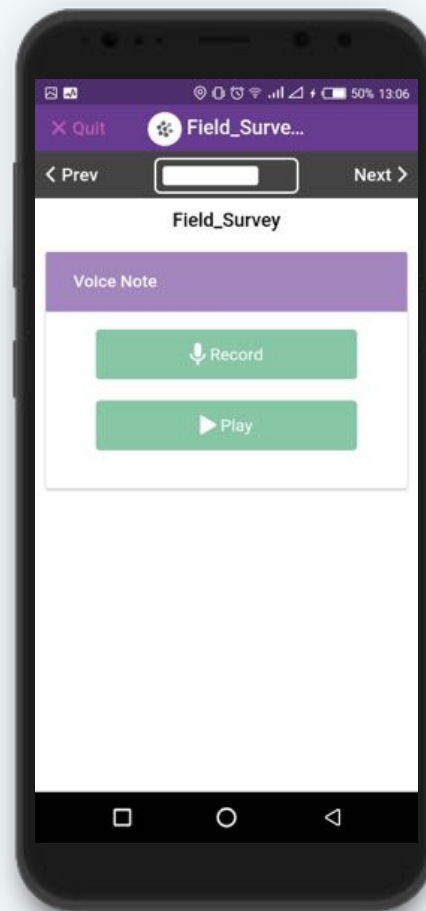


Here (left) we can add a photo. In Devergy's case, agents collect photos of the person being interviewed, the exterior of their house, or other subjects.

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.

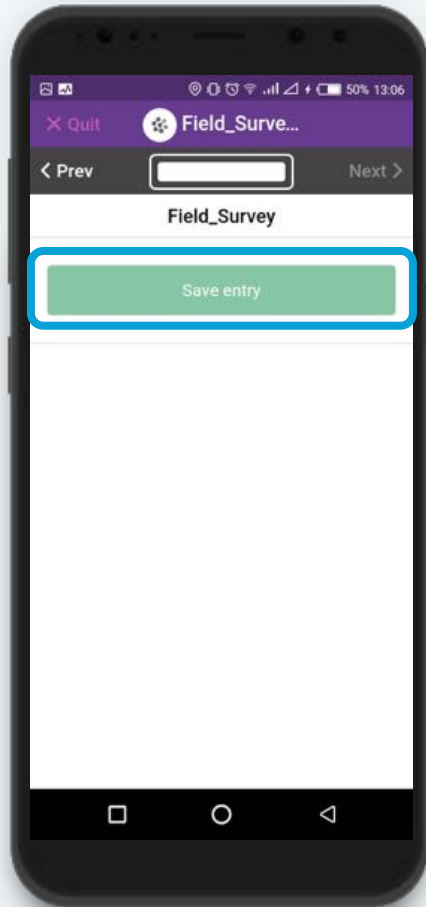


The screenshot shows a mobile app interface for 'Field_Survey'. At the top, there is a purple header bar with a 'Quit' button (a red 'X' icon) and the text 'Field_Surve...'. Below the header, there is a navigation bar with '< Prev', a white input field, and 'Next >'. The main content area is titled 'Field_Survey' and contains a purple box labeled 'Category'. Inside this box, there are three radio button options: 'A', 'B', and 'C'. The bottom of the screen shows the standard Android navigation bar with back, home, and recent apps icons.

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).

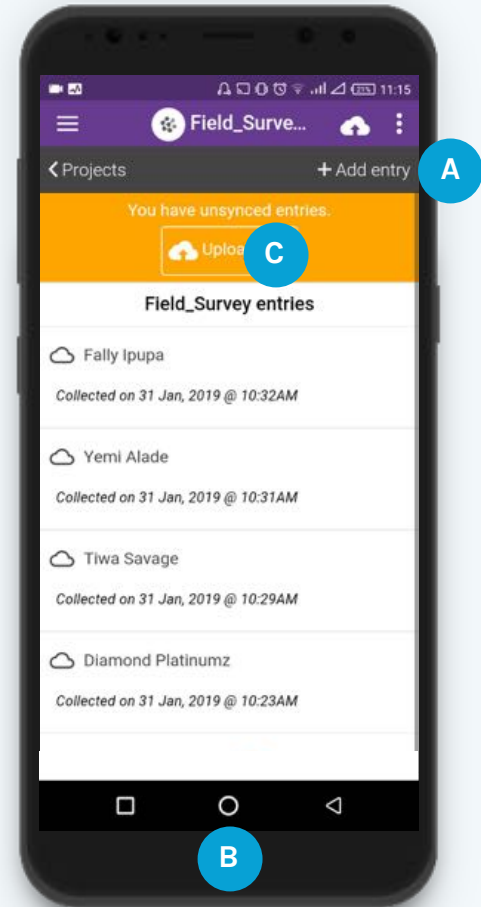
The screenshot shows the same 'Field_Survey' app interface, but at a different screen. The purple header bar and navigation bar are identical. The main content area is titled 'Field_Survey' and contains a purple box labeled 'Callback Number'. Below this box is a light gray text input field with the placeholder text 'Type phone number...'. The bottom of the screen shows the standard Android navigation bar.

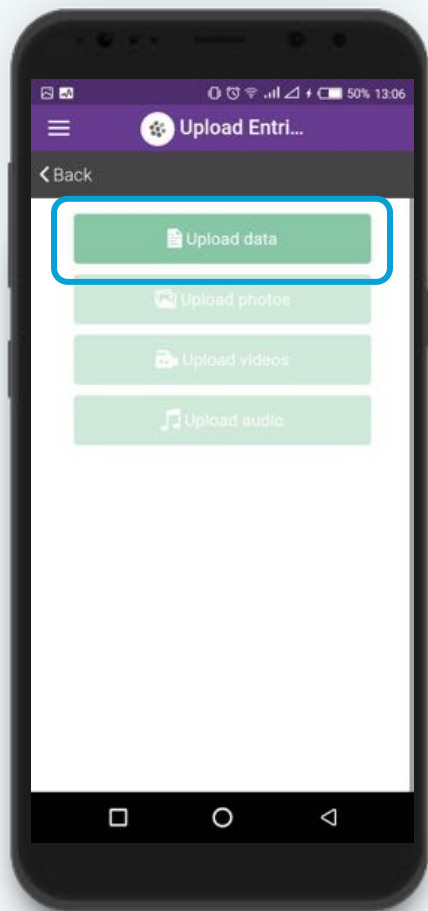


Tap **Save entry**. The survey entry has been recorded on the device, so even without an internet connection, everything is safe.

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.

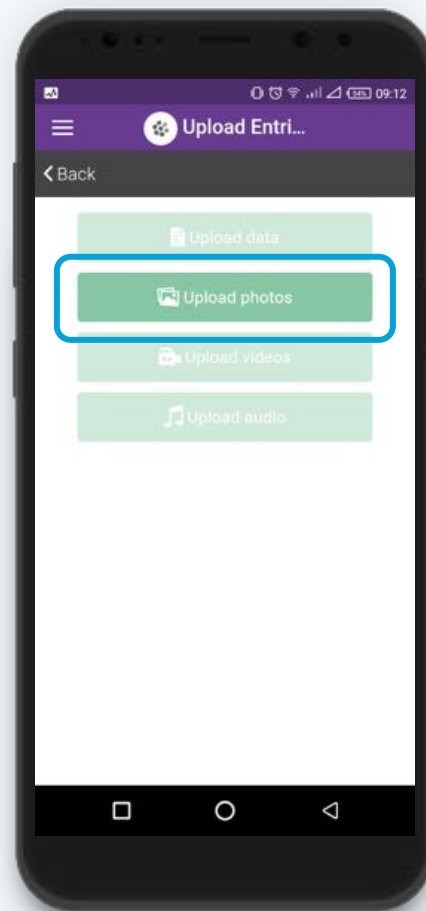




After a user has chosen to **Upload data**, they will be brought to this screen (left).

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.

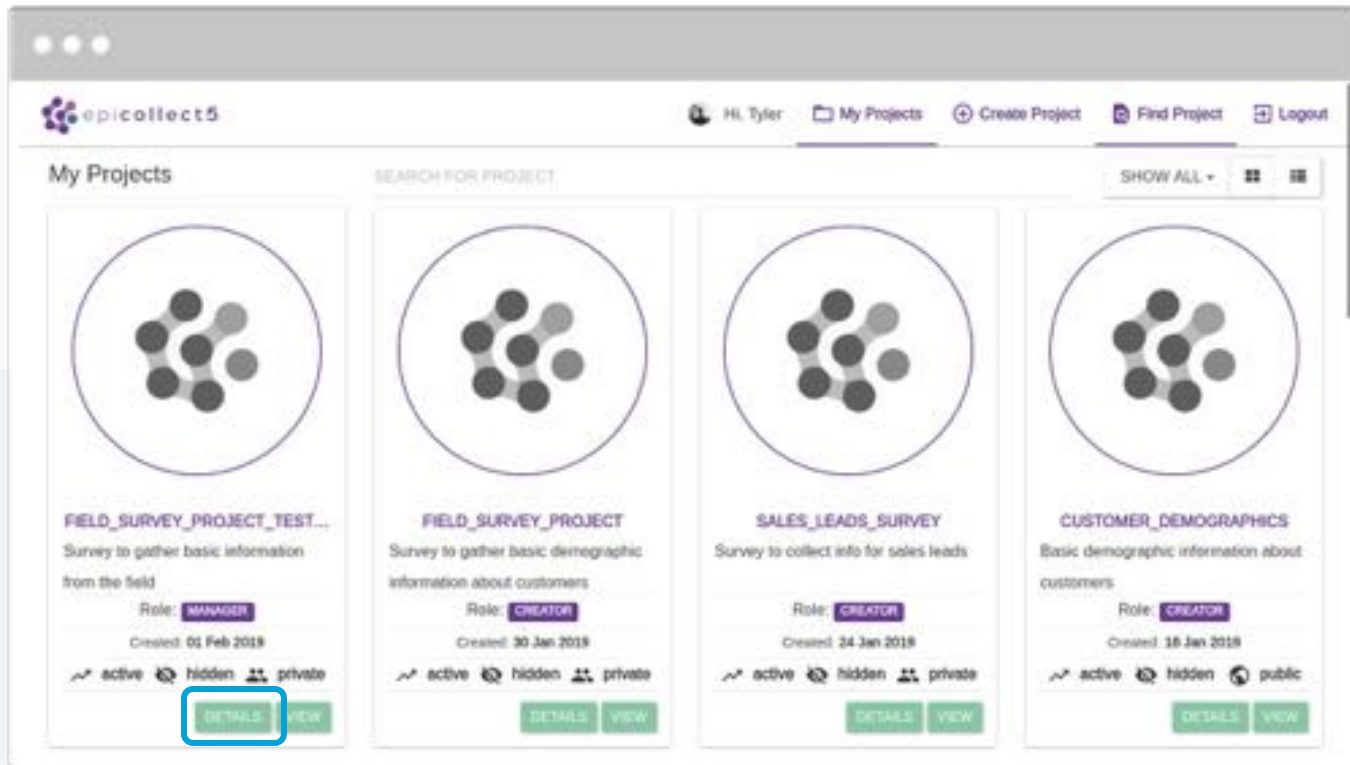


Part Three

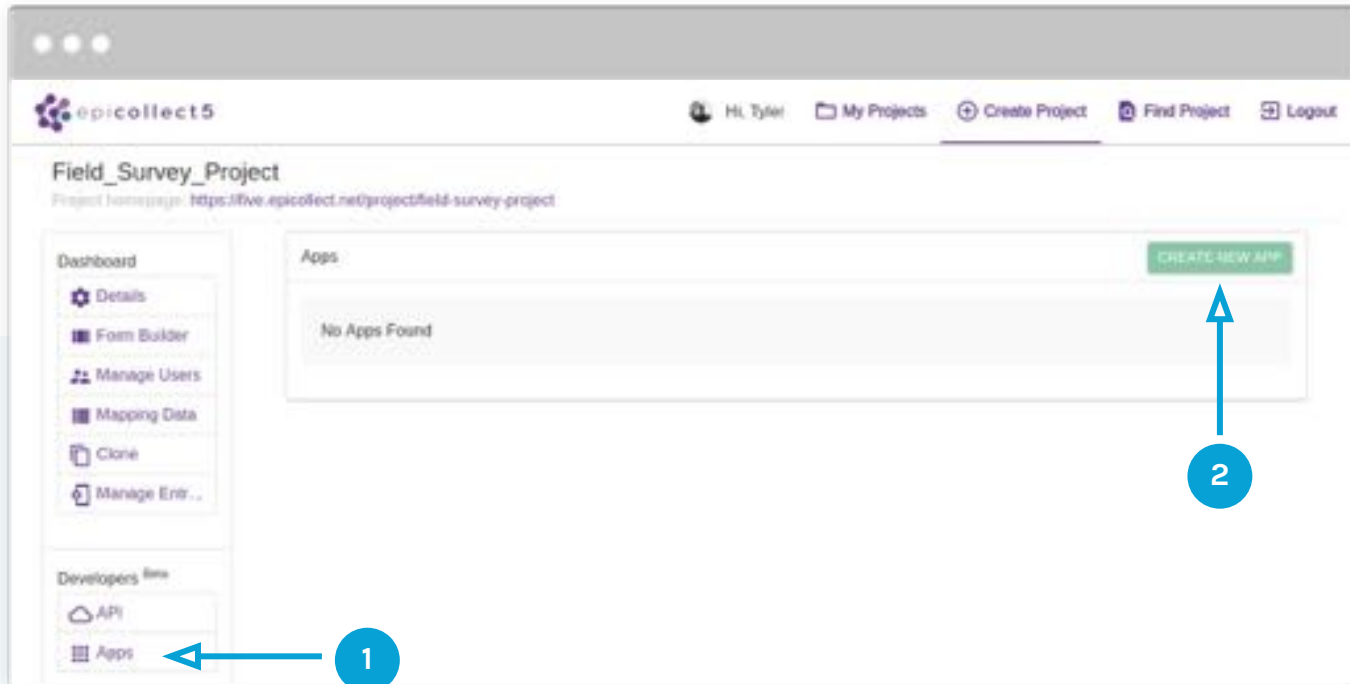
How to integrate survey data for use with Google Sheets



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**.

epicollect5

Hi, Tyler | My Projects | Create Project | Find Project | Logout

Field_Survey_Project

Project homepage: <https://live.epicollect.net/project/field-survey-project>

Dashboard

- Details
- Form Builder
- Manage Users
- Mapping Data
- Clone
- Manage Env...

Developers

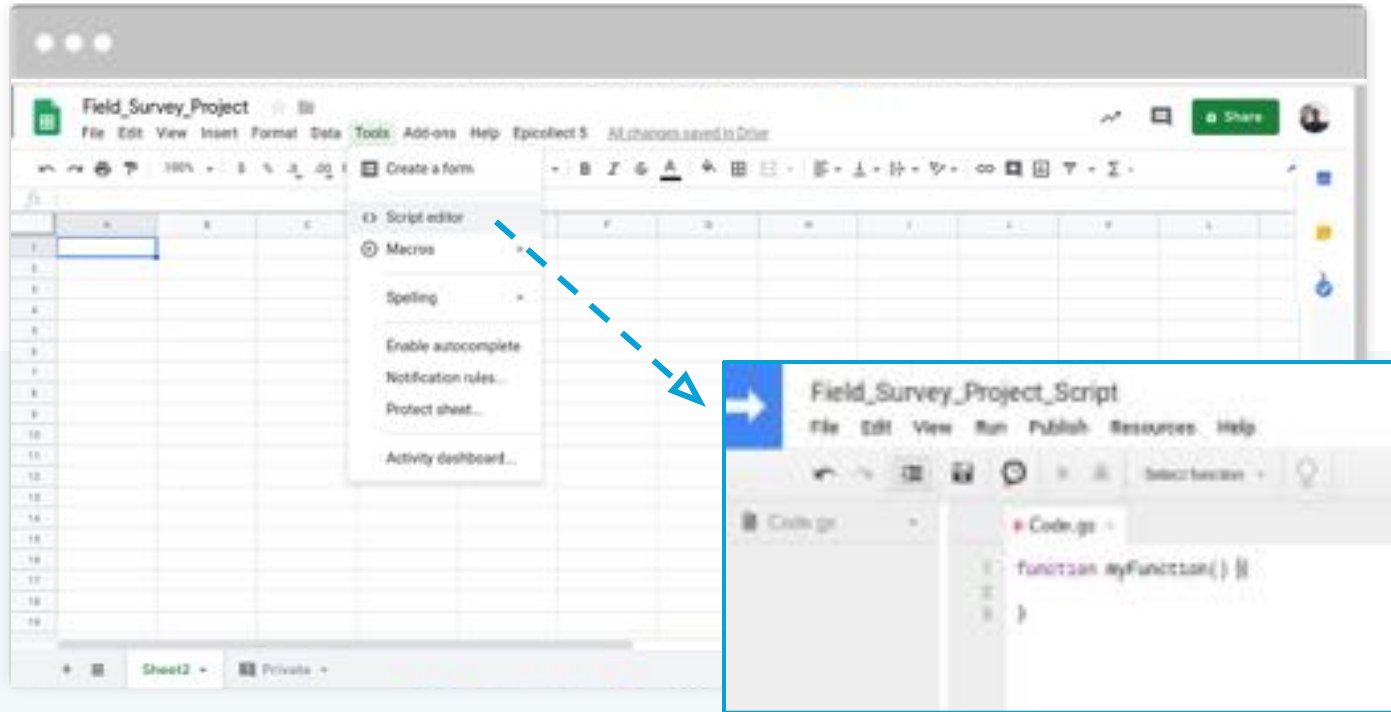
- API
- Apps

Apps

CREATE NEW APP

Name	Client ID	Client Secret	Created At	
Field_Survey_G...Integration	692	3YVZYayySzJxPQ888zwwkZIN93IAHYLIIVLELSK	04/02/2019 07:44	REVOKE TOKEN DELETE

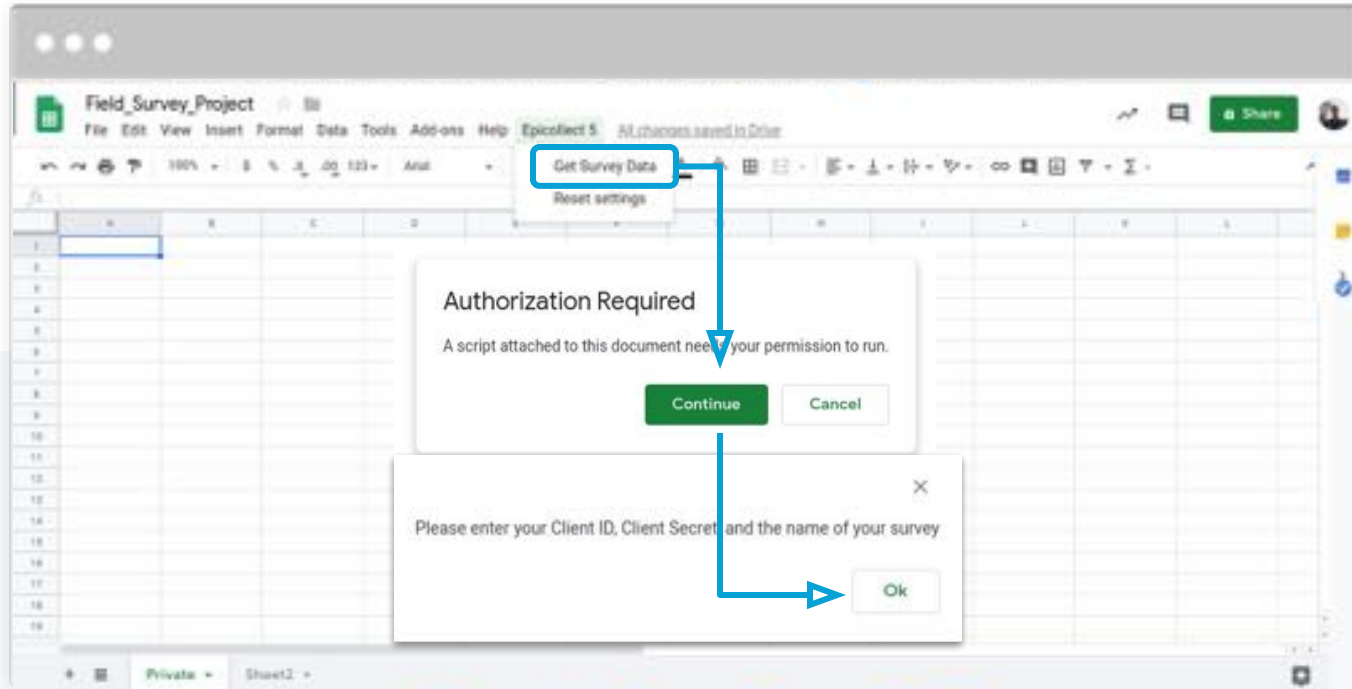
After the app is created, make note of the **Client ID**, **Client Secret**, and the **http version of the project name**. Don't close this browser tab yet! We will be coming back to the information on this page later.



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

Project homepage: <https://live.epicollect.net/project/field-survey-project>

Dashboard

- Details
- Form Builder
- Manage Users
- Mapping Data
- Clone
- Manage Ent...

Apps

Name	Client ID	Client Secret	Created At	
Field_Survey_SS_Registration	677	3CDtKu92hw5MUFSLx9fBuYt0aYzLkmJDkU6LxQi	29/01/2019 08:15	REVOKE TOKEN DELETE

[CREATE NEW APP](#)

Developers beta

- API
- Apps

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

	A	B	C	D	E	F	G	H	I	J	K	L	M
	ec5_usid	created_at	created_by	title	1_GPS_location	1_GPS_location	1_GPS_location	2_Village_Name	3_Location_Type	4_Person_Nam	5_Gender	6_Photo	7_Voice
1	2388c3a-f93-471-2009-01-31T08:5	nyler tesslar@de	Diamond Platinum	13	-8.890594	31.446453	Kenya	Business	Diamond Platinum	Male	2388c3a-f93-471-2009-01-31T08:5		
2	5822f53b-05c-4-4-2009-01-31T07:3	nyler tesslar@de	Fally Ipupa	30	-8.890543	31.446609	Kenya	Business	Fally Ipupa	Male	5822f53b-05c-4-4-2009-01-31T07:3		
3	a5862e95-2629-4-2009-01-31T07:3	nyler tesslar@de	Yemi Alade	4	-8.890542	31.446609	Kenya	Business	Yemi Alade	Female	a5862e95-2629-4-2009-01-31T07:3		
4	40a0538d-c0c6-4-2009-01-31T07:2	nyler tesslar@de	Tina Savage	5	-8.89053	31.446626	Kenya	Business	Tina Savage	Female	40a0538d-c0c6-4-2009-01-31T07:2		
5	d586964-fed8-4-2009-01-31T07:2	nyler tesslar@de	Diamond Platinum	13	-8.890502	31.446525	Kenya	Business	Diamond Platinum	Male	d586964-fed8-4-2009-01-31T07:2		
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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.

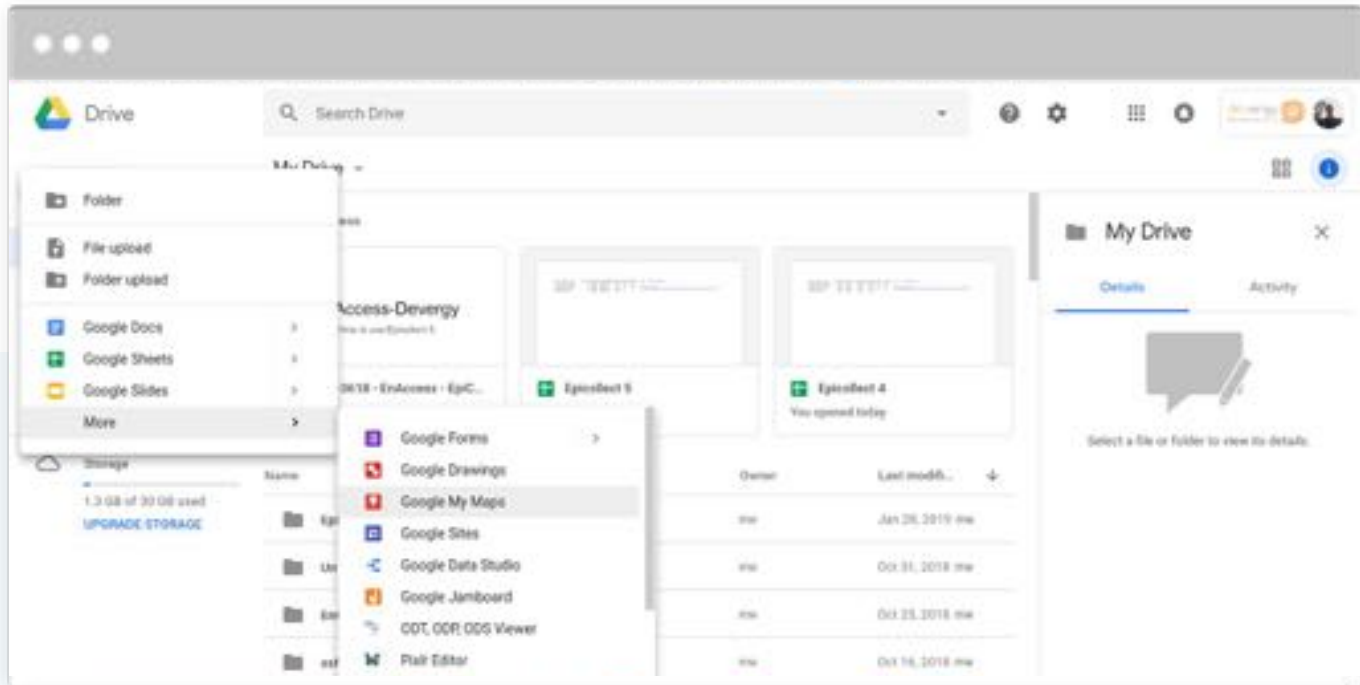
Part Four

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

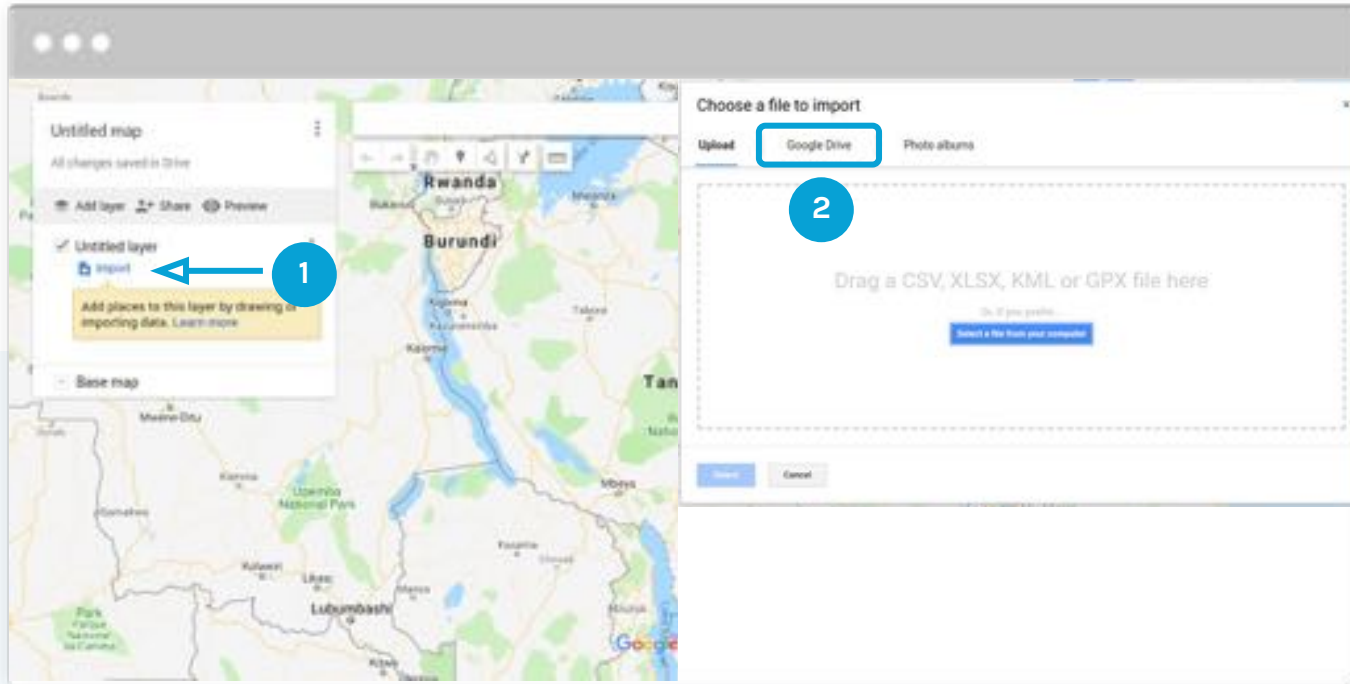


Now that we have data from our survey in a spreadsheet, we'll want to display it in an accessible format. We can map our data using Google My Maps.

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](#)).

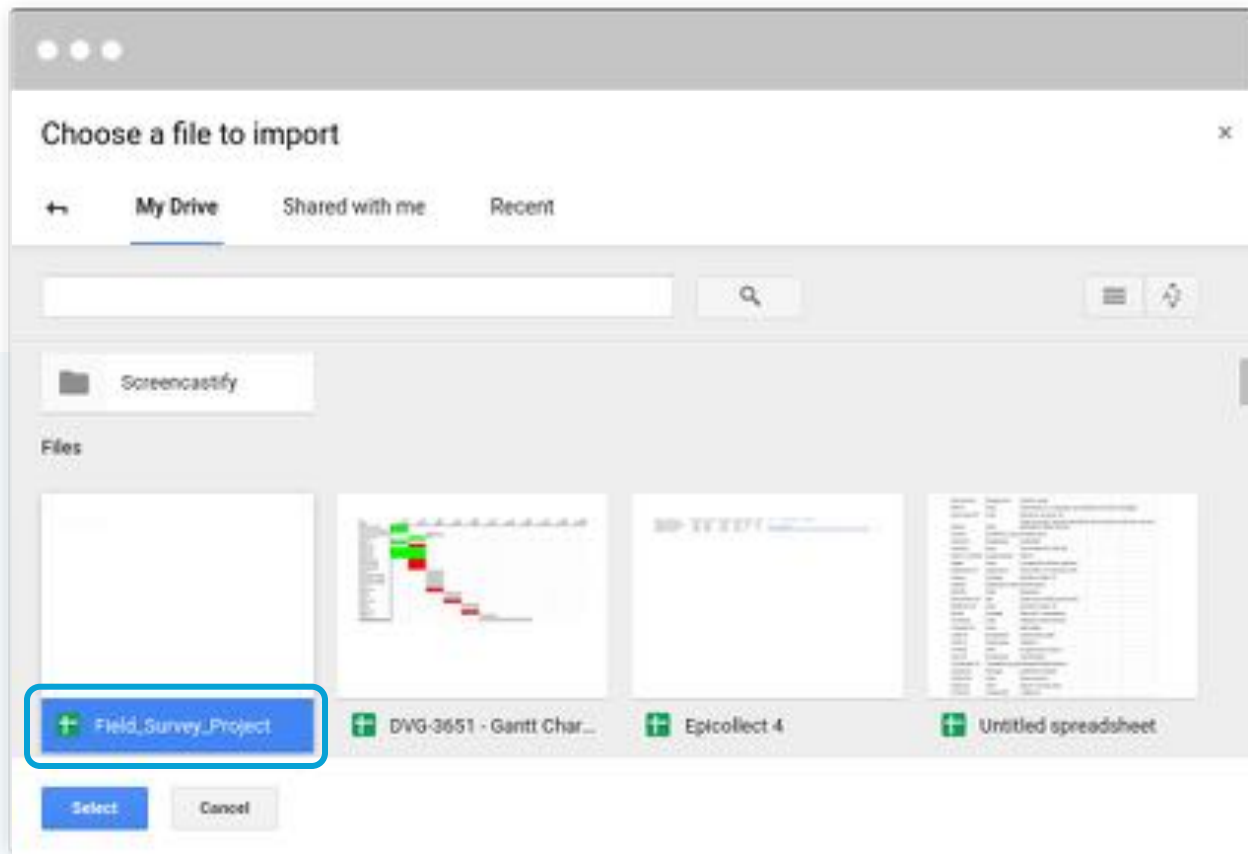


From your Google Drive, open a new [Google My Maps](#) project.

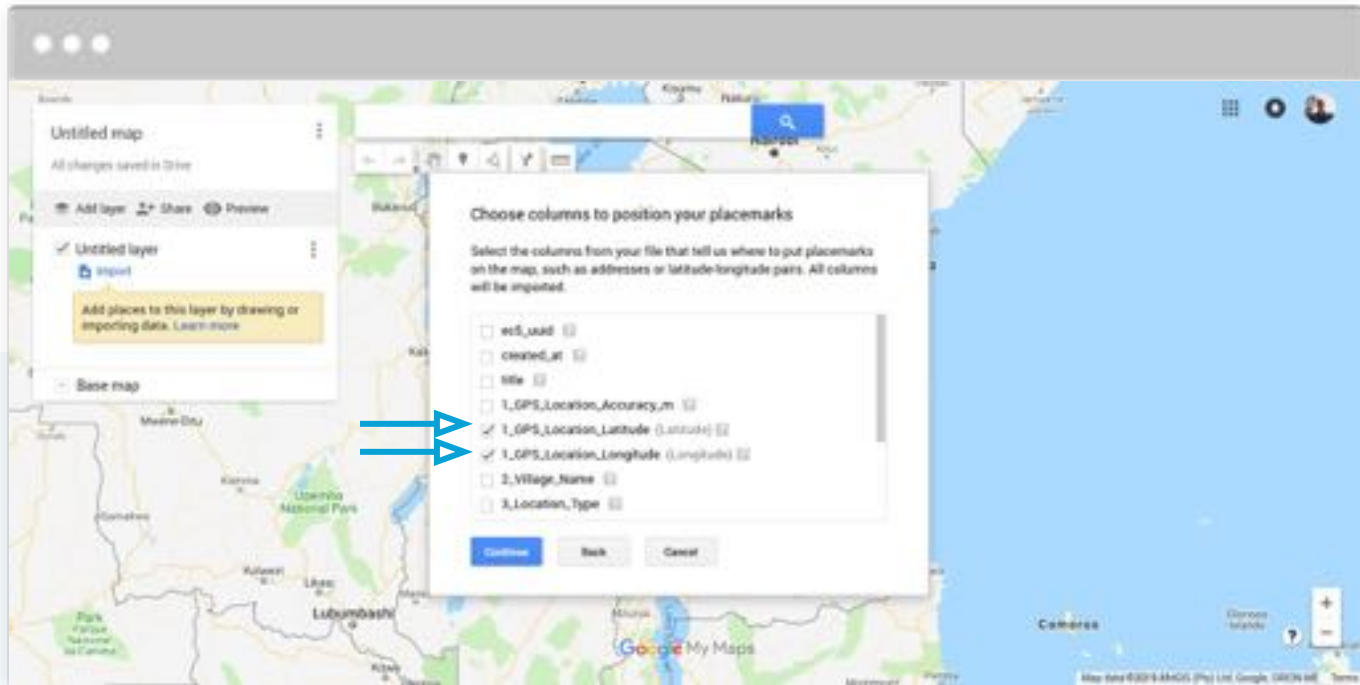


1. Click **Import**
2. Click **Google Drive** to search for files in your Google Drive

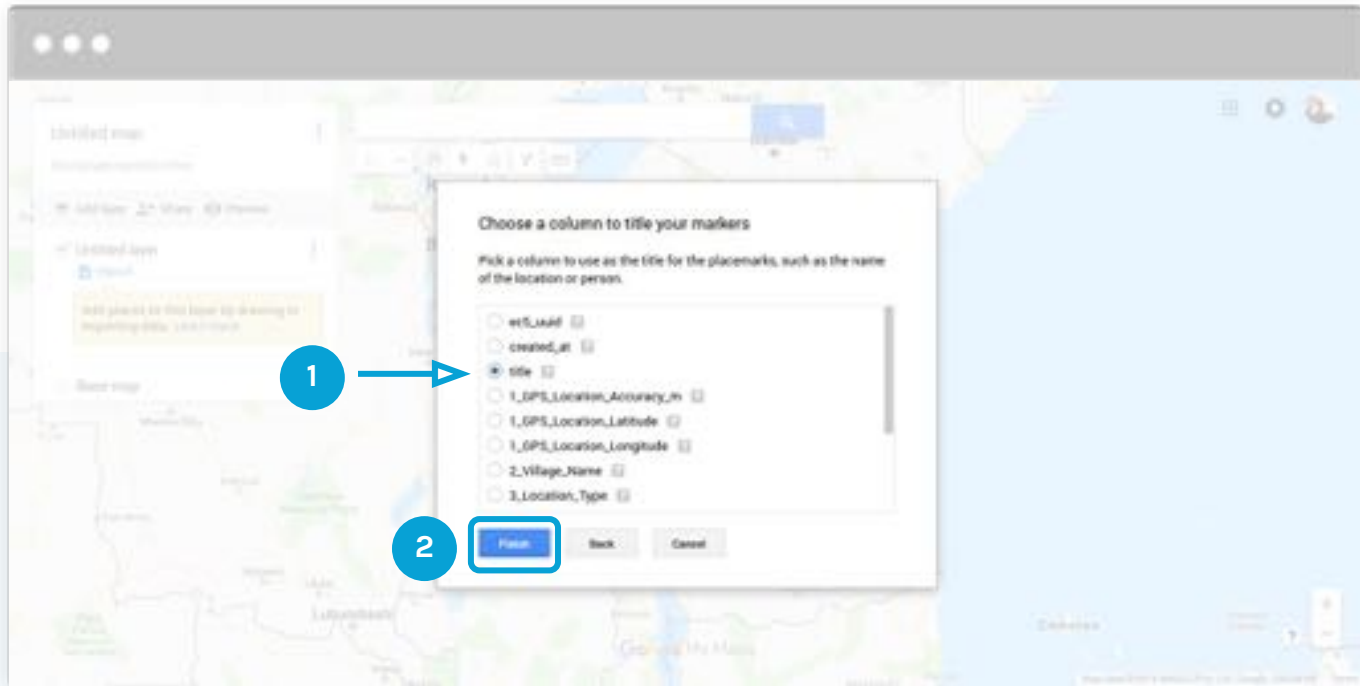
Note: Maps can only pull from the first sheet in your Google Sheets file. Make sure that the data that you want to use is on the Sheet in the first position.



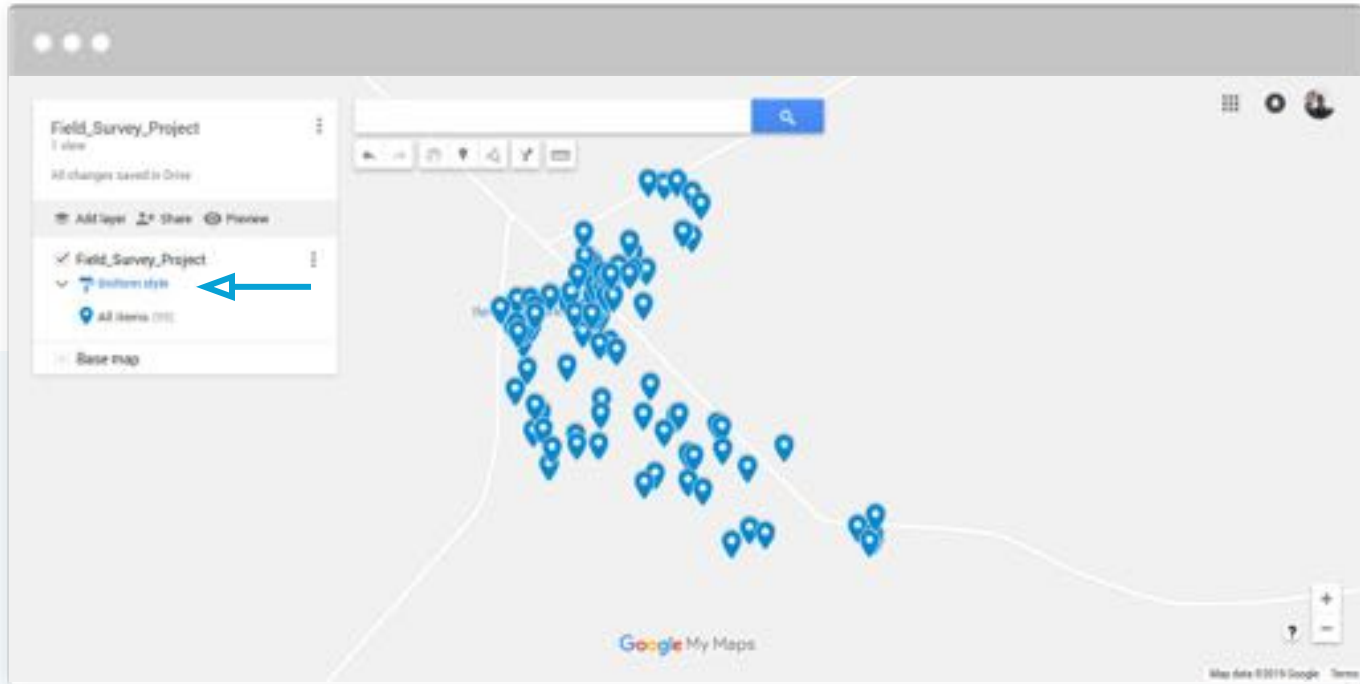
Select the Google Sheets file that contains the data that you would like to display on a map.



Select the Latitude and Longitude pairs.



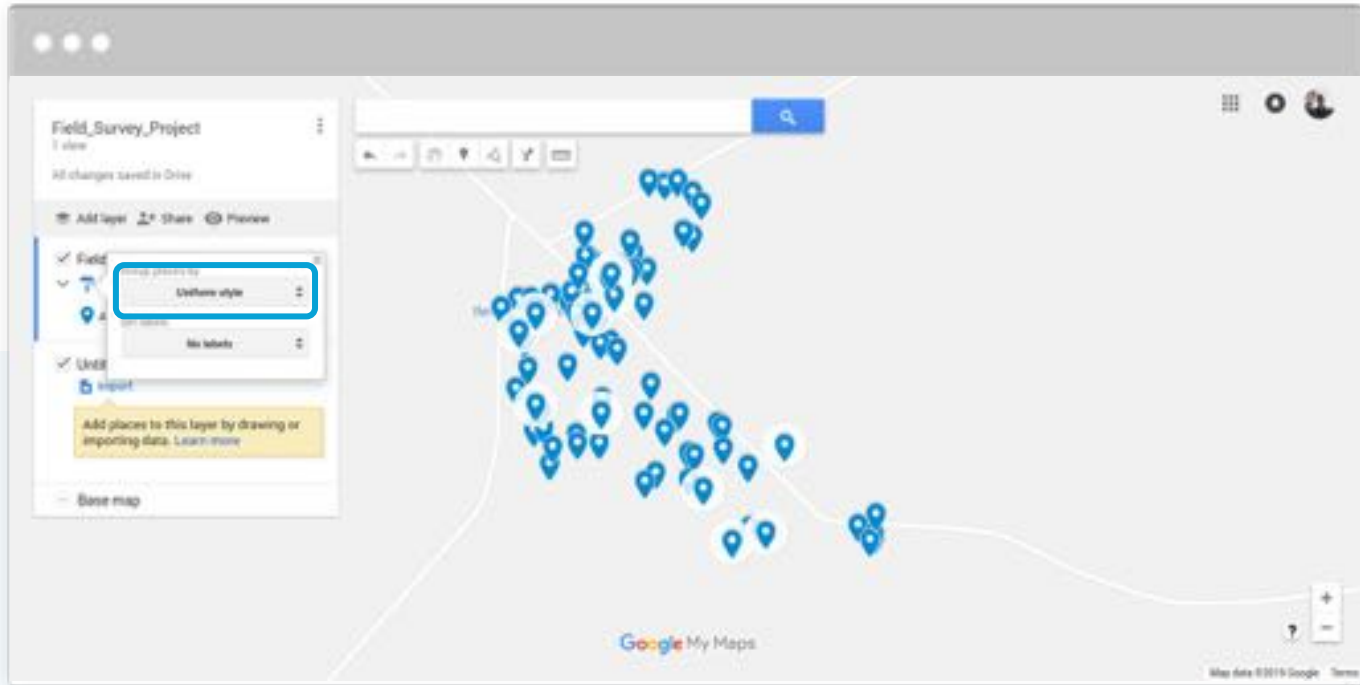
First, select the column that you would like to use for a title and then click **Finish**.



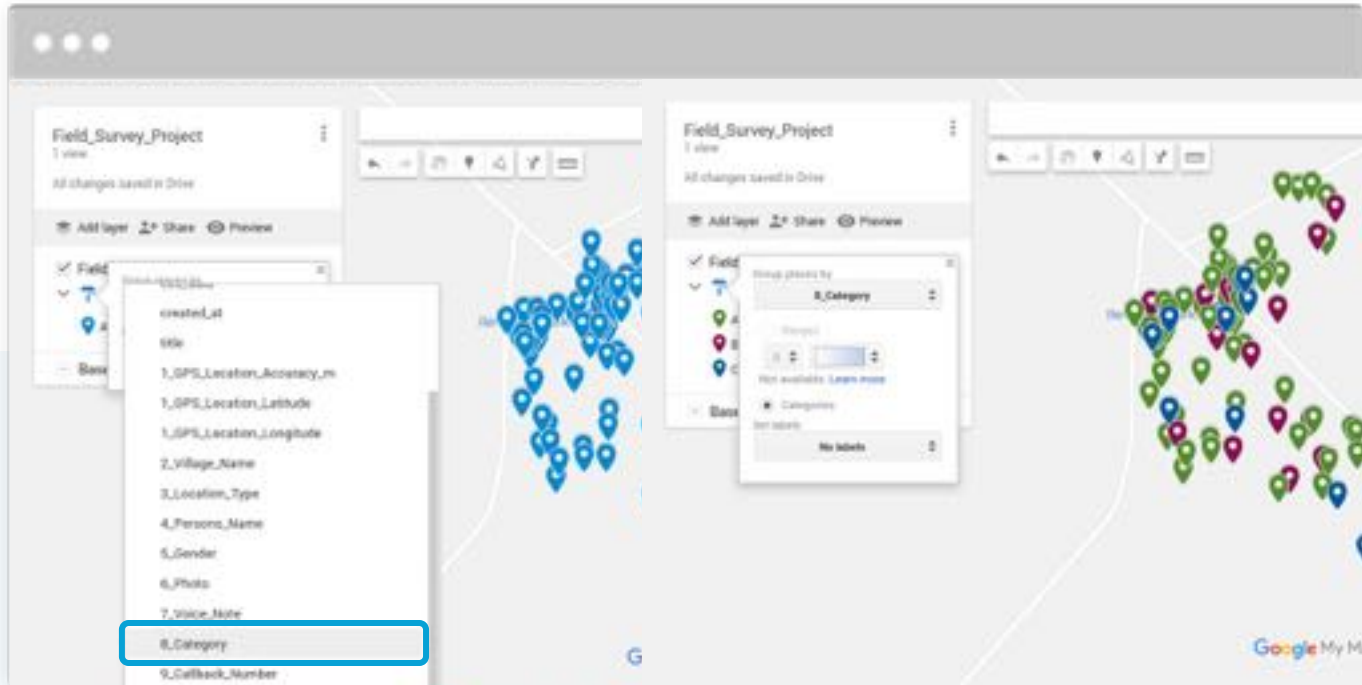
All of the survey entries are now placed on the map. Clicking on each entry will present the data points collected per entry.

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.

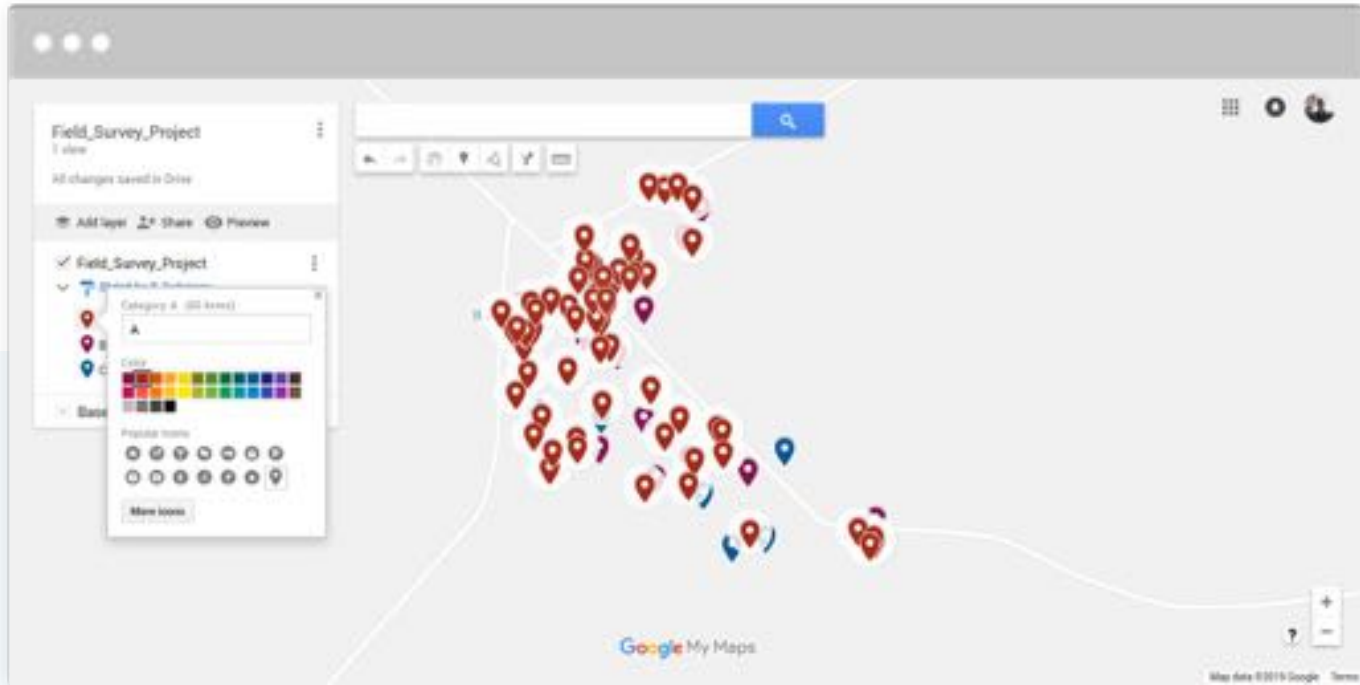
Click on the paint roller icon. This will open a menu.



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.



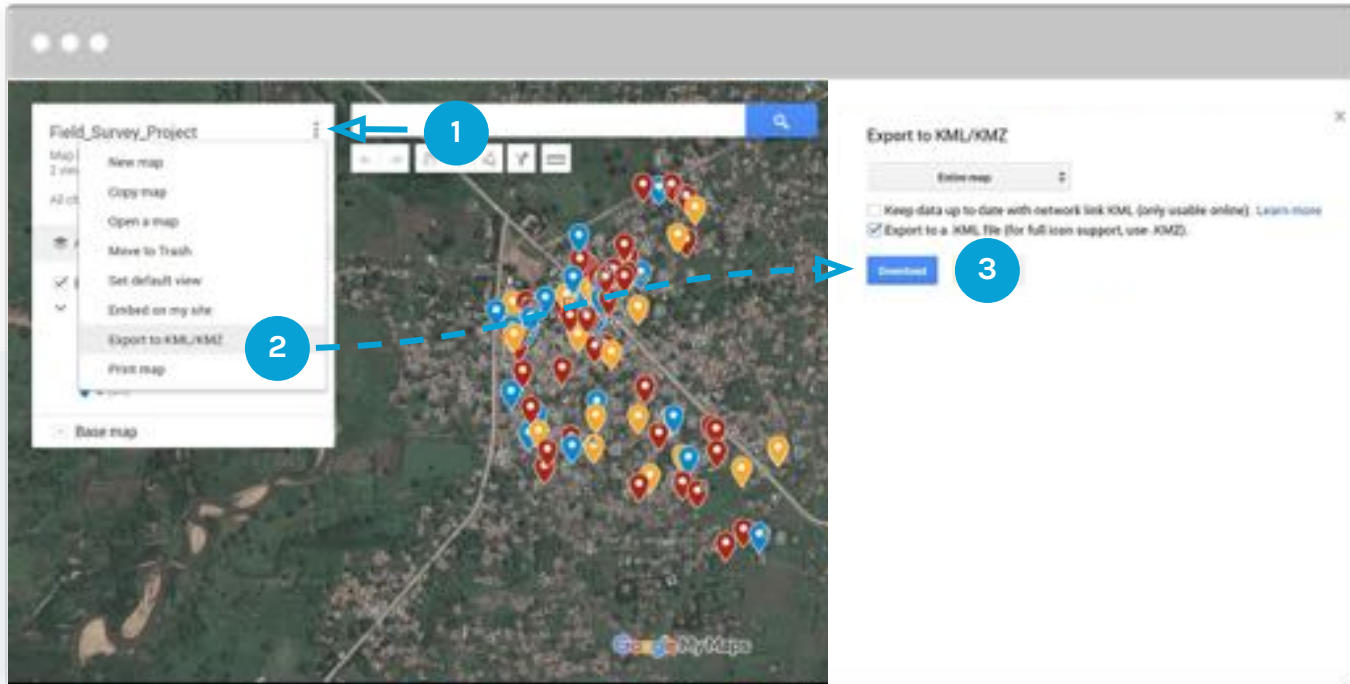
Let's customize the colors of the markers. If we assume that our categories "A", "B", and "C" actually meant "Hot", "Warm", and "Cold" (i.e. in the context of sales leads), we can assign colors per Category. We'll assign red for our Hot leads, orange for our Warm leads, and blue for our Cold leads.



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.

