

ODK to Sheets 101

An Introduction to Mobile data collection

Devaja Shah | 16 Sept, 2019

Slides: bit.ly/2kD46Tg

What we'll cover

★ DATA COLLECTION

- Go outside and collect data

★ DATA VISUALIZATION

- Store & View your data on ODK Aggregate
- Map your data with My Maps, Google Earth

★ FORM CREATION

- Outline your survey form. Define questions.
- Create your own form
- Use Google Sheets as your database



Case studies

Monitoring Polio Vaccination in Somalia



World Health
Organization

#GeoForGood19



Tracking King Cobras in India

Mobile vs Paper surveys



Disaster-proof



Data entry errors



Instant Data Transfer



Cost/Human Resources



Seamless sharing

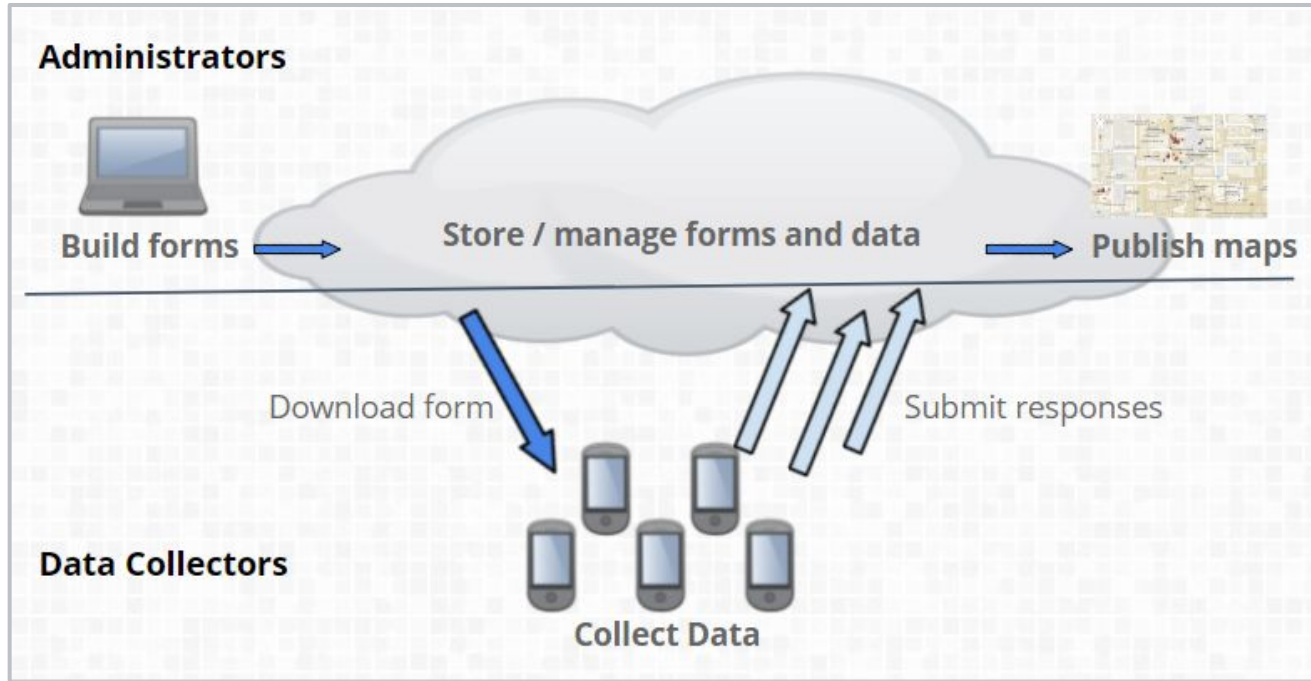


Phone is all you need



Workflow & Tools

Mobile data collection





ODK is a Toolkit ..

10+ tools

ODK 1.0 & ODK-X

Web - PC - Android



ODK Build

Hand Pump Surveyrename | File Edit View Help

What is your name?

name

required

What is the date?

Enter the date you are doing the survey.

date

required

Record the location of Hand Pump 1

location_hp1

Is Hand Pump 1 working?

handpump1

Is the water from Hand Pump 1 drinkable?

waterquality_hp1

Record the location of Hand Pump 2

Properties

Data Name

The data name of this field in the final exported XML.

waterquality_hp2

Caption Text

The name of this field as it is presented to the user.

English

Is the water from Hand Pump 2 drinkable?

Hint

Additional help for this question.

English

Default Value

The value this field is presented with at first.

☐ Read Only

Whether this field can be edited by the end user or not.

☐ Required

Whether this field must be filled in before continuing.

Options

bulk edit

Option 1

English

Yes

Underlying Value

yes

Option 2

English

No

Underlying Value

no

+ Add new

Text

Numeric

Date

Location

Media

Barcode

Choose One

Select Multiple

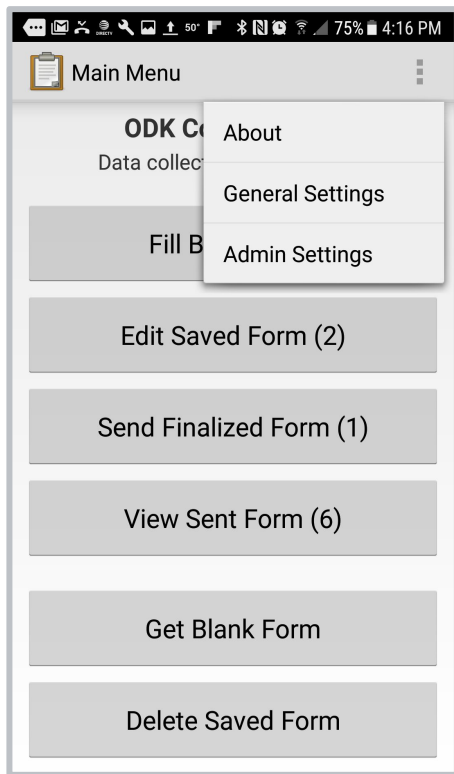
Metadata

Group

Branch

#GeoForGood19


ODK Collect



Data Collection App for Mobile

Android only

ODK Aggregate



Submissions

Form Management

Filter SubmissionsExported Submissions

Form Filter

SaveSave AsDelete


Submissions per page

Filters Applied

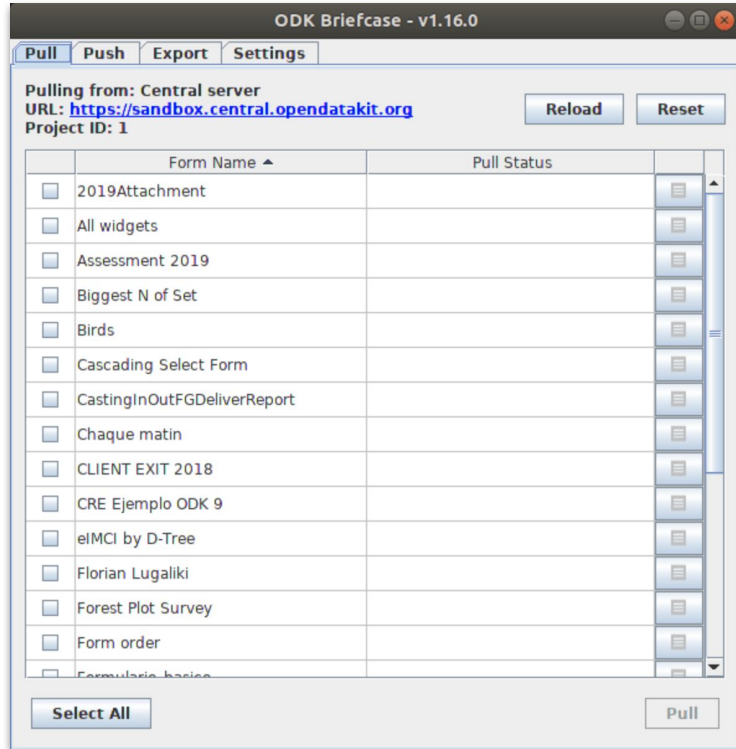
Add Filter

☐ Display Metadata

PreviousFixa de Emigracao (EXT)Next

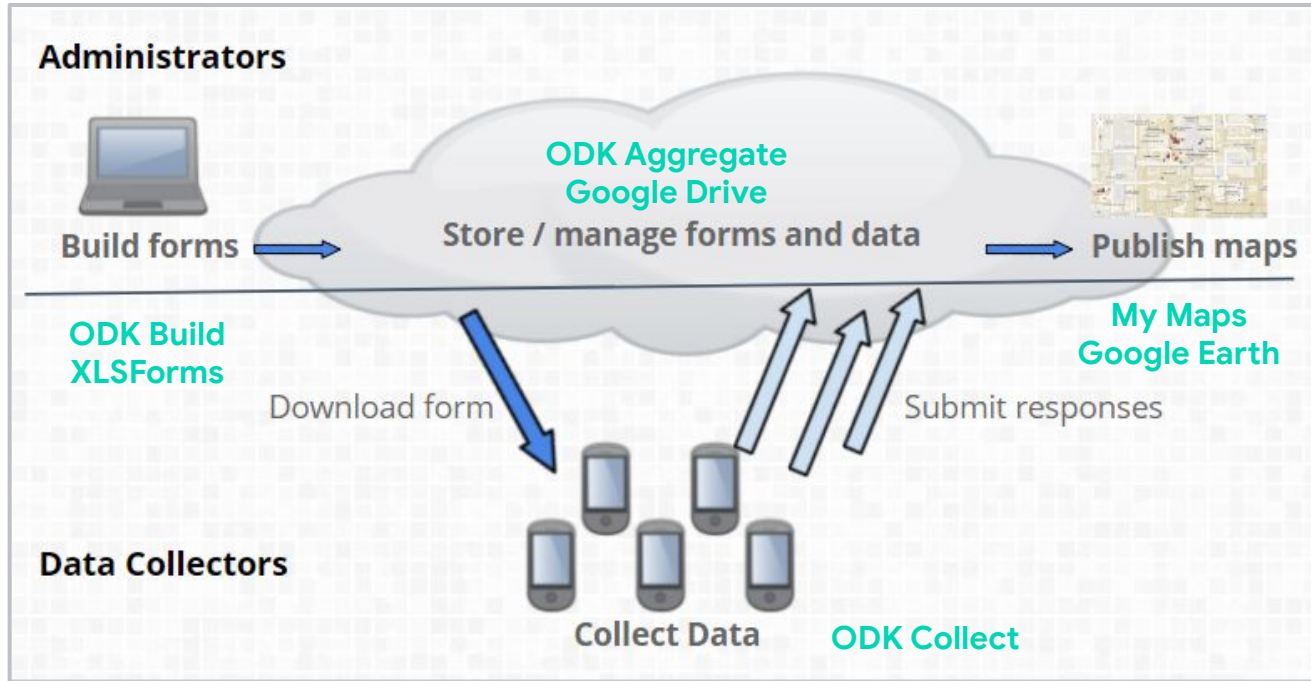
meta InstanceID	Data	ID Localizacao	Nome	AKA	Causa Emigracao	Outra Causa	Data Mudanca	Destino	Chefe Agregado	Dentro ou fora	Inquiridor
 uuid:a8f0d430-8339-4b5c-b1fb-d64cdd102091	Mon Apr 24 00:00:00 UTC 2017	145	Dercio De Jesus R Menete	dmenete	Economica		Sat Apr 01 00:00:00 UTC 2017	Macia	De Jesus Menete	Fora	58
 uuid:1d3a56bd-0a07-47de-a96f-2704e89b5b65	Tue Apr 25 00:00:00 UTC 2017	852	Juvenio dos santos longo		Politica		Tue Apr 25 00:00:00 UTC 2017	Chokwe	O mesmo	Dentro	12

ODK Briefcase



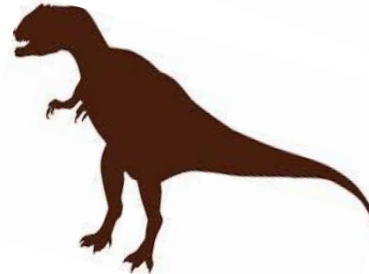
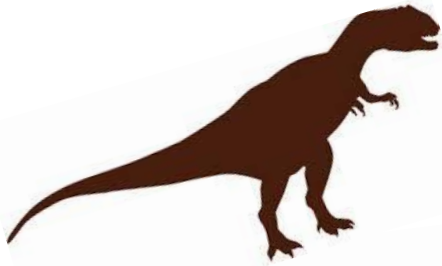
Offline Workflows

MDC with ODK



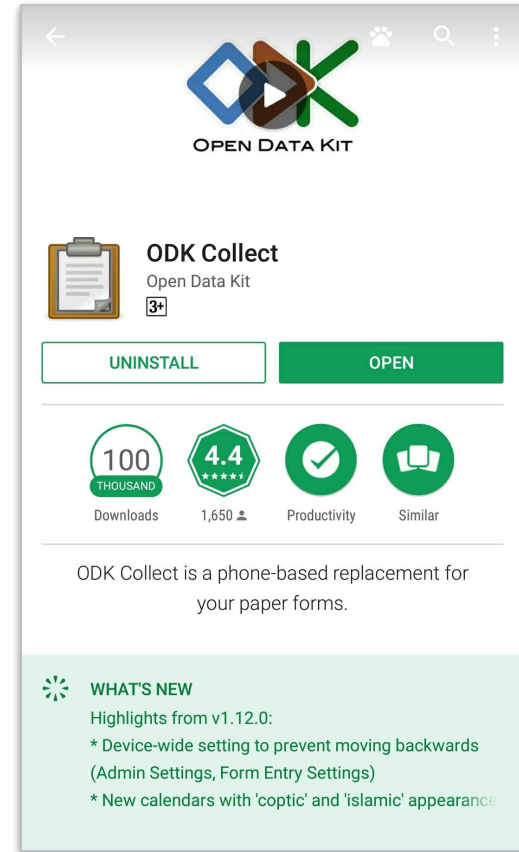
Save the summit from ..

Dinosaur Attack !

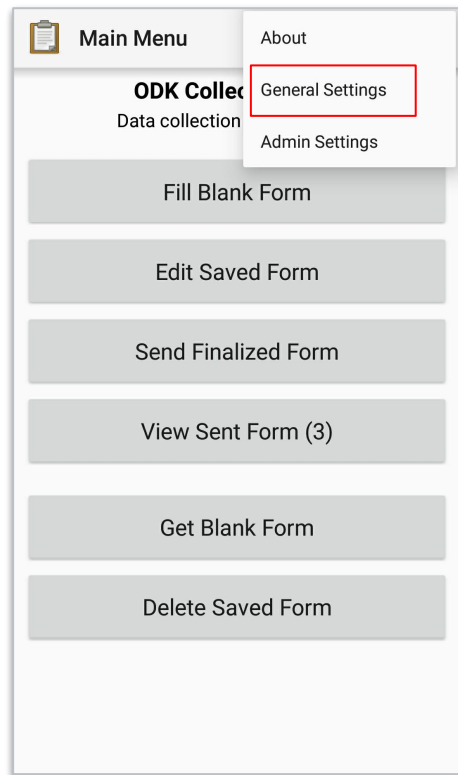


Setup

Download **ODK Collect** from
Google Play Store

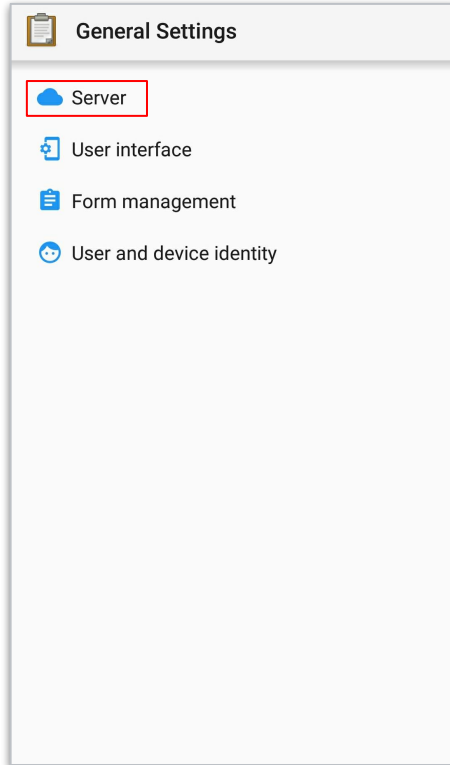


1



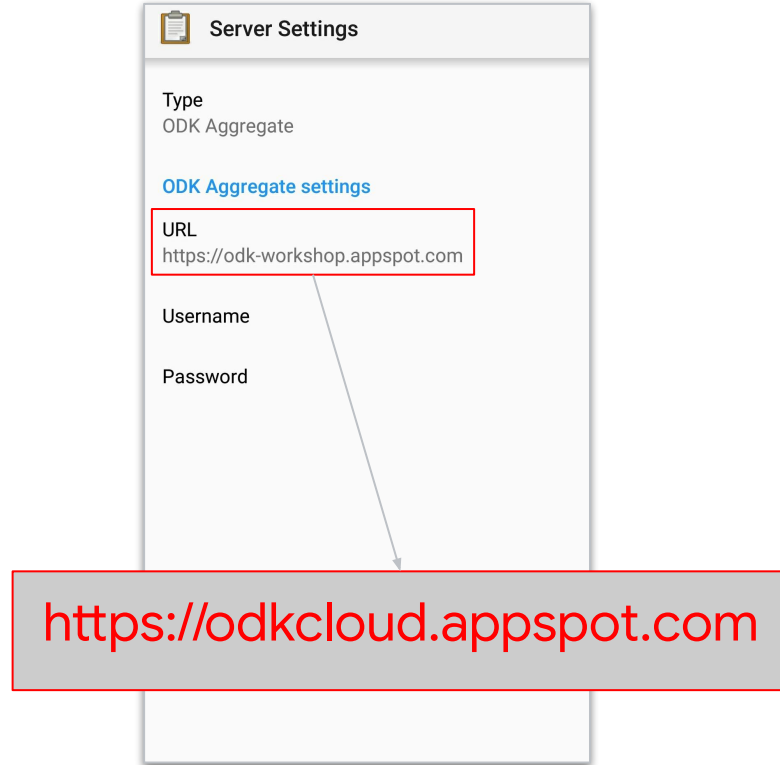
The screenshot shows the 'Main Menu' of ODK Collect. A dropdown menu is open, highlighting 'General Settings' with a red box. The menu options are 'About', 'General Settings', and 'Admin Settings'. Below the menu, there are several buttons: 'Fill Blank Form', 'Edit Saved Form', 'Send Finalized Form', 'View Sent Form (3)', 'Get Blank Form', and 'Delete Saved Form'.

2





The screenshot shows the 'General Settings' screen. The 'Server' option, represented by a cloud icon, is highlighted with a red box. Other options listed are 'User interface', 'Form management', and 'User and device identity'.

3



The screenshot shows the 'Server Settings' screen. The 'URL' field, which contains 'https://odk-workshop.appspot.com', is highlighted with a red box. An arrow points from this field to a larger red box at the bottom of the screen containing the text 'https://odkcloud.appspot.com'. Other fields visible are 'Type' (ODK Aggregate), 'ODK Aggregate settings', 'Username', and 'Password'.

4

 **Main Menu** 

ODK Collect v1.11.1
Data collection made easier...

Fill Blank Form

Edit Saved Form





Send Finalized Form

View Sent Form (3)

Get Blank Form

Delete Saved Form

5

 **Get Blank Form**   

ATREE ODK Field Trip
ID: atree-odk-ft ☐



ODK Dinosaur Survey
ID: odk-dinosaur-survey ☒

ODK Tree Survey
ID: odk-tree-survey ☐

ODK Workshop Feedback
ID: odk_workshop_feedback ☐

Select All Refresh Get Selected

6

 **Main Menu** 

ODK Collect v1.11.1
Data collection made easier...

Fill Blank Form

Edit Saved Form




Send Finalized Form

View Sent Form (3)

Get Blank Form

Delete Saved Form

7

 **Fill Blank Form**  

Finished scanning. All forms loaded.

ODK Dinosaur Survey
Added on Wed, Dec 27, 2017 at 20:30

Field Exercise

- Divide yourselves into small groups.
- Walk around the **center** looking for as many dinosaurs as you can - **10** in total
 - ◆ They can be very tricky to find!
- Swipe right to move to next question
- Click **Save form** and mark as finalized after you've filled out your form
- Fill a **New form** for your next dinosaur and keep repeating the process
- Click on '**Send Saved Form**' once you are back in the room

25
minutes

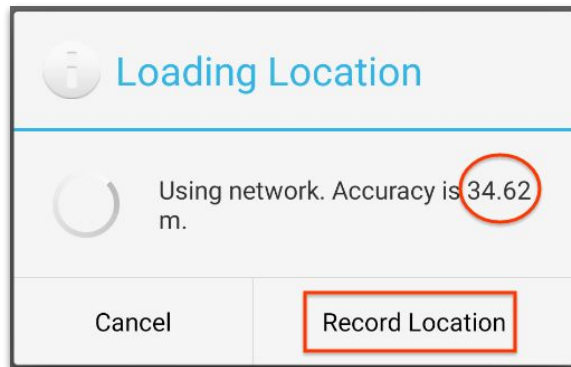
Tips

- **Enable location** on your phone.

You may have to wait for a few minutes to get the first GPS fix.

Ideal accuracy is under **15m**

- If your accuracy doesn't improve after waiting a few minutes, Press the '**Record Location**' button.
- Try it offline! Turn **cellular** & **wifi** off on your phone.





Visualize data

Analytics & Storing Data

ODK [Aggregate](#)

Google [Sheets](#)

Mapping data

Google [My Map](#)

Google [Earth](#)





Form Building

Do you have a survey form?

Ideally no more than 10 Questions!

Play around with different **types** of **data**
e.g. text, numeric, multiple choice etc.

Is there a flow to the **form**?

Is there data needing **validation**?

A form in your native language?

A close-up photograph of a medical survey form titled "Family History" in a blue header. The form contains multiple-choice questions with "Yes", "No", and "DK = don't know" options. A hand holding a red pen is visible on the right side, about to fill out the form. The text on the form includes "Family History", "DK = don't know", "members had the following?", "cholesterol/takes cholesterol medication", and "Pediatrics".

Hands-on Activity

Create a form for your use case with ODK Build

If you can't think of one use our [sample form](#) for the activity

Follow-along if you can

Learn how to create different **types** of questions, **form logic**, **data validation**

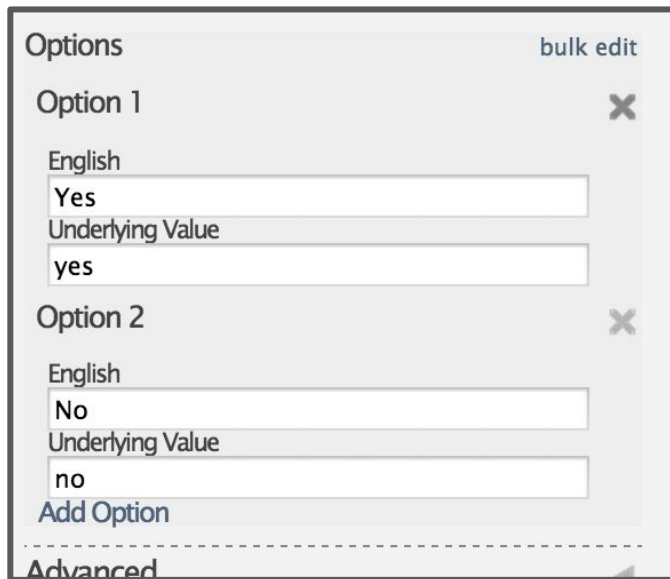
Step-by-step implementation in the slides

Creating a form in ODK Build

1. Go to build.opendatakit.org. Sign up for an account to start using.
2. Click on the 'Add New' button to select the question type at the BOTTOM of the page to add questions
3. Add a text question
 - a. **Data Name:** name of the question in xform syntax which is for internal identification purposes, like a variable name. Not visible to the user.
Use all lowercase & no special characters, no spaces. ex. "name"
 - b. **Label:** the question as it will appear to the user. For example, type "Enter your name"
4. Now try adding in questions of different **data types**: numeric, location, media, groups, barcode and play around with the **data options** feature

Creating choice type questions

1. Add a Single-select or Multiple-select question
2. Give it a label and a name.
3. Click Options and specify the English and underlying value (for xform).







The screenshot shows a configuration panel titled 'Options' with a 'bulk edit' link in the top right corner. The panel contains two option entries, 'Option 1' and 'Option 2', each with a close button (X) to its right. For 'Option 1', the 'English' label is 'Yes' and the 'Underlying Value' is 'yes'. For 'Option 2', the 'English' label is 'No' and the 'Underlying Value' is 'no'. At the bottom of the panel is a blue 'Add Option' link. A dashed line separates this section from an 'Advanced' section below it.

Option	English	Underlying Value
Option 1	Yes	yes
Option 2	No	no


[Add Option](#)

Advanced

Using your form with Google Sheets

1. Go to [Google Sheets](#). Sign in with your Google account.
2. Create a new blank spreadsheet and name it '**Submission Responses**'
3. Click on  button. Click on Get shareable link 
4. Click on **Advanced** button and select  **On - Public on the web**
Anyone on the Internet can find and access. No sign-in required.
5. Against **Access: Anyone (no sign-in required)** change it to **Can edit** ▼
6. Click on  and copy the URL above.
7. Go to **ODK Build**. Go to **Edit-> Form Properties**
8. Enter the spreadsheet link you copied earlier under **Submission URL**.

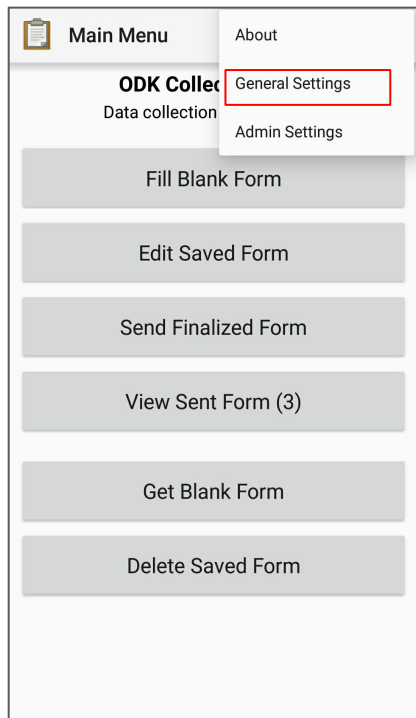
Sharing your form

1. Go to **File** -> **Save** to save the form created in **Build**
2. Click on **Export as XML**. The **XML file** will be downloaded to your computer.
3. Upload this **XML file** into your **Google Drive**
4. Click on the  button for the **XML file** and click on **Sharing Settings**
5. Add in **Email IDs** of surveyors under **People** to share your Form with them.

Tip: Make sure surveyors sign in to the ODK collect app with the same Gmail id that they provided you for sharing the form with them.

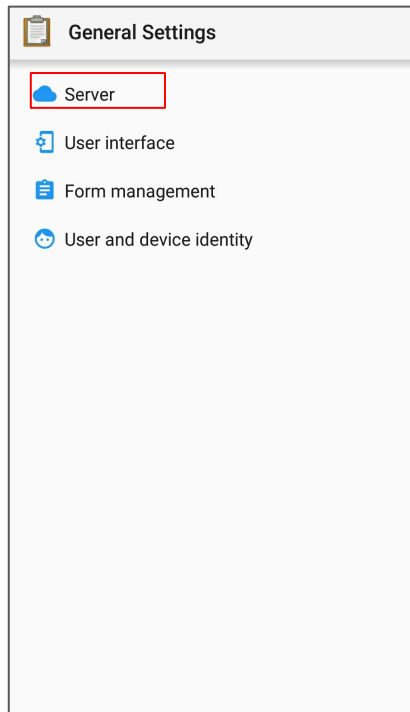
Access your ODK Build form in Collect

1



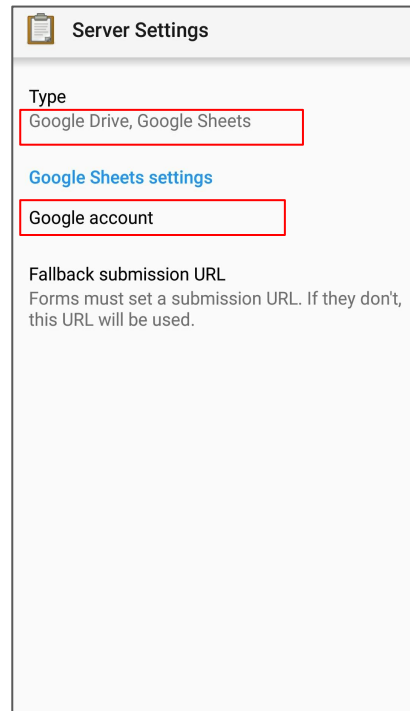
The screenshot shows the 'Main Menu' of ODK Collect. At the top, there is a 'Main Menu' header with a clipboard icon. Below it, a dropdown menu is open, showing 'About', 'General Settings' (highlighted with a red box), and 'Admin Settings'. The main menu contains several buttons: 'Fill Blank Form', 'Edit Saved Form', 'Send Finalized Form', 'View Sent Form (3)', 'Get Blank Form', and 'Delete Saved Form'. The 'ODK Collect' logo and 'Data collection' text are also visible.

2



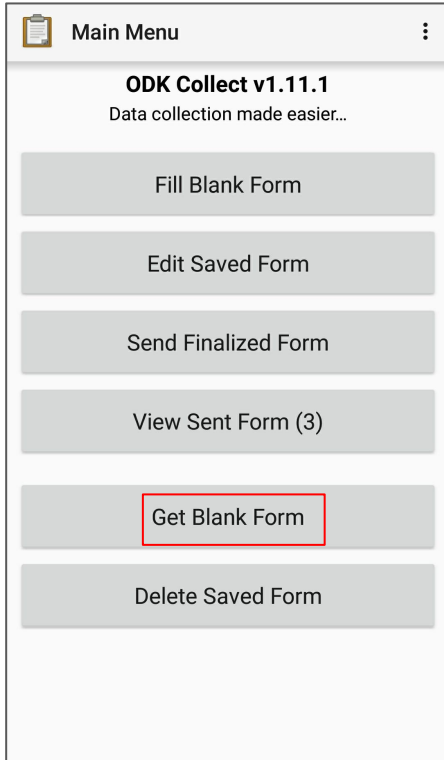
The screenshot shows the 'General Settings' screen. At the top, there is a 'General Settings' header with a clipboard icon. Below it, there are four settings items: 'Server' (highlighted with a red box), 'User interface', 'Form management', and 'User and device identity'. Each item has a small icon to its left.

3



The screenshot shows the 'Server Settings' screen. At the top, there is a 'Server Settings' header with a clipboard icon. Below it, there are three sections: 'Type' (with a dropdown menu showing 'Google Drive, Google Sheets' highlighted with a red box), 'Google Sheets settings' (with a link to 'Google account' highlighted with a red box), and 'Fallback submission URL' (with a text description: 'Forms must set a submission URL. If they don't, this URL will be used.').

4

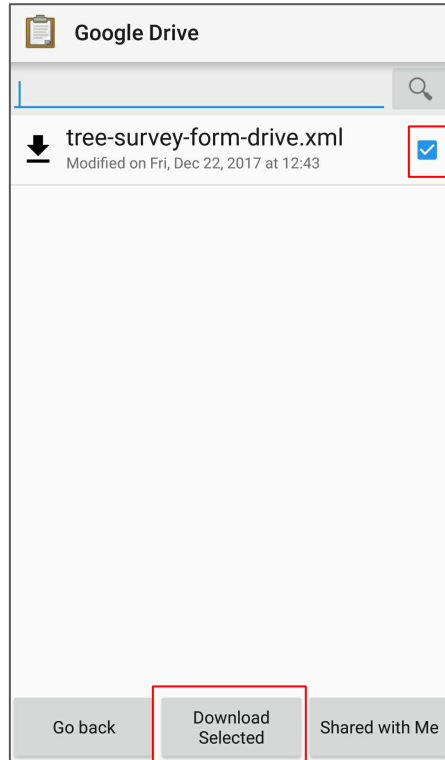


Main Menu

ODK Collect v1.11.1
Data collection made easier...

- Fill Blank Form
- Edit Saved Form
- Send Finalized Form
- View Sent Form (3)
- Get Blank Form
- Delete Saved Form

5

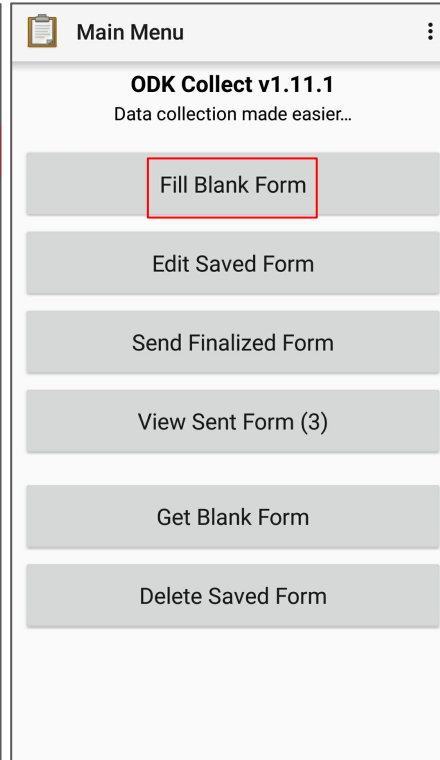


Google Drive

tree-survey-form-drive.xml
Modified on Fri, Dec 22, 2017 at 12:43

Go back Download Selected Shared with Me

6

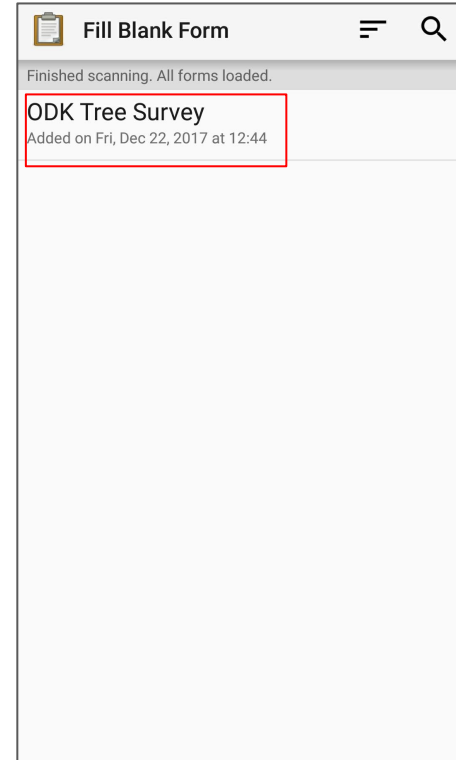


Main Menu

ODK Collect v1.11.1
Data collection made easier...

- Fill Blank Form
- Edit Saved Form
- Send Finalized Form
- View Sent Form (3)
- Get Blank Form
- Delete Saved Form

7



Fill Blank Form

Finished scanning. All forms loaded.

ODK Tree Survey
Added on Fri, Dec 22, 2017 at 12:44

Deploy your ODK Project

★ **Google Drive (Sheets)**

★ **ODK Aggregate**

★ **ODK Briefcase**

Google Drive (Sheets)

Pros

- Easy setup. No server configuration
- Free of cost
- Ideal for single user or small groups

Cons

- Limitations (no support for repeated fields, audio and video)
- Outputs only to Google Spreadsheets

ODK Aggregate

Pros

- Flexible and powerful
- Fully automated management of your data collection
- Ideal for projects involving multiple people

Cons

- Requires a little technical knowhow (well documented)
- Free for most use cases, but may cost money

ODK Briefcase

Pros

- No server setup
- Completely offline solution
- Ideal for projects where there is absolutely no connectivity

Cons

- Manual process to copy data from devices
- Output as a CSV and raw media

Bulleterd list

- Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Basic text

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Next Steps

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- 2 Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- 3 Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- 4 Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Next Steps



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adipiscing elit.



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adipiscing elit.



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adipiscing elit.



Lorem ipsum dolor sit
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adipiscing elit.



Pull your Pens Out!

Try to fill out answers to the questions on your survey

Don't have a form? Share your neighbour's form or try ours.

Is there a right way to answer? Wrong Answers to the question?

How easy was your form to fill out?

[Link to Our Form](#)

Now try to think of a 100 people doing this!

How would you do it?

How would you analyze all the data?

ODK Build

Let's build our own digital form!

ODK Build

ODK Build is a basic online form builder for ODK Collect.

Visit:
build.opendatakit.org

The screenshot displays the ODK Build web interface for creating a survey form titled "Hand Pump Survey". The interface includes a top navigation bar with "File", "Edit", "View", and "Help" options. The main area shows a vertical stack of survey questions, each with a unique icon and a close button (X) in the top right corner. The questions are:

- What is your name?** (Icon: ABC) with data name "name" and "required" status.
- What is the date?** (Icon: Calendar) with a hint "Enter the date you are doing the survey.", data name "date", and "required" status.
- Record the location of Hand Pump 1** (Icon: Globe) with data name "location_hp1".
- Is Hand Pump 1 working?** (Icon: Gears) with data name "handpump1".
- Is the water from Hand Pump 1 drinkable?** (Icon: Water drop) with data name "waterquality_hp1".
- Record the location of Hand Pump 2** (Icon: Globe) - partially visible at the bottom.

On the right side, the "Properties" panel is open for the selected question "Is the water from Hand Pump 1 drinkable?". It shows the following settings:

- Data Name:** waterquality_hp2
- Caption Text:** Is the water from Hand Pump 2 drinkable?
- Hint:** Additional help for this question.
- Default Value:** The value this field is presented with at first.
- Read Only:** ☐ Whether this field can be edited by the end user or not.
- Required:** ☐ Whether this field must be filled in before continuing.
- Options:** bulk edit
 - Option 1:** English: yes, Underlying Value: yes
 - Option 2:** English: No, Underlying Value: no

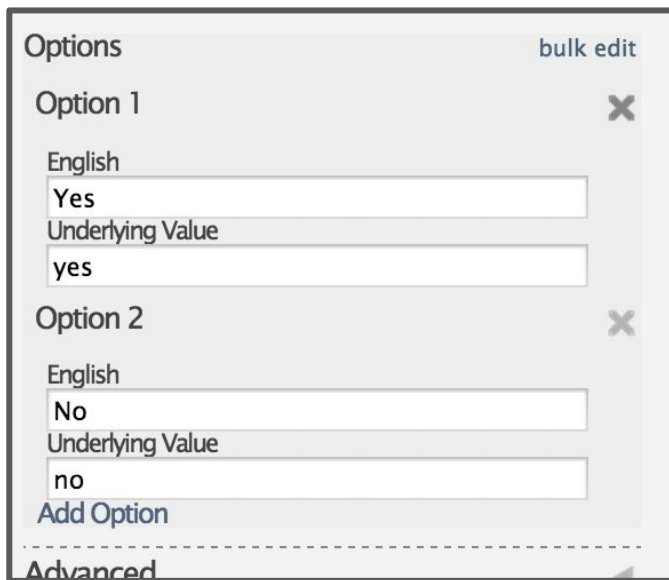
The bottom of the interface features a toolbar with a "+ Add new" button and various field types: Text, Numeric, Date, Location, Media, Barcode, Choose One, Select Multiple, Metadata, Group, and Branch.

ODK Build: How to Create a Form

1. Go to build.opendatakit.org
2. Create an account
3. Click on the 'Add New' button to select the question type at the BOTTOM of the page to add questions
4. Add a text question
 - a. Data Name: name of the question in xform syntax which is for internal identification purposes, like a variable name. Not visible to the user.
Use all lowercase and no special characters, no spaces. ex. "name"
 - b. Label: the question as it will appear to the user. For example, type "Enter your name"
5. Add in more questions of different data types: numeric, location, media, groups, barcode

Questions with multiple choices

1. Add a Single-select or Multiple-select question
2. Give it a label and a name.
3. Click Options and specify the English and underlying value (for xform).



The screenshot shows a panel titled 'Options' with a 'bulk edit' link in the top right corner. The panel contains two options, 'Option 1' and 'Option 2', each with a close button (X) to its right. For each option, there are two input fields: 'English' and 'Underlying Value'. For 'Option 1', the 'English' field contains 'Yes' and the 'Underlying Value' field contains 'yes'. For 'Option 2', the 'English' field contains 'No' and the 'Underlying Value' field contains 'no'. At the bottom of the panel is a link labeled 'Add Option'. Below the panel, a dashed line separates it from a section labeled 'Advanced'.

Options [bulk edit](#)

Option 1 ✕

English
Yes

Underlying Value
yes

Option 2 ✕

English
No

Underlying Value
no

[Add Option](#)

Advanced

Let's get our hands dirty!

Hands-on with ODK Build

What do I do with my form now?


We spread the love!

After your form is built

1. Go to Google Sheets: <https://docs.google.com/spreadsheets/u/0/>
2. Sign in with your Google account
3. Create a new blank spreadsheet and name it '**My Form's Results**'
4. Click on the **Share** button -> click on '**Get Shareable Link**'
5. Click on **More** button and click on '**Public on the Web**'
6. Under '**Access:Anyone** (no sign-in required)' change it to '**Can Edit**'
7. Click on **Save** button and copy the URL
8. Go to **ODK Build**
9. Go to **Edit-> Form Properties**
10. Enter the spreadsheet link you copied earlier under **Submission URL**.

This means anyone with access to your form and trying to submit responses will be added to the blank spreadsheet you just created

Saving & Sharing your Form

1. Go to **File** -> **Save** and save the form you created in **Build**
2. Click on **Export as XML**
3. An **XML file** will be downloaded to your computer
4. Upload this **XML file** into your **Google Drive**
5. Click on the  button for the **XML file** and click on **Sharing Settings**
6. Add in **Email Addresses** of your surveyors under **People** to share your Form with those people.

The form is now shared with all your surveyors!

Make sure they sign in to the ODK collect app with the same Gmail id that they provided you for sharing the form with them.





How can I use my own form with ODK Collect?

Drive + Sheets setup

Google Drive + Sheets


Pros

- Easy setup. No server configuration
- Free
- Ideal for single user or small groups

Cons

- Limitations (no support for repeated fields, audio and video)
- Outputs only to Google Spreadsheets

1

 **Main Menu**

About

General Settings

Admin Settings

ODK Collect
Data collection

Fill Blank Form

Edit Saved Form


Send Finalized Form


View Sent Form (3)


Get Blank Form


Delete Saved Form


2

 **General Settings**


 **Server**

 User interface

 Form management

 User and device identity

3

 **Server Settings**

Type



Google Drive, Google Sheets

Google Sheets settings

Google account

Fallback submission URL
Forms must set a submission URL. If they don't, this URL will be used.

4

 Main Menu 

ODK Collect v1.11.1
Data collection made easier...

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5

 Google Drive

tree-survey-form-drive.xml
Modified on Fri, Dec 22, 2017 at 12:43





Go back

Download Selected

Shared with Me

6

 Main Menu 

ODK Collect v1.11.1
Data collection made easier...

Fill Blank Form

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7

 Fill Blank Form  

Finished scanning. All forms loaded.

ODK Tree Survey
Added on Fri, Dec 22, 2017 at 12:44

Now try filling out your own form!

And see the submissions trickle into your spreadsheet.

Recap the Process

ODK Build -> ODK Collect -> Google Sheets

Administrators



Build forms



Google Drive

Store / manage forms and data



Publish maps

ODK Build

**My Maps
Fusion Tables**

Download form



Data Collectors



Collect Data

ODK Collect

Submit responses



Broader ODK Toolkit

What other options are out there?

ODK 1.0 Toolkit

- **ODK Build** - Tools for authoring forms.
- **ODK Collect** - Android app for collecting field data
- **ODK Aggregate** - Store the field data and extract it to various formats
- **ODK Briefcase** - Serverless and completely offline way to manage forms and data
- ***ODK Form Uploader***
- ***ODK Validate***
- ***ODK Sensors Framework***

ODK Aggregate

Pros

- Flexible and powerful
- Fully automated management of your data collection
- Ideal for projects involving multiple people

Cons

- Requires a little technical knowhow (well documented)
- Free for most use cases, but may cost money

ODK Briefcase

Pros

- No server setup
- Completely offline solution
- Ideal for projects where there is absolutely no connectivity

Cons

- Manual process to copy data from devices
- Output as a CSV and raw media

Deployment Options

ODK Aggregate (Server setup using AWS, GAE with support for Fusion Tables)

Google Drive + Sheets

ODK Briefcase

Commercial Services (ona.io, SurveyCTO etc)