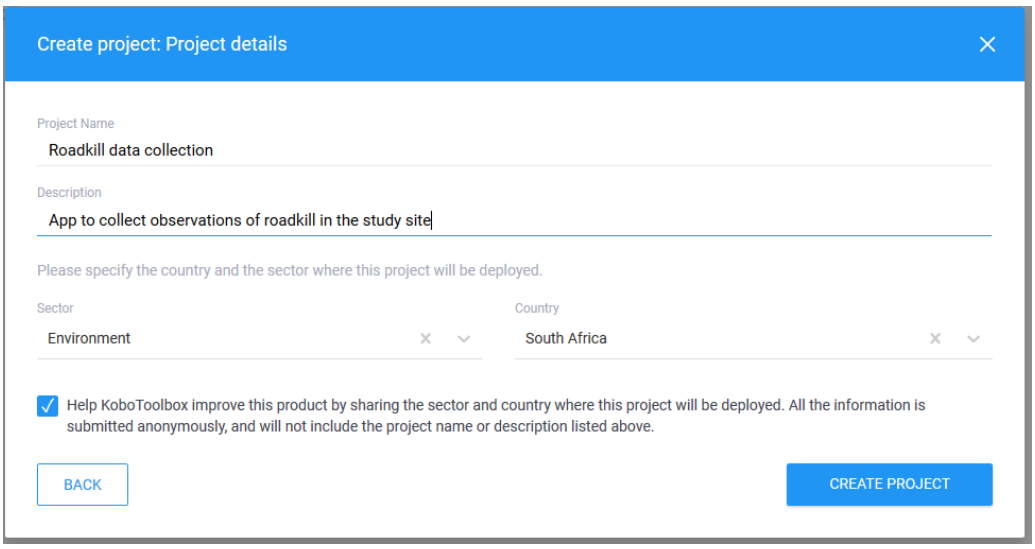
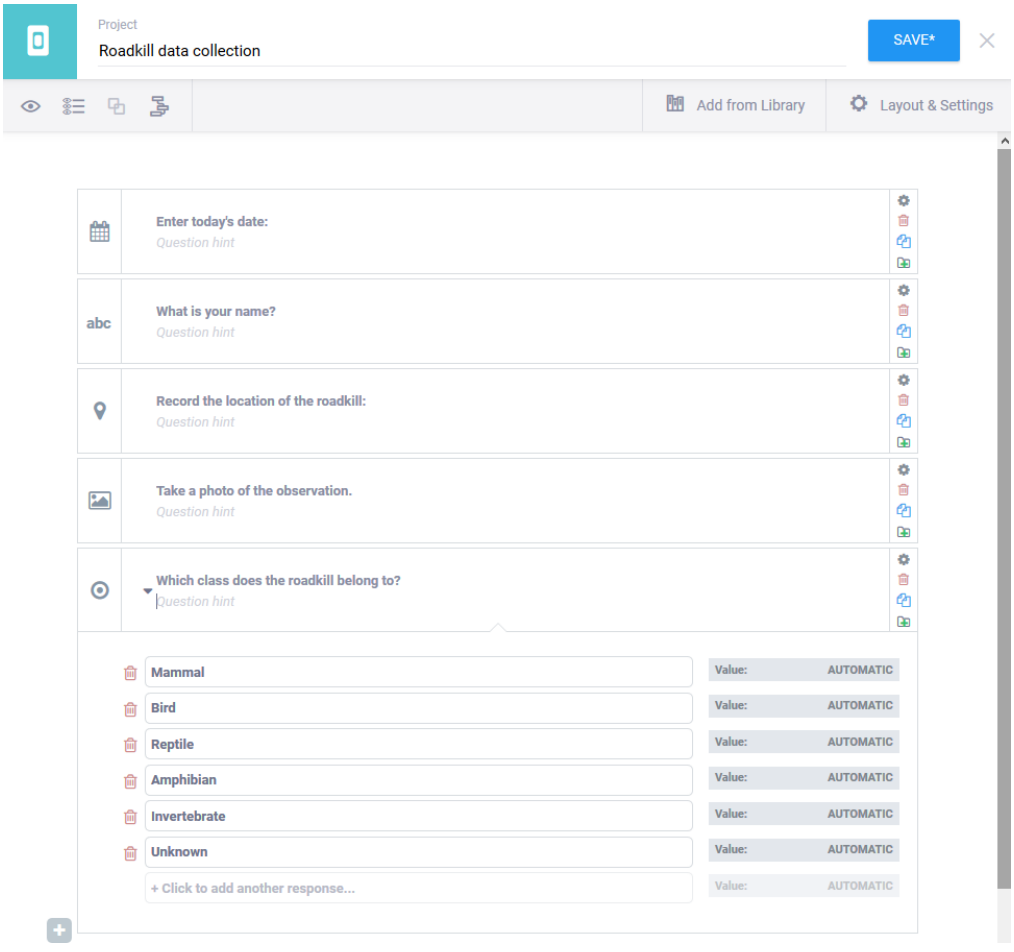
Practical exercise for FBIP training on Biodiversity data analysis: Creating a data collection app

First steps

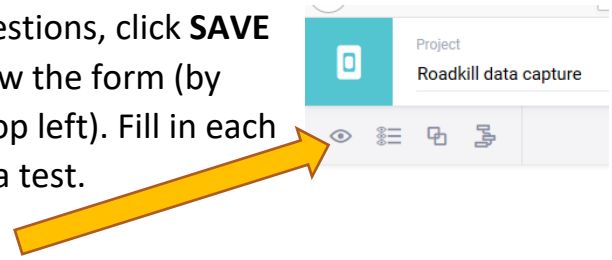
1) Go to https://www.kobotoolbox.org/
2) Scroll down to the bottom of the page, where you can create an account under “GET STARTED”
3) You will need access to your email to activate your account, so bear this in mind when creating the account
4) Click on **Create an account**, selecting the option under **Researchers, Aid Workers & Everyone Else**, (unless you work for a Humanitarian Organisation). Follow the instructions to create an account. Save your username and password, and login.
5) Click on **NEW** to create a new project, and select **Build from scratch**.
6) Fill in the details in the menu as in the example below. We’ll build a simple roadkill data collection app. Once you have filled in the details, click on **CREATE PROJECT**.



7) Click on the **+** button on the left to add new questions to the app. Add each of the 5 questions shown in the image below to the data capture app. Start by entering the question text, then click on **+ Add Question**, and choosing the appropriate question type (note the icons next to each question below, that show what the question type is). Click on the **+** button to add each additional question.



8) Once you have entered the 5 questions, click **SAVE** on the top right, and then preview the form (by **clicking on the eye icon** on the top left). Fill in each question in the form preview as a test.

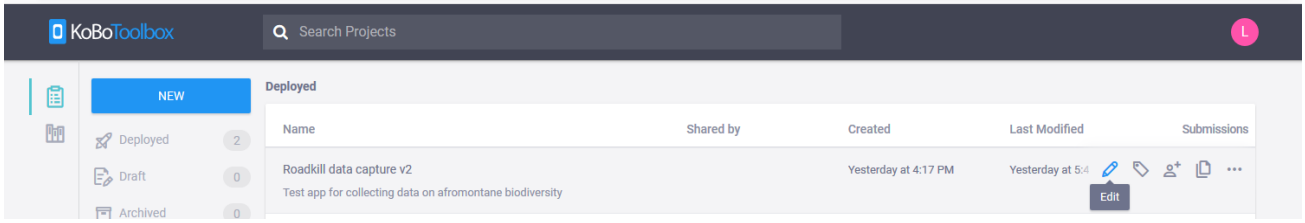


9) At the bottom of the Form Preview, click on **VALIDATE** to check and validate the form.

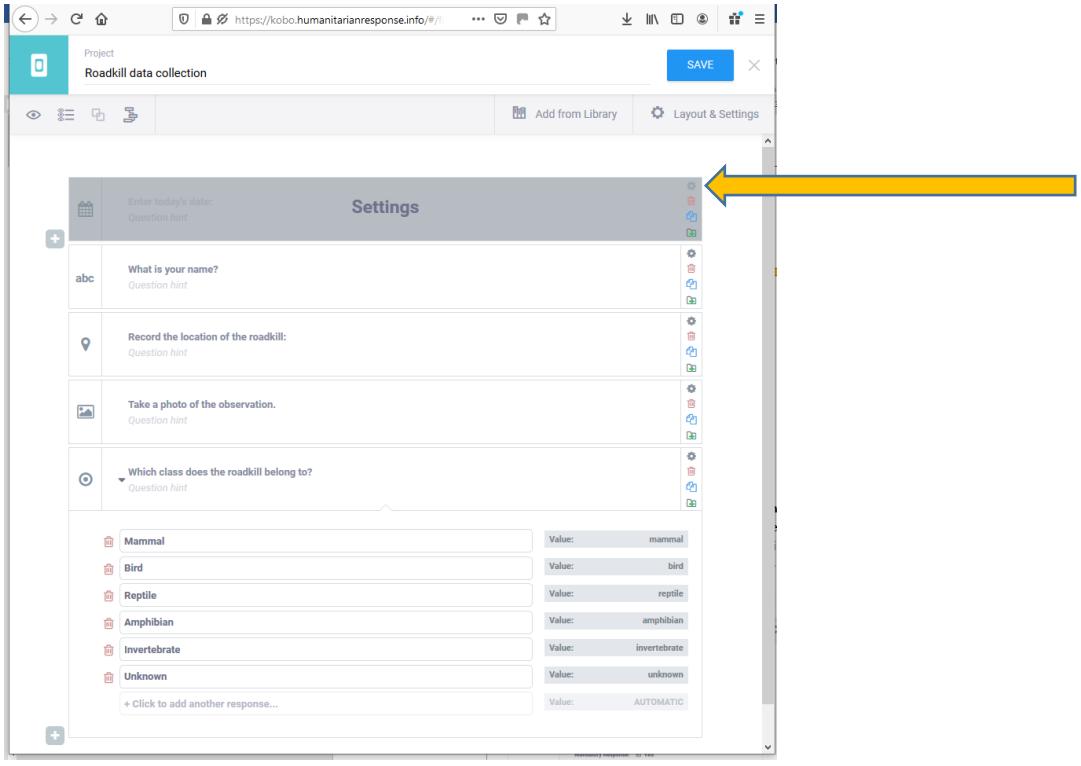
10) Then **close** the Form Preview window, and **SAVE** and close the draft app.

Changing data column names and making responses mandatory

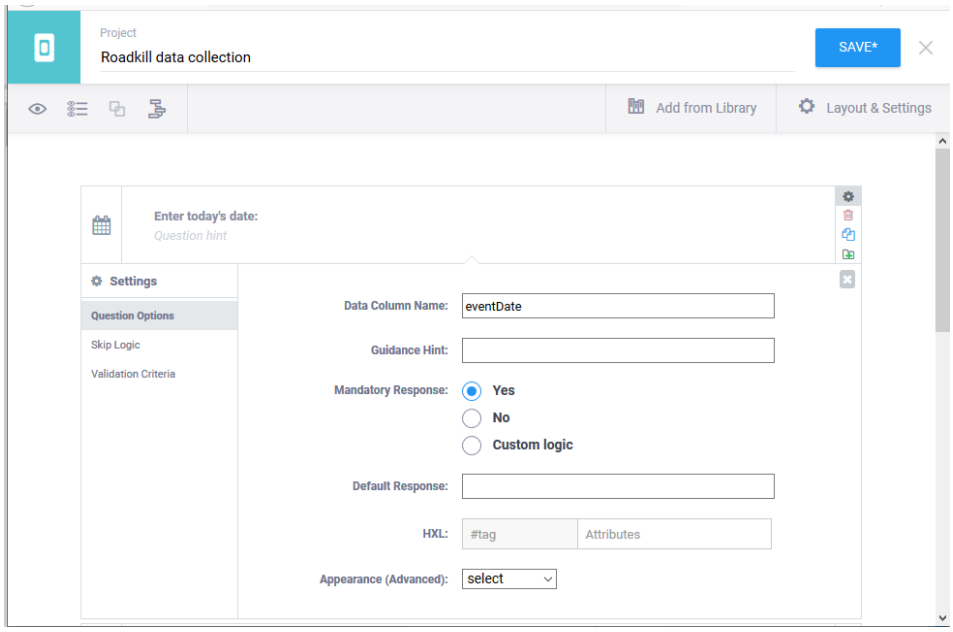
11) Click on the **edit** button next to the app's name



The questions will appear. Click on the **settings** button for the first question.



12) The screen below will appear. Edit the **Data Column Name** to **eventDate** (which is the DarwinCore or DwC term for date) and click on **Yes**, next to **Mandatory Response**. This will ensure that the person filling in the form will have to enter a date before they can submit the form.



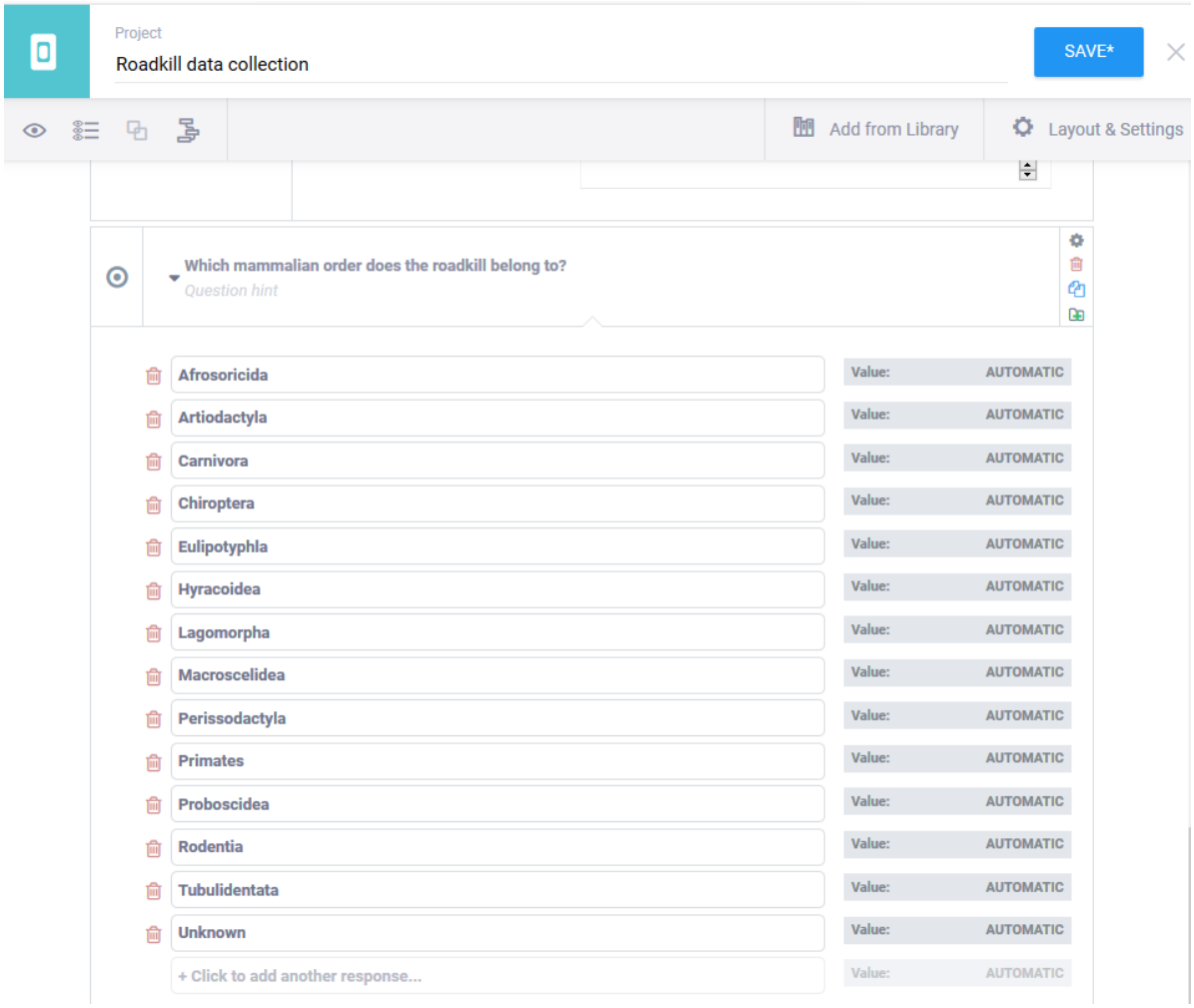
13) Change the **Data Column Names** for each questions, using DwC as a guide, and make all questions **mandatory**, except for the photo question. Use the following DwC terms for each question respectively: *recordedBy*, *locality*, *media*, and *class*.

14) Press the **SAVE** button to make sure that all your changes are saved.

Skip Logic (or question relevance)

Let's add a question, and then make our form smarter, i.e., set it to only include questions if they are relevant to answers given in other questions.

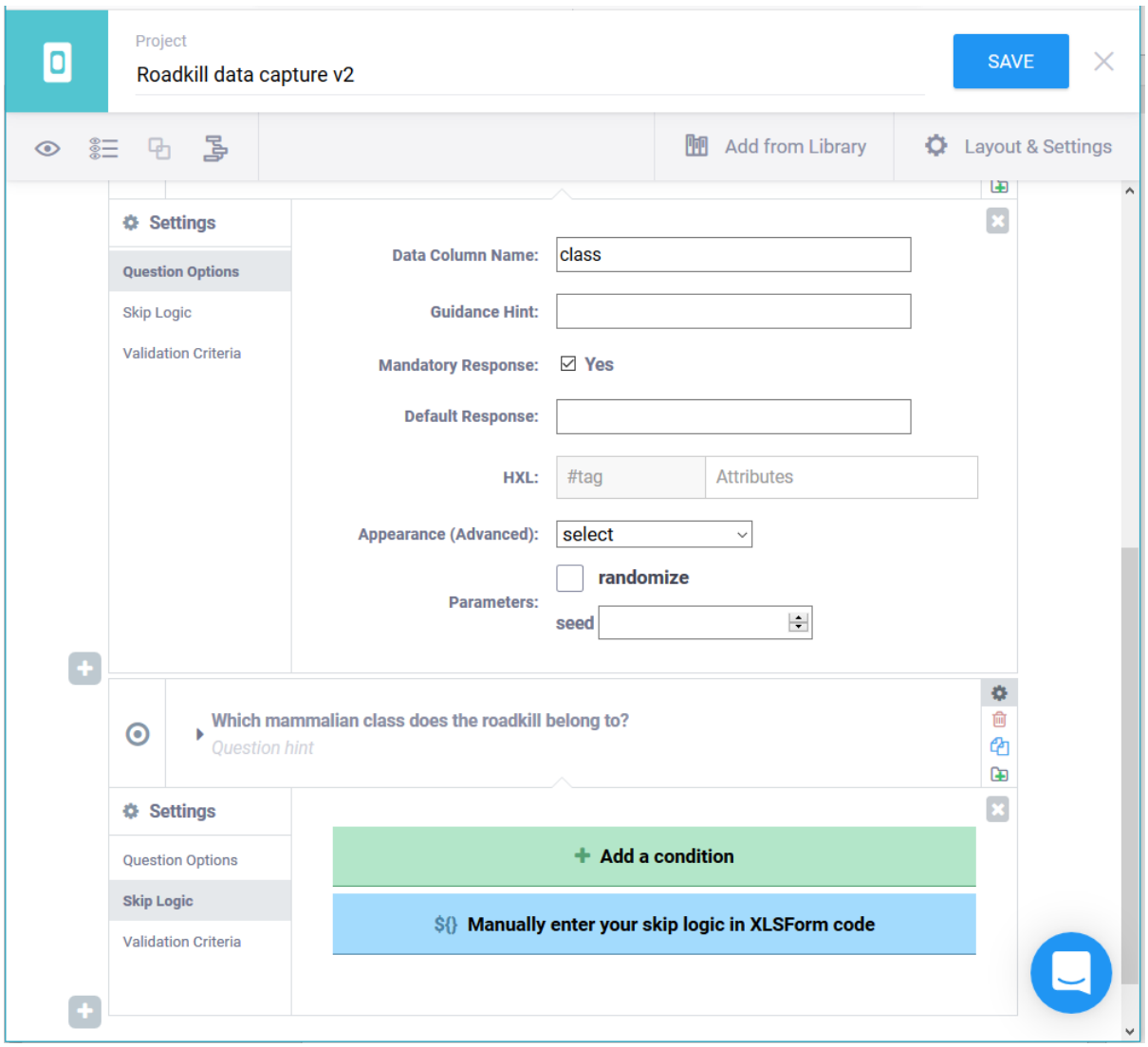
15) Click on the **+ Add Question** button, and add a **Select one** question on mammalian orders, as in the image below, and click **SAVE**.



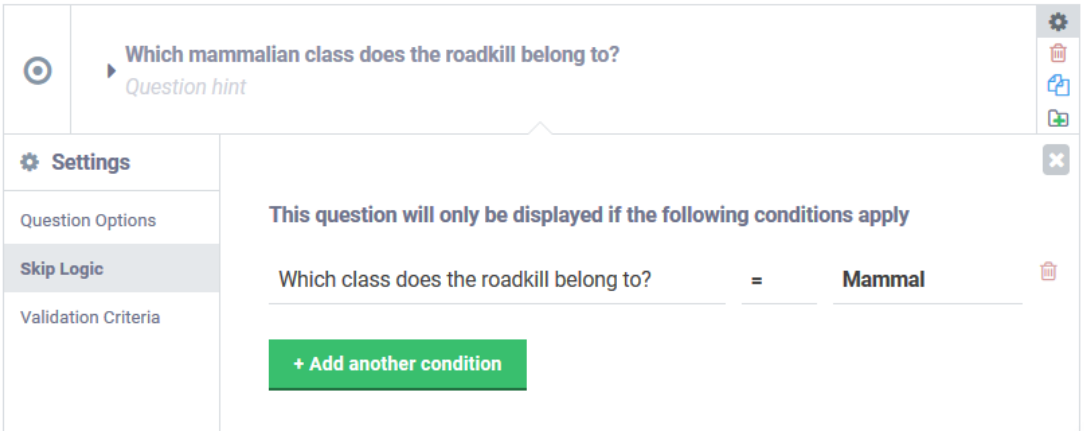
The above question would only be relevant to complete if the roadkill belonged to the Class Mammalia, in the previous question. It would not be possible to fill in this question for birds, amphibians or reptiles.

16) Click on **Settings** for the Mammalian Orders question. Edit the **Data Column Name** to **order** and make this a required question.

Then click on **Skip logic** (on the left) and on **Add a condition** (see image below).



17) Click on **Selection question from list**, and choose the question "Which class does the roadkill belong to?" from the list and make sure this = Mammal. Click **SAVE.**

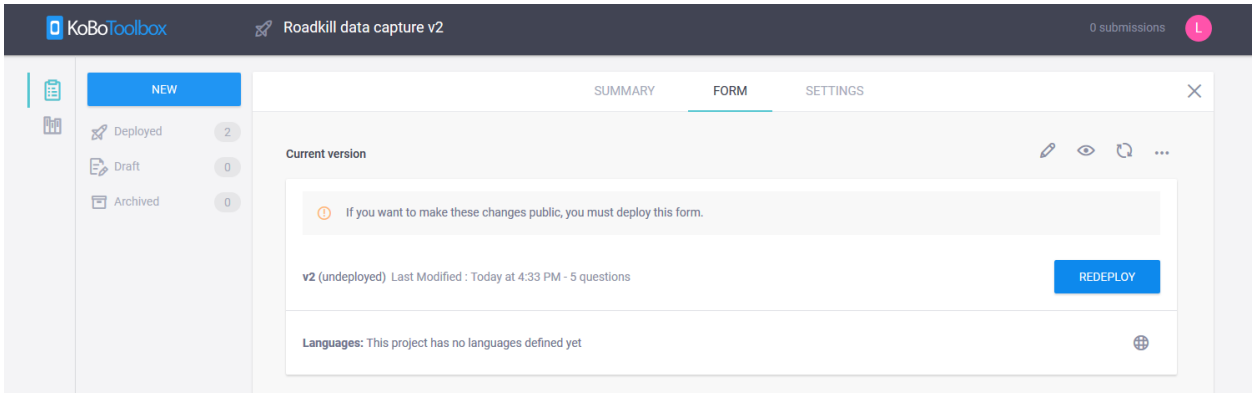


18) Now let's preview the form again. Fill in answers to all the questions. You will notice that the question about the mammalian orders is not visible until you select Mammals in the fifth question. Now select birds or any other class and the Mammal question will disappear.

19) Now **VALIDATE** your form and then close the form preview window. Close the edit screen by clicking on the X on the top left of the screen next to SAVE.

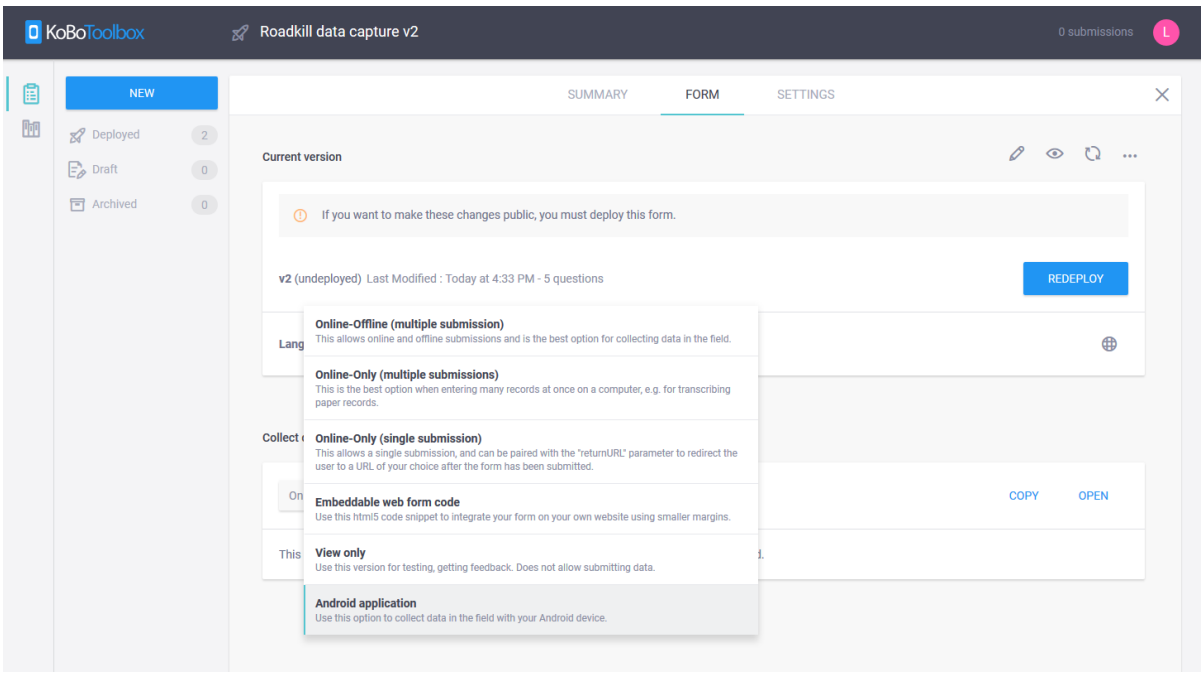
App deployment

20) The app should now be ready to be deployed. Click on the blue **DEPLOY (or REDEPLOY)** button

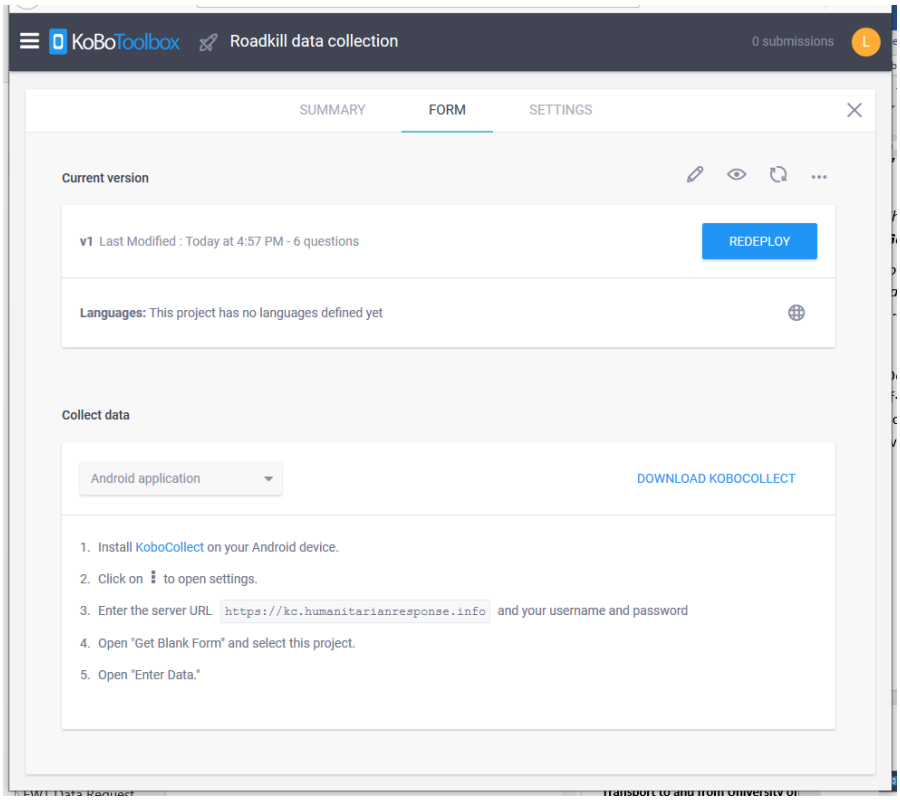


Once deployed, you can choose several options for data collection.

a) Android phones
If you have an Android phone, you can select **Android application** from the Collect data drop-down menu. However, you will need to install KoBoCollect from the Google Play Store on your mobile device.



Once you have installed KoBo Collect on your Android phone, follow the instructions on the KoBoToolbox website on how to upload your data collection app to your mobile device (see image below).

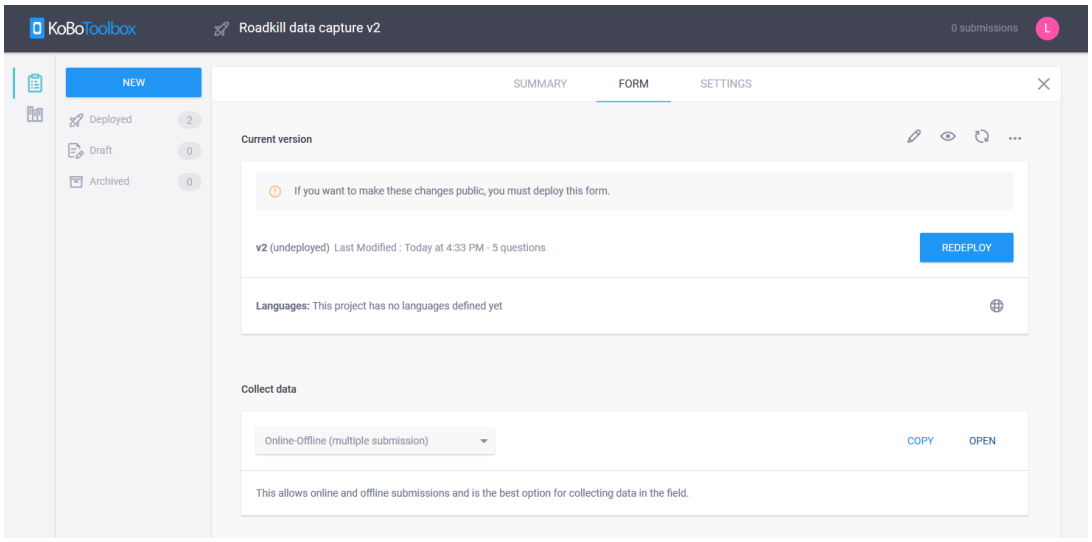


*Note: These instructions miss a few steps – after clicking on the 3 vertical dots, select **General settings** and the click on **Server***

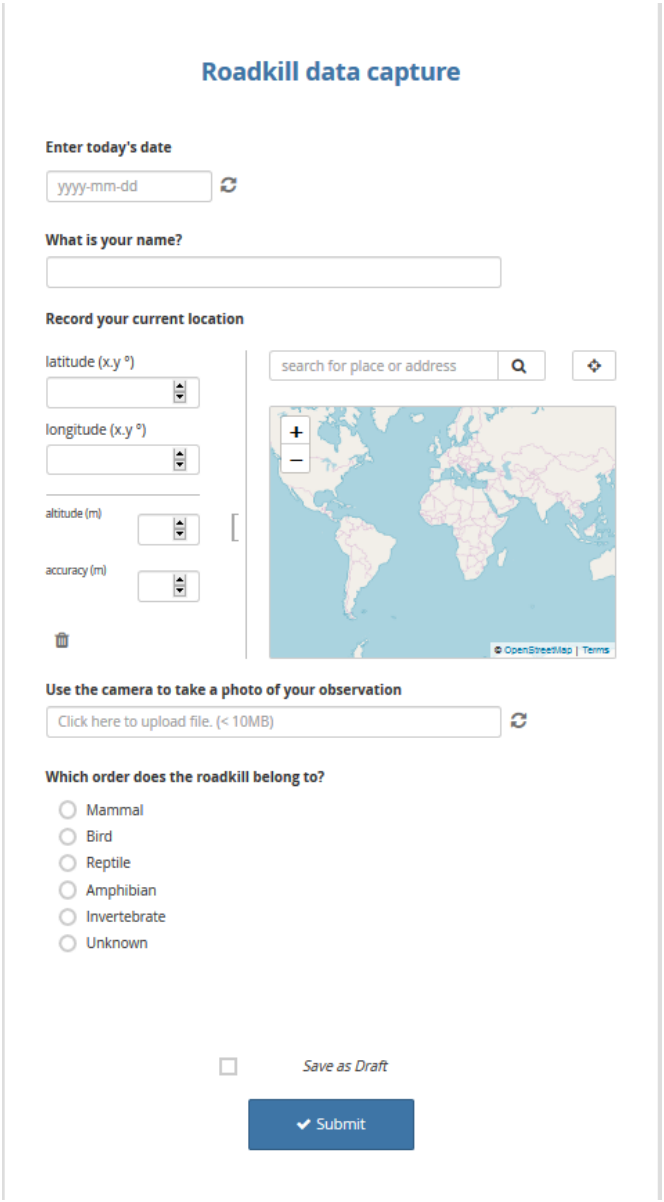
*Once you have changed the server name, as instructed above, go back to the start screen and select **Get Blank Form.** Your form should appear and you can then click on **Get Selected** to download the roadkill form onto your phone.*

b) Desktop or laptop computer

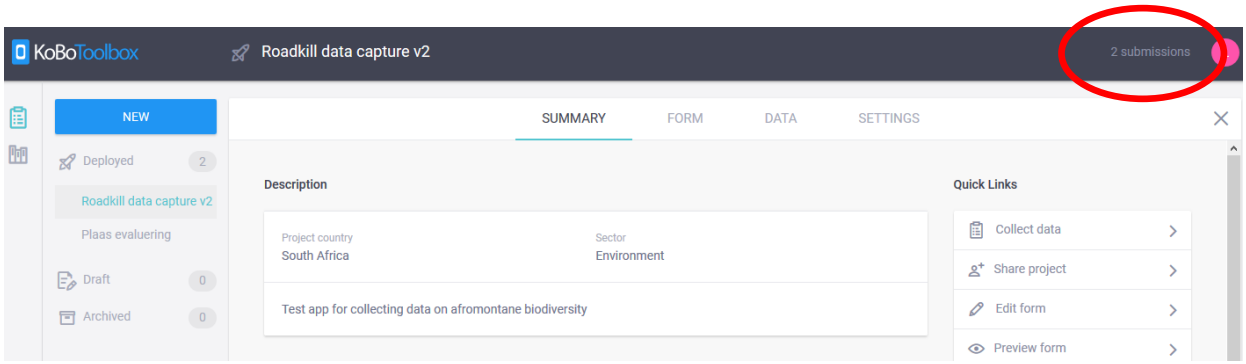
If you are not using a smartphone, you can use your computer for data collection. Choose the **Online-**Offline (multiple submissions) option, and then click on **Open**. This will open the data collection form in a separate window on your computer.



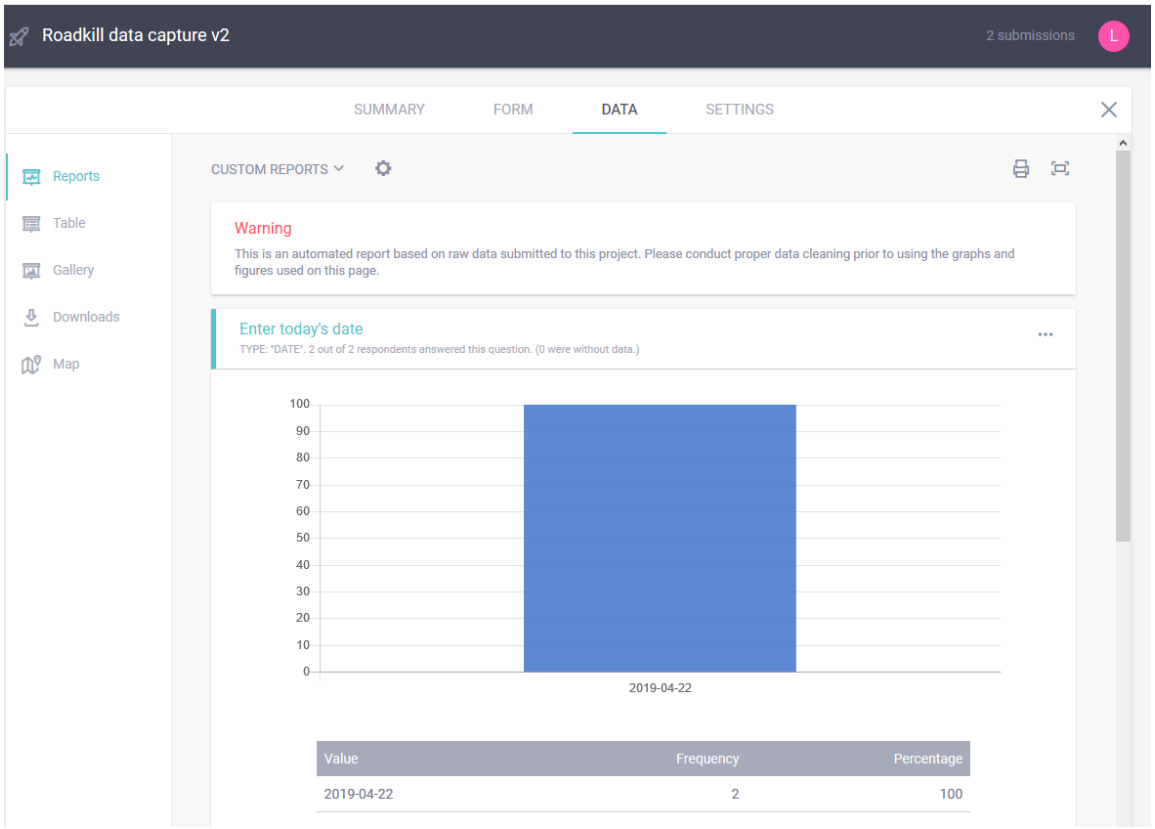
21) The app will look something like the image below. Capture some data in the app and click on **SUBMIT**. Do this a few times, so that you have multiple records to play with.



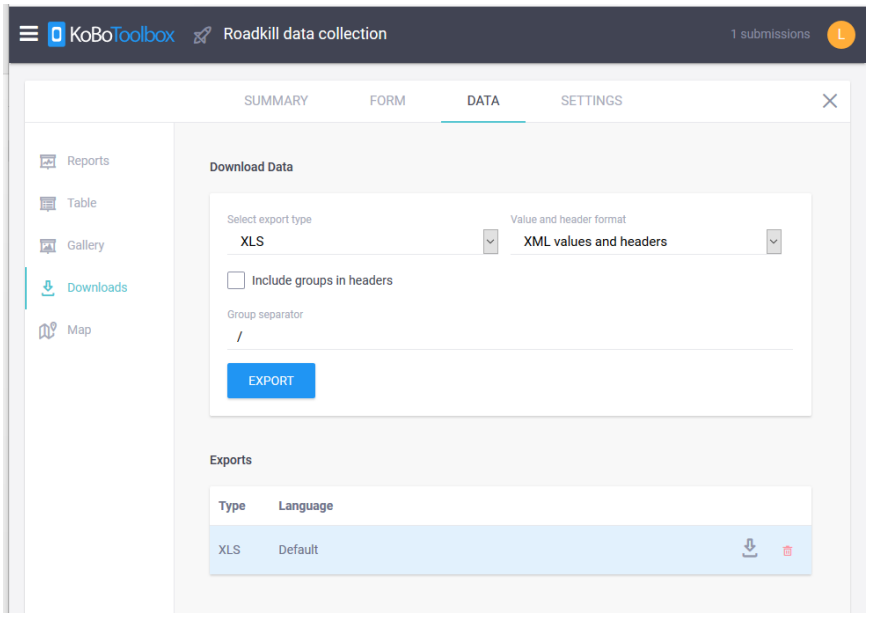
Once you have captured data, you should see the number of submissions in your form change from 0 to however many times you submitted data.



22) You can now click on the **DATA** tab, to be able to view and download the data. Explore the 5 DATA tabs on the left, i.e., **Reports, Table, Gallery, Downloads** and **Map**.



23) You can now download the data by clicking on **Downloads,** then change the **Value and header format** to **XML values and headers** (otherwise the data will be downloaded with the full questions as column headings, rather than the Data Column Names you chose). Now click on **EXPORT** and finally on the **download** button next to the file that you want to download.



24) Open the file in Excel, and examine the data structure. The column headings should appear as you entered them, but with a number of additional data columns with data that is collected or assigned automatically.

Using xlsforms to build data collection apps

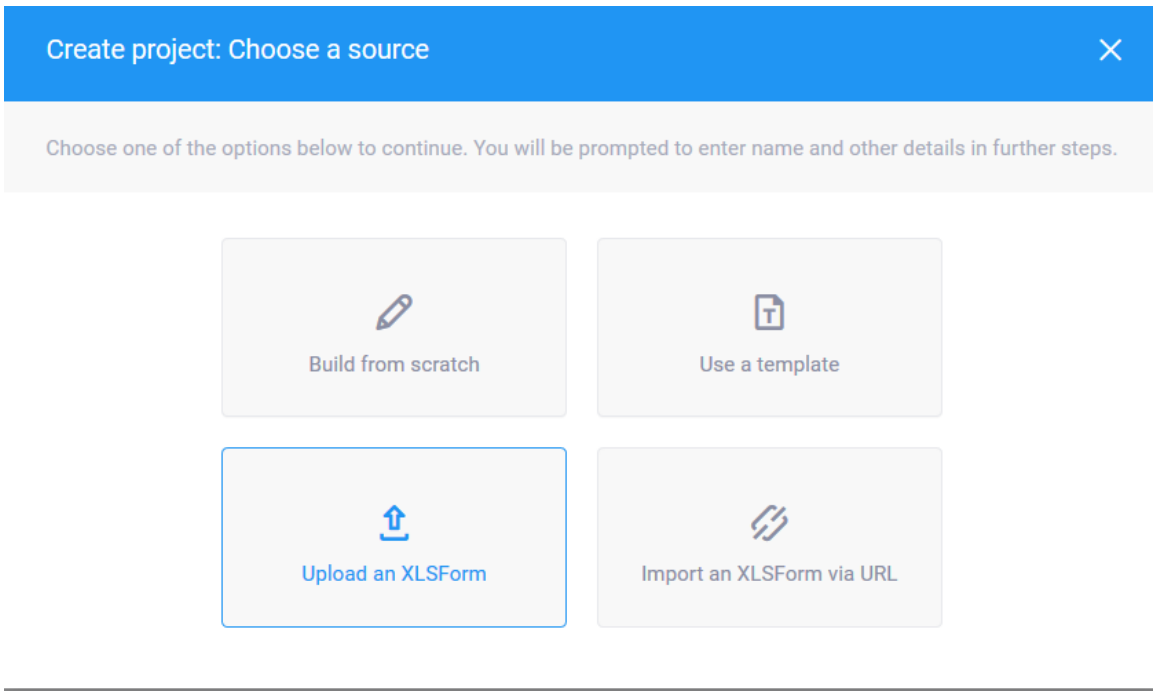
Quite sophisticated forms can be set up in Excel and imported as an XLSform into KoBo Toolbox, as well as many other platforms that develop apps. There is a bit of a learning curve for using XLS forms, but worth it if you will be frequently building and using data collection apps.

http://xlsform.org/en/

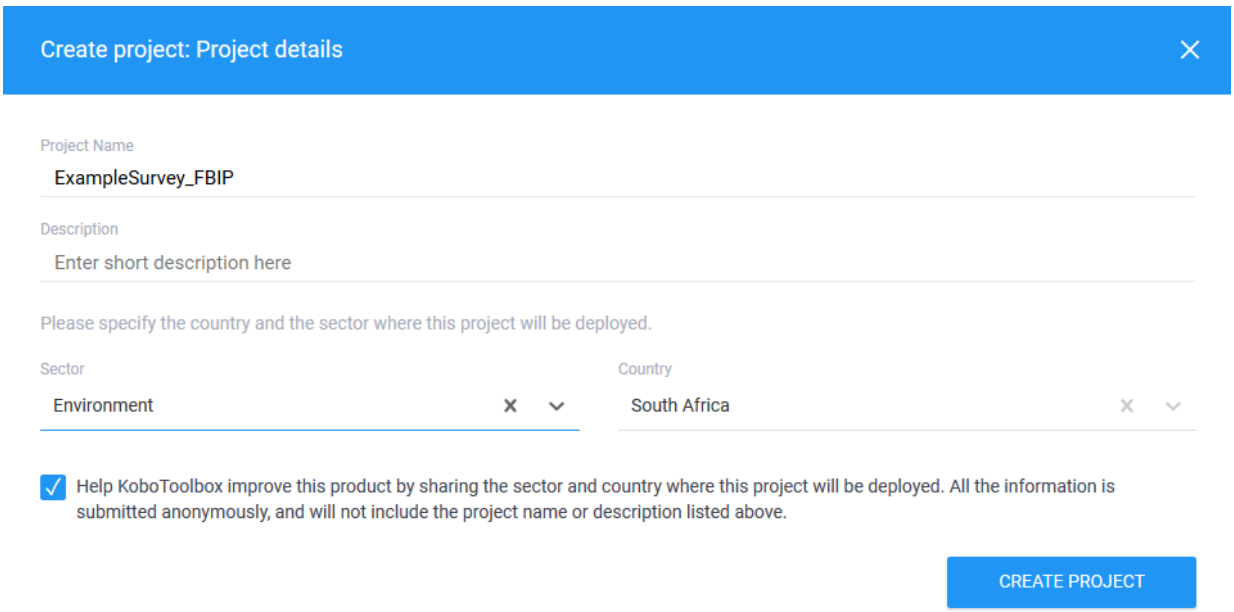
a) Open the file ExampleSurvey_FBIP.xlsx in Excel. This file is set up as an xlsform, and can be directly imported into Kobo Toolbox to create an app

b) The form has 4 spreadsheets – survey (which contains the survey questions and structure), choices (a list of the choices per question), settings (where you enter the survey name, languages, pagination etc) and lastly types, which is an information spreadsheet that provides data on setting up an xlsform – note: the one that you have been provided has some information that is relevant only for using Survey123 (esri/ ArcGIS online software).

c) Now close the file in Excel and login to your Kobo Toolbox account, if you are not already logged in. Click on NEW and select Upload an XLSForm.



d) When prompted, click to browse to the file ExampleSurvey_FBIP.xlsx and load it. Click on CREATE PROJECT.



e) Now preview the app by clicking on the preview icon. Examine all the features of the app. You will also be able to edit, and deploy the app as before.

Note: Another advantage of using an xlsform is that you can switch between different app collection platforms (e.g. Open Data Kit or Survey123). And you can also set up the app offline.