MANUAL GUIDE
Data Collection using EpiCollect5

2.1 Introduction

EpiCollect5 is a comprehensive mobile and web application designed to simplify and streamline the process of data collection. Users can access EpiCollect5 through both mobile apps and web browsers. The mobile app is available for both iOS and Android.

Overall, users create projects by using the web application at five.epicollect.net. Afterward, these projects can be downloaded onto devices for conducting data collection tasks.

2.2 Installment

To download the mobile app, follow these steps:

1. Go to the Google Play Store (for Android) or App Store (for iOS) on your mobile device.
2. Go to the search bar and search "EpiCollect5".
3. The search will reveal the Epicollect5 app icon. Open, then click "Install".

2.3 Project and Form Set-Up

The survey form is created through https://five.epicollect.net/. All the steps can be further learned on the page https://docs.epicollect.net/.

1. Open a web browser on your laptop >> Go to https://five.epicollect.net/ >> Click on the "Login" button.

2. Login can be done using "Sign in with Google," "Sign in with Apple," or with an email address.
In EpiCollect5, we first need to create a Project. With a project, we can create field survey forms, manage user access, edit data, and more. To start creating a project, click on "Create Project."

Please fill in the Project Name as "International_Training_yourname" and provide the other necessary information as shown in the image below. Then click on "Create" to proceed.

*Notes

Private: The project can only be accessed by the project creator and members added by the project creator.

Public: Anyone can access the project (view, add, delete, and download all data).
5. After successfully creating the project, click on "OK, OPEN FORM BUILDER NOW" to start creating the survey form.

6. You will be redirected to the form creation page (Form Builder). On the Form Builder page, you can add questions by dragging and dropping various question types from the left side to the middle section of the form.

7. The following is a table that contains a list of questions, question types, identifiers/column names, question properties, and notes. Please create the survey form according to the table below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Question Type</th>
<th>Identifier (Column Name)</th>
<th>Mandatory</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Surveyor Name</td>
<td>Text</td>
<td>surveyor</td>
<td>Yes</td>
<td>Max. 254 character</td>
</tr>
<tr>
<td></td>
<td>Survey Date</td>
<td>Date</td>
<td>date</td>
<td>No</td>
<td>Format: DD/MM/YYYY</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
<td>------</td>
<td>------</td>
<td>----</td>
<td>---------------------</td>
</tr>
<tr>
<td>3.</td>
<td>Geometry Type</td>
<td>Dropdown</td>
<td>geom_type</td>
<td>Yes</td>
<td>Domain Administrative Boundary, Hydrography, Leisure Area, Populated Place, Railway, Road, Building, Topography, Undersea, Vegetation</td>
</tr>
<tr>
<td>4.</td>
<td>Feature Class</td>
<td>Dependent Dropdown</td>
<td>fclass</td>
<td>Yes</td>
<td>Domain Administrative Division</td>
</tr>
<tr>
<td>5.</td>
<td>Feature Type (Administrative Boundary)</td>
<td>Dependent Dropdown</td>
<td>ftype_admin</td>
<td>Yes</td>
<td>Domain Bay, Dock(S), Lakes, Ocean, Ponds</td>
</tr>
<tr>
<td>6.</td>
<td>Feature Type (Hydrography)</td>
<td>Dependent Dropdown</td>
<td>ftype_hydro</td>
<td>Yes</td>
<td>Domain Business Center, Military Base, Mining Area, Park, Port</td>
</tr>
<tr>
<td>7.</td>
<td>Feature Type (Leisure)</td>
<td>Dependent Dropdown</td>
<td>ftype_leisure</td>
<td>Yes</td>
<td>Domain Farm Village, Populated Places, Populated Place, Abandoned Populated Place, Religious Populated Place</td>
</tr>
<tr>
<td>8.</td>
<td>Feature Type (Populated Place)</td>
<td>Dependent Dropdown</td>
<td>ftype_populated</td>
<td>Yes</td>
<td>Domain Oil Pipeline, Road, Railroad, Tunnel, Street</td>
</tr>
<tr>
<td>9.</td>
<td>Feature Type (Railway, Road)</td>
<td>Dependent Dropdown</td>
<td>ftype_road</td>
<td>Yes</td>
<td>Domain Airport, Cemetery, Castle, Religious Center, Historical Site, Palace, Pagoda, Religious Site,</td>
</tr>
<tr>
<td></td>
<td>Feature Type (Topography)</td>
<td>Feature Type (Undersea)</td>
<td>Feature Type (Vegetation)</td>
<td>Place Name</td>
<td>Variant Names</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------</td>
<td>--------------------------</td>
<td>---------------------------</td>
<td>-----------</td>
<td>--------------</td>
</tr>
<tr>
<td>11.</td>
<td>Dependent Dropdown</td>
<td>ftype_topo</td>
<td>Yes</td>
<td>Ruin(S), Shrine, Temple(S), Restaurant, Building(S)</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Dependent Dropdown</td>
<td>ftype_undersea</td>
<td>Yes</td>
<td>Domain Beach, Cape, Desert, Hill, Mountain</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Dependent Dropdown</td>
<td>ftype_vegetation</td>
<td>Yes</td>
<td>Domain Bush(Es), Forest(s), Grassland, Tundra, Vineyard</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Text</td>
<td>name</td>
<td>Yes</td>
<td>Max. 254 character</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Text</td>
<td>var_name</td>
<td>No</td>
<td>Max. 254 character</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Text</td>
<td>prev_name</td>
<td>No</td>
<td>Max. 254 character</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Text</td>
<td>lang_ori</td>
<td>No</td>
<td>Max. 254 character</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Text</td>
<td>mean_name</td>
<td>No</td>
<td>Max. 254 character</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Text</td>
<td>hist_name</td>
<td>No</td>
<td>Max. 254 character</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Location</td>
<td>lation</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Text</td>
<td>prov_state</td>
<td>Yes</td>
<td>Domain Bali</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Text</td>
<td>regency</td>
<td>Yes</td>
<td>Domain Gianyar Klungkung Kota Denpasar Badung</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>District (City)</td>
<td>Type</td>
<td>Domain</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>----------------</td>
<td>------</td>
<td>------------------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>District (Gianyar)</td>
<td>Text</td>
<td>district_gianyar</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Blahbatuh Gianyar Tampaksiring Ubud</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>District (Klungkung)</td>
<td>Text</td>
<td>district_klungkung</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nusa Penida Banjarakan Dawan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>District (Kota Denpasar)</td>
<td>Text</td>
<td>district_denpasar</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Denpasar Selatan Denpasar Timur Denpasar Barat Denpasar Utara</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>District (Badung)</td>
<td>Text</td>
<td>district_badung</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Abiansemal Kuta Kuta Selatan Kuta Utara Mengwi Petang</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>Photo 1</td>
<td>Photo</td>
<td>photo_1</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Photo 2</td>
<td>Photo</td>
<td>photo_2</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Voice Recording</td>
<td>Audio</td>
<td>rec</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Remark</td>
<td>Text</td>
<td>remark</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**a. Question Type: Text**

- This question type includes questions about Surveyor Name, Place Name, Variant Names, Previous Name, Language Origin, Name Meaning, Naming History, Province/State, and Remark.
- If a question is mandatory, then the "Answer is required" option should be checked. Refer to the Mandatory column in the table above to confirm the nature of each question.
- Example: Surveyor Name is mandatory, so the "Answer is required" option is checked.
Then, if the text has a maximum character limit, you can set it using the Match REGEX in the Advanced tab. Click on the icon 🎧 >> select "limit the answer length" >> Apply This >> change the number 20 to the maximum limit. In this case, for Surveyor Name, the maximum limit is 254 characters, so the number 20 should be changed to 254. Refer to the Notes column in the table above to ensure any specific notes for each question.

For the "Place Name" question, please check the "Use answer as title" checkbox.
b. Question Type: Date

- This type is used to ask about the Survey Date. The Survey Date is not mandatory, so the "Answer is required" option should not be checked.

- Then, set the date format in the Advanced tab. The chosen date format is Day/Month/Year (DD/MM/YYYY). Select the option "Set initial answer to current date" so that when filling out the form, the recorded date is automatically set to today's date.

c. Question Type: Dropdown
• Dropdown answer options can be added using the button. However, for a large number of answer options, it would be more effective to use Import CSV.

• To import a CSV file, click on the icon >> "Import CSV".

• Select the column in the CSV file that contains the data to be imported. Check "First row contains headers" if the first row contains column names. Leave it unchecked if the first row is not a column name. Then, click on "Import" to proceed.

**d. Question Type: Dependent Dropdown**

• Dependent Dropdown applies to the questions Feature Class and Feature Type. As stated in the table above, there are 9 Feature Classes, and each Feature Class has 3 - 5 Feature Types. This Dependent Dropdown will work in a way that the selected Feature Class will lead to the question of the corresponding Feature Type within that Feature Class.

• To enable the Dependent Dropdown, create a question about Feature Class with the question type Dropdown >> Add Answer >> enter the answer options. The various Feature Classes can be seen in the table above (Notes column).
After that, create questions about Feature Type based on the 9 Feature Classes >> Add Answer >> enter the answer options. The various Feature Types can be seen in the table above (Notes column).

As shown in the image below, there are questions about the Feature Type of Feature Classes such as Hydrography, Leisure, Building, etc.

*Arrange the order of Feature Type questions as shown in the image above.

- Dependent Dropdown in EpiCollect5 is facilitated by the "Jumps" feature. With the "Jumps" feature, after selecting the Feature Class, you will be directed to a specific Feature Type that is part of the selected Feature Class (and disregarding other Feature Type questions).

- Untuk memungkinkan Dependent Dropdown bekerja, kita perlu menambahkan 1 pertanyaan dengan tipe Checkbox yang ditempatkan di antara pertanyaan Feature Class dan Feature Type (Administrative Boundary) >> Question: Yes/No >> Possible Answer: Yes, No. Pertanyaan ini nantinya tidak akan muncul pada formulir survey. Lalu mengapa pertanyaan ini perlu ditambahkan? Pertanyaan ini perlu ditambahkan agar Feature Class dapat melakukan "Jumps" ke Feature Type (Administrative Boundary). Hal ini dikarenakan EpiCollect5 tidak bisa melakukan “jumps” pada pertanyaan yang tepat berada atas-bawah.
To enable Dependent Dropdown to work, we need to add 1 Checkbox question placed between the Feature Class and Feature Type questions (Administrative Boundary) >> Question: Yes/No >> Possible Answer: Yes, No. This question will not appear on the survey form. So why do we need to add this question? This question needs to be added to allow the Feature Class to perform "Jumps" to the Feature Type (Administrative Boundary). This is because EpiCollect5 cannot perform "Jumps" on questions that are placed exactly below the previous questions.

Example: I placed the Yes/No question between the Feature Class and Feature Type (Administrative Boundary) questions. This allows the Feature Class to perform "Jumps" to the Feature Type (Administrative Boundary). If the Yes/No question is removed, the Feature Class can only perform "Jumps" to Feature Type (Hydrography) and Feature Type (Leisure).

To start creating "Jumps", let's go back to the Feature Class question. Fill it in like this:

When: answer is
Answer: ADMINISTRATIVE BOUNDARY
Go to: Feature Type (Administrative Boundary)

This means that if the Feature Class question is answered with "Administrative Boundary," EpiCollect5 will proceed to the Feature Type (Administrative Boundary)
question. If the Feature Class is answered with "Hydrography," EpiCollect5 will proceed to the Feature Type (Hydrography) question.

- Add additional jumps by clicking +ADD JUMP. Continue this process until all Feature Types are connected with "Jumps".

- Next, we access each Feature Type question one by one. Each Feature Type question also needs to be given "Jumps". However, for the Feature Type, fill it in like this:
  
  **When:** always
  **Answer:** blank
  **Go to:** Place Name

- This means that if the Feature Type question is answered, EpiCollect5 will proceed to the Place Name question. Please edit the "Jumps" tab for each Feature Type, except for the last Feature Type (Vegetation).

  *Why is the last Feature Type not given jumps? This is because even without "Jumps", the questions will automatically proceed to the next question (Place Name). Additionally, please remember that jumps cannot be performed on questions that are immediately above or below.*

**e. Question Type: Location**
To record latitude and longitude coordinates, you can use a single question like the one below:

f. Question Type: Photo
This question type allows surveyors to capture photos using the survey form. There are two questions with the Photo type: Photo 1 and Photo 2.

g. Question Type: Voice Recording
This question type allows surveyors to record audio using the survey form. Write the question as follows:

8. After creating all the questions, make sure the order of the questions matches the table as shown in the image below.
9. If everything is correct, click on "Save Project" to save your project.

10. Click on "Exit" button in the top right corner to go back to the Project page.

11. On the Project page, click on "Mapping Data". Mapping Data is a feature in EpiCollect5 that allows users to assign identifiers to each question, which will become the column names when the data is downloaded.

    For example, for the question "Surveyor Name", the identifier used could be "name". So, when downloaded, the column name will be "name".
12. In the Mapping Data, there is already a default format called EC5_AUTO. To start defining identifiers, click on Add mapping + >> and name it "EC5_EDIT".

13. In EC5_EDIT, enter the identifier in the Mapping To field. The identifier refers to the information in the "Column Name" column of the table above.

14. If all the identifiers have been defined, click on "Update" to save the changes.

15. You’re all set!

2.4 Survey Procedure
1. Open the EpiCollect5 application on your respective smartphones.

2. Click on the icon in the top left corner of the application, then click on "Login".

3. Click on Add Project >> and type the name of the project that was previously created. Click on the project that appears in the search results.
4. After successfully adding the project, click on the project itself.

5. To start collecting data, click on "Answer Questions" and then click "Next". Try to answer each question, even if they are not mandatory.
7. If all the questions have been answered, click on "Save Entry".

8. If the survey is completed, click on [Upload now]. This option can also be found by clicking the button in the top right corner.

9. Upload the data, upload photos (if any), upload videos (if any), and upload audio (if any).

10. Data that has been successfully uploaded will be marked with a green cloud icon. Meanwhile, data that has not been uploaded will be marked with a white cloud icon.

11. Uploaded data can be viewed, edited, and deleted through the EpiCollect5 web. On the other hand, data that has not been uploaded cannot be accessed through the web.
2.5 Data Extraction and Processing

1. To access the survey data, click on "My Projects" and then select "View" for the respective project. From there, you can click on "View Data" to access the survey data.

2. On the "View Data" page, you can view, delete, and edit the survey data collected.

3. If your data is ready for download, click on the Download button and specify the download options as follows:

   **Mapping:** EC5_EDIT
   
   **Timeframe:** Adjust it according to the desired time range. For practice purposes, let's select "LIFETIME."

   **Format:** CSV

4. These settings will ensure that you download the data with the specified mapping, including the desired timeframe, in CSV format.
5. The CSV file will be downloaded in a zip file >> extract it.
6. This CSV file then needs to be converted into GeoJSON format. First we need to open QGIS. Then click on Layer >> Add Layer >> Add Delimited Text Layer.

To install QGIS, please refer to page 52 on this document.

7. Click on ... >> select the extracted CSV file >> choose CSV file format >> Fill as follows:
   
   File format: CSV
   First record has field names: check
   Detect field types: check
   Point coordinates (x field): long_lation
   Point coordinates (y field): lat_lation
   Geometry CRS: EPSG:4326 - WGS 84
Then click “Add”. Your data will be displayed on the screen.
8. Right-click on the data layer >> Export >> Save Feature As

9. Provide the specific information as below,

**Format:** GeoJSON

**File name:** provide the desired output file name and the folder storage

**CRS:** EPSG:4326 - WGS 84

For the lat_lataion and long_lataion fields, define their export names as "lat" and "lon" respectively.