

Session 2: Build a project from scratch

Biostatistics Research and Support Unit (BRU) IGTP
October, 2025

Content

Codebook

- 1. Definition
- 2. Access
- 3. Functionalities

Data entry

- 1. Add/Edit Record
- 2. Dashboards

Content

Management of a REDCap project

- 1. Project status
- 2. Development
- 3. Production
- 4. Analysis/Cleanup
- 5. Project completed

Content

Branching logic

- 1. Branching logic
- 2. Drag-N-Drop Logic Builder
- 3. Advanced Branching Logic Syntax

External modules

Smart variables

Piping and Action Tags

- 1. Piping
- 2. Action Tags



The codebook contains a list of all the fields that have been created in the project so far.

Access

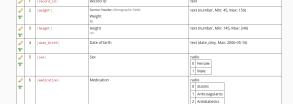
Click on Codebook in the Project Home and Design section.





Variable/Field Name
Name of the field
Field Label
Label of the field
Field Attributes
Type of the field, categories,

limitations, equations...



Field Attributes (Field Type, Validation, Choices,

Calculations, etc.)

Field Label

Variable / Field Name

Instrument: Demography (demography)

Download

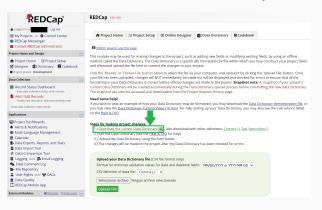
You can download the data dictionary (which contains the codebook information) from the *Project Setup*.

Project Setup » Design your data collection instruments » Data dictionary





And click on Download the current Data Dictionary



Data entry

Data entry

1. Add/Edit Records



Definition



Access



Functionalities



Activity

2. Dashboard



Definition

2.1. Global dashboard



Acces



Functionalities

2.2 Individual dashboard



Access



Functionalities

2.3 Dashboard legend



Definition



It serves to:

- Introduce a new record.
- Edit an existing record.



You can find this option under Data Collection.





Total records

- Select a record to edit/view
- Create a new record

Data Search

• Search for a record using the information from an existing field



Activity: Add/Edit Records

- 1. Enter your first record.
- 2. What is the ID number of your first record?
- 3. Find your first record by weight.

Solution

- 1. Enter your first record.
- What is the ID number of your first record? The identifier
 of the first record is 1. Remember that REDCap by default
 gives a correlative name and you have not changed this option.

Adding new Record ID 1	
Record ID	1

3. Find your first record by weight.



Dashboard



This is your project table, it lists all the existing records/responses and their status for each instrument/record of the project. Allows you to:

- Add a new record.
- Edit an existing record.
- View all project records (Global Dashboard).
- View a single project record (Individual Dashboard).

Global dashboard

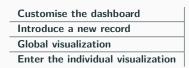


Access it via the Data Collection section



Global dashboard







You can click on any of the coloured buttons on the table to open an instrument for a specific record.

Individual dashboard



From the global dashboard, click on a record.



Individual dashboard



Choose action for record

- Download pdf of record data for all instruments.
- Lock entire record.
- Rename the record.
- Delete the record.

Display the data of the record

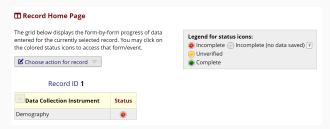


You can click on any of the coloured buttons on the table to open an instrument of the record.

Dashboard legend



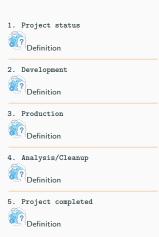
The legend of your table shows the status of each instrument/record of the project. It can be modified by answering the question at the end of the instrument **Complete?**



- Grey: Default status when no data has been entered.
- Red: Status is set to Incomplete.
- Orange: Status is set to Unverified.
- Green: Status is set to Complete.

Management of a REDCap project

Management of a REDCap project



Project status



REDCap allows you to change the status of a project in order to maximise the security of your data. There are three statuses available:

- Development
- Production
- Analysis/Cleanup

Different status provide different levels of access to modifications, which are designed to safeguard your data at various stages.

You will also see how to mark a project as completed, even though REDCap does not consider this a status.

Development



The **Development** status indicates that the project is under construction/tests.



• Properties:

- Default status for new projects.
- Any changes made are applied immediately.

Production



The **Production** status indicates that the project is ready for data collection.



Properties:

The project has to be moved from development to production.
 Project setup » Move your project to production status



Production



• Properties:

 The changes are not immediately visible. Changes must be made in Draft Mode and submitted to a REDCap administrator for approval.

Online Designer » Enter Draft Mode

NOTE: The project is currently in PRODUCTION status, and thus changes cannot be made in real time to the project as when in Development status. However, changes to the project may be drafted in DRATT MODE after which such changes will be reviewed and approved by a RECQ poleminarator. Once those changes are approved, you will then receive an email confirmation informing you that those changes have taken effect on your production project.

Would you like to enter DRATT MODE to begin drafting changes to the project?

Enter Draft Mode



• A project must be in Production before starting real data collection.

Production



• Properties:

 A project can be moved from production to development under the approval of a REDCap administrator.

Other Funcionality » Project Status Management » Move back to Development status



Analysis/Cleanup



The Analysis/Cleanup status indicates that data collection has been completed.



• Properties:

The project must be passed from production to analysis/cleanup.

Other Funcionality » Project Status Management » Move to Analysis/Cleanup status



Analysis/Cleanup



• Properties:

 Changes cannot be made. The 'Online designer' section is deactivated.



- Many of the functions are deactivated: surveys, alerts, etc...
- It is not allowed to add new records.
- It allows you to edit existing records.

Analysis/Cleanup



Definition

• Properties:

 The project can be moved from analysis/cleanup to production under the approval of a REDCap administrator.

Other Funcionality » Project Status Management » Move back to Production status



Completed project



It is not considered a REDCap status, it indicates that the project has been completed.

• Properties:

It is possible to move a project to completed in any of the three previous states:
 Other Funcionality » Project Status Management » Mark project as Completed



- The project becomes inaccessible.
- It will be removed from everyone's list of projects, and can only be accessed by selecting 'Show Completed Projects' in 'My projects'.

1. Branching logic



2. Drag-N-Drop Logic Builder



Definition



Configuration



Activity

3. Advanced Branching Logic Syntax



Definition



Configuration



√x Build a logical condition



Example





Definition

Branching logic is useful for showing or hiding fields according to a logical condition based on the values of existing fields.

In other words, it is used when certain fields in the project should only be displayed under specific conditions. For example, the "Pregnancy" field would only be displayed for female participants.



- Properties:
 - 1. It is based on fields previously defined.
 - 2. It can only work with fields from the same project.
- **Methods:** REDCap provides two methods to create a branching logic:
 - 1. Drag-N-Drop Logic Builder.
 - 2. Advanced Branching Logic Syntax.



The **Drag-N-Drop Logic Builder** method is the simplest form of branching logic.

• Properties:

- No code is required for its implementation.
- It works by adding and selecting the necessary field names for the logical condition.
- It offers less flexibility than the Advanced Branching Logic Syntax.



1. Access the "Branching Logic" option of a field:



2. Select the method "Drag-N-Drop Logic Builder".

A Configuration

To construct a logical condition, you must drag and drop the necessary fields, after which the available logical rules will then appear.





- Multiple fields can be added to the condition.
- There are two options: "ALL below are true" or "ANY below are true."

Activity: Drag-N-Drop Logic Builder

- Create a field called *Menopause* with options: No / Yes.
- 2. Make sure that the field *Menopause* is only shown for female patients.
- 3. Test it to verify that the logic works correctly.

Solution

- 1. Create a field called *Menopause* with the following options: No / Yes. Add Field >> Drop-down or Radio Buttons
- 2. Make sure that the field Menopause is only displayed for female patients.





A Remarks

• The Drag-N-Drop Logic Builder writes the logic in the Advanced Branching Logic Syntax.

Solution

3 Test it to verify that the logic works correctly.



There are two options to see if a branching logic works, using:

- The data entry
- The editor
 Advanced Branching Logic Syntax >> Test logic
 with a record





The **Advanced Branching Logic Syntax** method is the most flexible and complex of the two methods.

• Properties:

• Code is necessary for its implementation.

A Configuration

1. Click on the "Branching Logic" icon:



- 2. Select the Advanced Branching Logic Syntax option.
- 3. Build the desired logical condition.

№ Basic operators of logical language in REDCap

Logics

- "and": and
- "or": or
- "equal": =
- "different": <>

Mathematics

- Standards: +, -, /, *
- Compare: >, <, >=, <=
- Order: ()



• For more complex operations visit:

https://redcap.igtp.cat/redcap_v14.5.42/DataEntry/special_functions_explanation.php

√ Build a logical condition

- The result of a logical condition is a boolean: "True" or "False" (the condition has been met or not).
- Elements of a logical condition:
 - 1. Define the field.

To use a REDCap field, enclose the field name, not the field label, in square brackets []. Example: [age]

- 2. Define the operator. Example: >
- 3. Define the comparison value. Example:18

[age] > 18



Remarks

• To include multiple fields in a condition, use logical connectors such as and or or.

Example: Build a logic condition

Logic context: Display a field only if the value of sex is Female (coded as "0").

Elements logic condition:

- Field: [sex]
- Operator: =
- Comparison value: "0"

Logic condition:

Example: Build a logical condition

2 Logic condition: Show a field if sex = Female (0) and menopause = Yes (1).

```
Logic condition: [sex]="0" and [menopause]="1"
```

3 **Logic condition:** Show a field if the height is greater than or equal to 170 cm, or if the weight is less than 65 kg and sex is Female (coded as 0).

```
Logic condition: ([height]\geq170 or [weight]<65) and [sex]="0"
```

4 Logic condition: Show a field if the height value is not missing.

Logic condition: [height]<>""

Activity: Basic logic condition

Logic condition: If the age is greater than 65 years old, show the EPOC field.

Elements logic condition

• Field: [age]

Operator: >

Comparison values: 65

Logic condition: [age] >65

Solution

- 1. Click the Branching Logic icon on the EPOC field.
- 2. Select the option: "Advanced Branching Logic Syntax"
- 3. Add the following logic condition: [age]>65



Warning

If data is entered before adding a branching logic, REDCap may issue a warning that the field for which you just entered data requires that the field named "medication" be hidden from view. You can click OK to hide the field and erase the current value.

Activity: Logic condition checkbox

Logic context: If the patient is taking statins, specify the type in a new field called "statins".

Elements logic condition

- Field: [medication(0)]
- Operator: =
- Comparison values: "1"

Logic condition: [medication(0)]="1"

Solution

- 1. Use the *medication* field with the following options: 0 =Statins, 1 =Anticoagulants, 2 =Antidiabetics.
- 2. Create an open-text field named statins.
- 3. Click the Branching Logic icon on the statins field.
- 4. Choose the option: "Advanced Branching Logic Syntax"
- 5. Add the following logic condition: [medication(0)]="1"





Definition

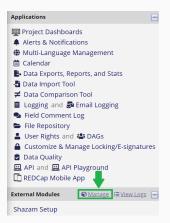
External modules are individual packages (modules) of software that can be downloaded and installed by a REDCap administrator. These modules can extend the current functionality of REDCap and provide customisations and enhancements to the existing REDCap behaviour and appearance at the system or project level.

Properties:

1. Before they can be used, REDCap administrators must enable each module.

Configuration

- 1. Access to Project setup
- 2. Click External modules





- 3. Select View available modules
- 4. Tick the module(s) you want to enable/activate

If the module is not available in the list, you will need to request the REDCap administrator to enable it at the system level.

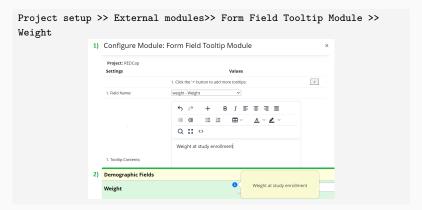




 Use the external module Form Field Tooltip Module to inform that the weight must be recorded at the time of study entry.

Solution

 Use the external module Form Field Tooltip Module to inform that the weight must be recorded at the time of study entry.



01.Smart variables



Example



[5] smart variables are dynamic variables that are included by default in REDCap and allow us to refer to characteristics of the project that are not stored in any specific field.



• Examples:

Smart variable	Action	Result
[user-name]	Name from the user	laia_garcia
[user-fullname]	Name and surname from the user	Laia García
[record-name]	Record name	1

Activity: Smart variables

Logic context: If the user is Laia García, the medication field should be shown.

Elements logic condition

- Field: [user-fullname]
- Operator: =
- Comparison values: "Laia García"

Logic condition: [user-fullname]="Laia García"

Solution

- 1. Locate the *medication* field.
- 2. Click the Branching Logic icon on the medication field.
- 3. Choose the option: "Advanced Branching Logic Syntax"
- 4. Add the following logic condition: [user-fullname]="Laia García"

⚠ Warning

If data is entered before adding a branching logic, REDCap may issue a warning that the field for which you just entered data requires that the field named "epoc" be hidden from view. You can click OK to hide the field and erase the current value.

Piping and **@Action Tags**

Piping and @Action Tags





Using **Piping** in REDCap enables you to "inject" previously collected field values into a text, such as field labels or headers.

 It gives us greater precision and control over the wording of the questions. For example, you can personalise the text at the end of a questionnaire by adding the name after completion.



• Properties:

- 1. It is based on fields entered previously.
- 2. It only works with fields from the same project.
- 3. It can be used in:
- Field labels.
- Field footnotes.
- Section headers or Matrix of fields.
- Labels for single response, multiple response or regulatory bar field options.
- Surveys: instructions, finalisation text, invitation, tail and URL.
- QDEFAULT



Build a piping

- 1. Define a field
- 2. In a different field, add the value of the first field.
- 3. Use the field name (not the field label) in one of the options previously shown. Example: [date_birth]



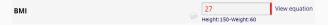
Logic context: Add weight and height in the field note of the BMI field.

Solution

Go to the BMI field and add to the field note: "Height: [height]- Weight: [weight]"



2. The result is:





Action tags (Action Tags) are an excellent way to personalise your project.

• Properties:

- They are special terms that begin with the symbol «@».
- Each action TAG has a predefined action in the field.
- They must be located in the field annotation.
- **Limitations:** There is no "technical" limitation for a single field, but if you use more than one action make sure you put a space or a line break between them.



• Check available actions: by clicking (Action Tags) available in the field annotation.



It shows the name, a description of the action it performs, and instructions on how to use it.





- Some of the most common ones are:
 - **@HIDDEN**: The field will not be displayed.
 - **QTODAY**: Assigns by default today's date in a date field.
 - **QDEFAULT**: Assigns a default value to a field. For example:
 - Date by default: **@DEFAULT** = '2007-12-25'»
 - Option(category) by default: «@DEFAULT = '1'»

Activity: @Action Tags

- Create the variable Registry creation date and assign today's date by default.
- Set the default value of the *Menopause* variable to "Yes".
- A new patient comes in. What happened?

Solution

1. Create the variable Registry creation date and assign today's date by default.

Mandatory:

• Field type: Text Box

Field label: Registry

creation date

Variable name: date_registry

Conditions:

Validation: Date (D-M-Y)

Others

Anotation of the field:

@TODAY





• Each time you save the instrument the date will be updated to that day.



2 Set the default value of the Menopause variable to "Yes".



Solution

3 A new patient comes in. What happened?

An error message appears. The variable *Menopause* is not shown because the record has not been identified as corresponding to a female, yet it has an assigned value. Remove the <code>@DEFAULT</code> action tag from the *Menopause* field to make the error disappear.





• Be careful when using **@DEFAULT** in fields that have branching logic.

Thank you and see you tomorrow!

