



# Session 1: Build a project from scratch

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Biostatistics Research and Support Unit (BRU)

IGTP

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# Content

## **Introduction to REDCap**

1. What is REDCap?
  2. Current situation
  3. Advantages
- 

## **First access to REDCap**

1. How to access REDCap
2. Global setup
3. Create your first project

## **Design of an Electronic Case Report Form**

1. Project setup
  2. Online designer
  3. Identifier
  4. Fields
-

# Introduction to REDCap

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# Introduction to REDCap

## 1. What is REDCap?



Definition



Motivation

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## 2. Current situation



Supply



In our current environment

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## 3. Advantages

# What is REDCap?



## Definition

A web application for entering data in research studies.

- It was developed in 2004 by **Vanderbilt University** with the support of the United States National Institute of Health.
- It is distributed under a license agreement owned by Vanderbilt University with a non-commercial use agreement.

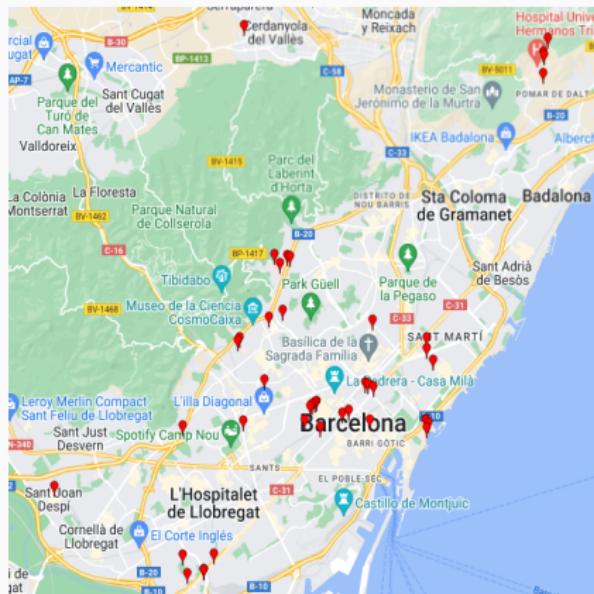
# Current situation



# Current situation



## In our current environment



# Advantages

1. **Web-based:** A web connection (with double authentication) from anywhere.



2. **Flexible:** You can personalize your questionnaire using programming.



3. **Multi-Access:**

- Several users/institutions can use it.
- It can be used on multiple devices (smartphones, tablets and computers).

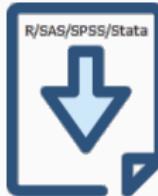


# Advantages

4. **Traceability:** It keeps track of changes to data and user activity.



5. **Data Exports:** Export procedures to common statistical packages (R, SAS, SPSS and Stata).



# Advantages

## 6. Regulation:

REDCap complies with all the standards demanded by the United States Food and Drug Administration and other international bodies.

- 21 Code of Federal Regulation Part 11
- Federal Information Security Modernization (FISMA)
- Health Insurance Portability and Accountability Act (HIPAA)
- The EU general data protection regulation (GDPR)



# Advantages

7. **Security:** It allows study data to be stored securely on server within your borders, in compliance with local legislation.
8. **Constant updates and improvements**

## First access to REDCap

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# First access to REDCap

## 1. How to access REDCap



Access for a new user



Access to REDCap IGTP

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## 2. Global setup



Definition



Functionalities

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## 3. Create your first project



Project request



## Access for a new user

[This message was automatically generated by REDCap]

A REDCap account has been created for you in which your REDCap username is [REDACTED]. Click the link below to set your new password and log in.

After logging in, please make sure to [set up your password recovery question](#), which will allow you to use the 'Forgot your password?' link on the login page without the need to contact the REDCap Administrator. You will be prompted to set your recovery question on the My Projects page, but you can also set it on your 'My Profile' page under 'Login-related options'.

[Set your new REDCap password](#)

# How to access REDCap

## Access to IGTP REDCap

- Link: <https://redcap.igtp.cat>
- Identifier: *COURSE\_FIRSTLETTERNAMEsurname*
- Password: *Chosen by the user*



**Log In**

Please log in with your user name and password. If you are having trouble logging in, try clicking the "Forgot your password" link below.

Username:

Password:

[Forgot your password?](#)

# Global setup



## Definition

The global setup displays your activity within the institution's REDCap

## ⚙️ Functionalities

### Home

- Welcome to REDCap!

### My projects

- Visualise all your projects
- Organize them easily

### + New project

- Create a new project

### Help & FAQ

- Find answers to your questions

### Training Videos

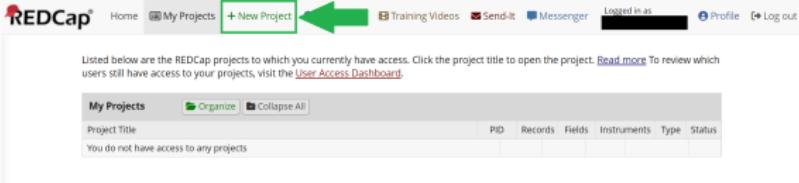
- Tutorial videos.

The screenshot shows the REDCap interface with the title 'REDCap' at the top. Below it is a navigation bar with links: Home, My Projects (which is highlighted), + New Project, Help & FAQ, Training Videos, and Messenger. On the far right, it says 'Logged in as [redacted]' and 'More ▾'. The main content area is titled 'My Projects' and contains a message: 'Listed below are the REDCap projects to which you currently have access. Click the project title to open the project. [Read more](#) To review which users still have access to your projects, visit the [User Access Dashboard](#)'. Below this is a table with columns: Project Title, PID, Records, Fields, Instruments, Type, and Status. A note at the bottom of the table says 'You do not have access to any projects'.

# Create your first project

## Project request

1. Access the global setup.
2. Create a new project.
  - + New project.



The screenshot shows the REDCap homepage. At the top, there is a navigation bar with links for Home, My Projects (which is highlighted with a green box and a green arrow pointing to it), Training Videos, Send-it, Messenger, Profile, and Log out. Below the navigation bar, a message reads: "Listed below are the REDCap projects to which you currently have access. Click the project title to open the project. [Read more](#). To review which users still have access to your projects, visit the [User Access Dashboard](#)." A table titled "My Projects" is displayed, showing columns for Project Title, Organize, Collapse All, PID, Records, Fields, Instruments, Type, and Status. The table currently displays the message: "You do not have access to any projects".

# Create your first project

## Project request

3. Required information
  - 3.1. Project title
  - 3.2. Purpose
  - 3.3. Creation options
4. Optional information
  - 4.1. Project folder
  - 4.2. Project notes

+ Create a new REDCap Project

You may begin the creation of a new REDCap project on your own by completing the form below and clicking the Create Project button at the bottom.

**Project title:** FIRSTLETTERNAMEsurname

**Project's purpose:** Practice / just for fun

**Project notes (optional):**  
Description of the project's use or purpose  
(Displayed on the My Projects page)

**Project creation option:**

Empty project (blank slate) ←

Upload a REDCap project XML file (CDISC ODM format) ?

Use a template (choose one below)



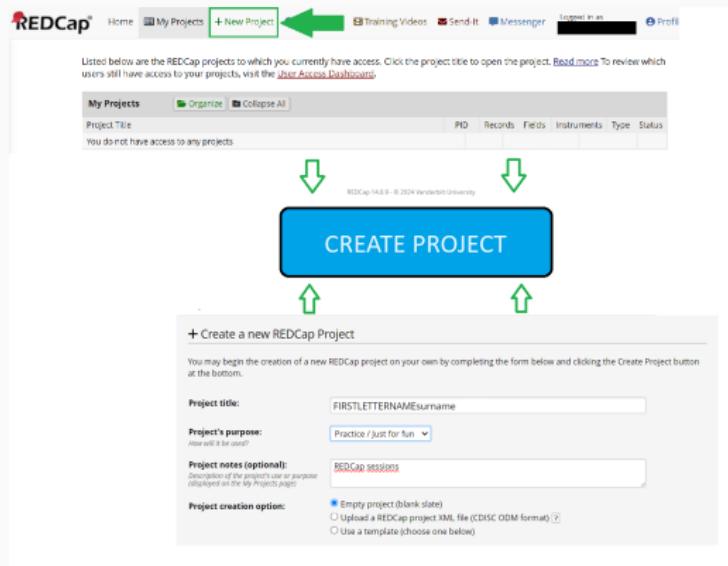
### Remarks

- Access to the project will be available for one month.

# Create your first project

## Project request

4. Click + New project



The screenshot shows the REDCap interface. At the top, there's a navigation bar with links for Home, My Projects, + New Project, Training Videos, Send It, Messenger, Logged in as [username], and Profile. A large green arrow points to the '+ New Project' button. Below the navigation is a message: "Listed below are the REDCap projects to which you currently have access. Click the project title to open the project. [Read more](#) To review which users still have access to your projects, visit the [User Access Dashboard](#)". Underneath, there's a table header for "My Projects" with columns: Project Title, Organize, Collapse All, PID, Records, Fields, Instruments, Type, and Status. A message below the table says "You do not have access to any projects". In the center, there's a large blue button with white text that says "CREATE PROJECT". Four green arrows point upwards from the bottom towards this button. Below the button, there's a form titled "+ Create a new REDCap Project". It contains fields for "Project title" (with placeholder "FIRSTLETTERNAMEsurname"), "Project's purpose" (with dropdown options like "Practice / just for fun"), "Project notes (optional)" (with placeholder "Description of the project's use or purpose (displayed on the My Projects page)"), and "Project creation option" (with radio buttons for "Empty project (blank slate)", "Upload a REDCap project XML file (CDISC ODM format)", and "Use a template (choose one below)". The "Empty project (blank slate)" option is selected.

5. The REDCap administrator must approve your request.

# **Designing an Electronic Case Report Form**

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# Designing an Electronic Case Report Form

## 1. Project setup

 Definition

 Access

 Functionalities

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## 2. Online Designer

 Definition

 Access

 Functionalities

 Activity

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## 3. Identifier

 Definition

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## 4. Fields

 Definition

 Creation

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### 4.1. Unstructured fields

 Definition

 Activity

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### 4.2. Structured fields

 Definition

 Activity

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### 4.3. Special fields

 Definition

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### 4.4. Self-calculated fields

 Activity

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### 4.5. Descriptive fields

 Definition

 Activity

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### 4.6. Matrix of fields

 Definition

 Properties

 Creation

 Activity

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# Project setup



## Definition

The global setup gives you access to all the configuration options and features within your project.



## Access

Click on the project.

Listed below are the REDCap projects to which you currently have access. Click the project title to open the project. [Read more](#) To review which users still have access to your projects, visit the [User Access Dashboard](#).

My Projects		Organize	Collapse All	Filter projects by title					
Project Title				PID	Records	Fields	Instruments	Type	Status
REDCap			◀	455	0	2	1 Formulario	■	↗

# Project setup

## ⚙️ Functionalities

On the left panel you will find:

### Project Home and Design

#### Project design

#### Data collection

#### Data management

#### Applications

#### Applications and functionalities

#### External modules

#### Extra functionalities

#### Help & information

#### Contact the administrator

The screenshot shows the REDCap Project Setup interface. At the top, there's a navigation bar with links for Project Home, Project Setup, Other Functionality, and Project Revision History. The Project status is listed as Development, with 0 completed steps of 7.

**Main project settings** section includes:

- Enable surveys in this project? (checkbox)
- Use longitudinal data collection with defined events? (checkbox)
- Use the MyCap participant-facing mobile app? (checkbox)
- Modify project title, purpose, etc.

**Design your data collection instruments** section includes:

- Add or edit fields on your data collection instruments. This may be done by either using the Online Designer (online method) or by uploading a Data Dictionary (offline method). Quick links: [Download PDF of data dictionary](#), [Download the current Data Dictionary](#).
- Online Designer (button)
- Data Dictionary (button)
- Check for updates (button)
- Learn how to use (button)
- Create Variables (button)
- Create Tags (button)
- Hold Brokering (button)
- Special Functions (button)

**Enable optional modules and customizations** section includes:

- Repeating instruments (checkbox)
- Auto-numbering for records (checkbox)
- Scheduling module (longitudinal only) (checkbox)
- Automation module (checkbox)
- Design an email field for communications (including survey invitations and alerts) (checkbox)
- Avviso SMS and Voice call services for surveys and alerts (checkbox)
- SendGrid Template email services for Alerts & Notifications (checkbox)

**Additional customizations** section includes:

- Customize survey logic (checkbox)
- Customize alert logic (checkbox)
- Customize reporting logic (checkbox)

**Set up project bookmarks (optional)** section includes:

You may create custom bookmarks to webpages that exist inside or outside of REDCap. These bookmarks will be seen as links on the left-hand project menu and can be accessed at any time by users who are given

# Project setup

## ⚙️ Functionalities

On the right panel you will find:

- Project Home
- Global setup
- Project Setup**
- Other Functionality
- Project Revision History

The screenshot shows the REDCap Project Setup interface. At the top, there's a navigation bar with links for Project Home, Project Setup, Other Functionality, and Project Revision History. The Project status is listed as Development, with 0 completed steps of 7.

**Main project settings**: This section includes a summary of survey use, longitudinal data collection, MyCap participant-facing mobile app, and a link to learn more about MyCap.

**Design your data collection instruments**: This section provides instructions for adding or editing fields in the data collection instruments, with links to online designer, data dictionary, and download PDF of data dictionary.

**Optional**: This section lists optional modules and customizations, such as repeating instruments, auto-numbering for records, scheduling module, randomization module, designing an email field for communications, availing SMS and voice call services, and enabling template email services for alerts & notifications.

**Enable optional modules and customizations**: This section includes links for Help & FAQ, Video Tutorials, Suggest a New Feature, and Contact REDCap administrator.

**Set up project bookmarks (optional)**: This section explains how users can create custom bookmarks to webpages inside or outside of REDCap.



## Definition

The **Online Designer** is used for instrument management.

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An **instrument** is a form or survey used to collect data through its **fields**.

- **Data entry:** project users
- **Acessibility:** <https://redcap.igtp.cat>
- **Visualization:** standard

# Online Designer



There are two ways to access the Online Designer:

1. Project Home and Design
2. Project Setup

The screenshot shows the REDCap project home page. On the left, under 'Project Home and Design', the 'Designer' link is highlighted with a green arrow. On the right, under 'Main project settings', the 'Online Designer' link is highlighted with a green arrow. Both links are associated with a green checkmark icon.

**Project Home**

- Logged in as [REDACTED] | Log out
- My Projects | Control Center
- REDCap Messenger
- Contact REDCap administrator

**Project Home and Design**

- Project Home | Project Setup | Designer | Codebook
- Project status: Development

**Data Collection**

- Record Status Dashboard | Add / Edit Records
- Show data collection instruments

**Applications**

- Project Dashboards | Alerts & Notifications | Multi-Language Management | Calendar | Data Exports, Reports, and Stats

**Main project settings**

Project status: Development

Completed steps 0 of 7

Not started

- Enable  Use surveys in this project? [VIDEO: How to create and manage a survey](#)
- Enable  Use longitudinal data collection with defined events? [VIDEO: How to use longitudinal data collection](#)
- Enable  Use the MyCap participant-facing mobile app? [Learn more about MyCap](#)

Modify project title, purpose, etc.

Not started

Design your data collection instruments

Add or edit fields on your data collection instruments. This may be done by either using the Online Designer (online method) or by uploading a Data Dictionary (offline method). Quick links: [Download PDF of all instruments](#) OR [Download the current Data Dictionary](#)

Online Designer |  Data Dictionary | Explore the [REDCap Instrument Library](#)

You have checked the [Check For Identifiers](#) page to ensure all identifier fields have been tagged!

Learn how to use:  [Smart Variables](#)  [Piping](#)  [Action Tags](#)  [Field Embedding](#)  [Special Functions](#)

# Online Designer

## Functionalities

### Add new instrument

- Create
- Import from the library or other projects

### Instrument actions

- Rename
- Copy
- Delete
- Download the instrument in a ZIP file

The Online Designer will allow you to make project modifications to fields and data collection instruments very easily using only your web browser. NOTE: While in development status, all field changes will take effect immediately in real time.

Instrument name	Fields	View PDF	Instrument actions
Form 1	1		Choose action Renaming Copy Delete Download instrument ZIP

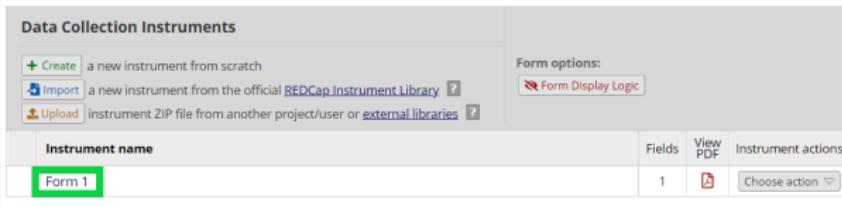


### Remarks

- Every project must include at least one instrument.
- Every project must include at least one field.
- The number of instruments is unlimited.

# Online Designer

By default, when you create a project in REDCap, it includes an instrument called *Form 1*.



The screenshot shows the 'Data Collection Instruments' section of the REDCap interface. At the top, there are three buttons: '+ Create' (a new instrument from scratch), 'Import' (a new instrument from the official REDCap Instrument Library), and 'Upload' (instrument ZIP file from another project/user or external libraries). To the right, there is a 'Form options:' section with a 'Form Display Logic' button. Below these are two tables. The first table has columns for 'Instrument name' and 'Fields'. It contains one row with 'Form 1' in the 'Instrument name' column and '1' in the 'Fields' column. The second table has columns for 'View PDF' and 'Instrument actions'. It also contains one row for 'Form 1'. A green box highlights the 'Form 1' entry in the first table.

Instrument name	Fields	View PDF	Instrument actions
Form 1	1		

## Activity: Online Designer

1. Change the name of *Form 1* to *Demographic*.
2. Delete *Form 1* (now *Demographic*).
3. Explore *Form 1* (now *Demographic*), what does it contain?

## Solution

1. Change the name of **Form 1** to **Demographic**:

*Instrument actions » Choose actions » Rename » "Demographic"*

2. Delete **Demographic**:

*Instrument actions » Choose actions » Delete*

 You can not delete **Demographic!!!**

REDCap requires that all projects include at least one instrument.

**WARNING: Cannot delete only instrument!**



You are not allowed to delete all your data collection instruments. You must keep at least one instrument. Since you only have one instrument in your project, you may thus not delete it. If you wish to replace the instrument, then you should add a new instrument, and then afterward delete this one.

**Close**

## Solution

### 3. Explore *Demographic* instrument, what does it contain?

Current instrument: **Demographic** Preview instrument

 Field Name: record\_id

Record ID

NOTE: The field above is the record ID field and thus cannot be deleted or moved. It can only be edited.

The *Demographic* instrument (former known *Form1*) contains **the identifier**.



## Definition

The **identifier** stores the unique names of the project records.

By default REDCap automatically generates sequential (correlative) identifiers.



## Definition

- **Properties:**

- ✖ Cannot be deleted.
- ✖ Cannot be moved: must remain the first field in the project.
- ✓ The field label can be changed.
- ✓ The field name can be changed.
- ✓ The identifier can be entered by the user (name/text) instead of automatic:

& Enable optional modules and customizations

Project Setup   »   Optional

Tables   ✖ Repeatable Instruments [?]  
Disable   ✓ Auto-numbering for records [?]

» Disable



### Warning

- Do not enter personal data: Names, addresses, NIF, CIP, etc.

# Fields



## Definition

A **field** is a unique piece of information within a record (such as, age). A database is composed of multiple fields.



- REDCap uses the term **field** ("Field") because it is a database term, whereas "variable" is a term used in data analysis.
- You have already seen the first and obligatory field: the identifier.



## Definition

- **Properties:** They can be created, deleted or added to the project.
- **Limitations:** There is no technical limitation, it is not recommended to create projects with more than 1000 fields.

# Fields

## Creation

1. Enter the instrument.
2. Add a field (Add field)

Current instrument: **Demographic** Preview instrument

 Field Name: `record_id`

**Record ID**

NOTE: The field above is the record ID field and thus cannot be deleted or moved. It can only be edited.

 Add Field Add Matrix of Fields Import from Field Bank

# Fields

## Creation

3. Select the field **type**: Select the type of field you want to create. Field types can be categorized into four groups:

### Unstructured

Texts

Comments

Dates, numbers, etc...

### Structured

Limited answers

Pre-defined

### Specials and self-calculated

Upload files

Automatic calculations

### Descriptives

Plain text, HTML, video, audio, images, files, etc.

### Add New Field

You may add a new project field to this data collection instrument by completing the fields below at form on this page. For an overview of the different field types available, you may view the [Field Types](#).

Field Type:

---- Select a Type of Field ----

---- Select a Type of Field ----

Text Box (Short Text, Number, Date/Time, ...)

Notes Box (Paragraph Text)

Calculated Field

Multiple Choice - Drop-down List (Single Answer)

Multiple Choice - Radio Buttons (Single Answer)

Checkboxes (Multiple Answers)

Yes - No

True - False

Signature (draw signature with mouse or finger)

File Upload (for users to upload files)

Slider / Visual Analog Scale

Descriptive Text (with optional Image/Video/Audio/File Attachment)

Begin New Section (with optional text)

Dynamic Query (SQL)

# Fields

## Creation

### 4. Define attributes:

#### Required

Field type

Field label

Variable Name

#### Conditions

Validation

Maximum-minimum

Ontology lookup

#### Others

Required

Footnote to the field

Personalise alignment

Action tags

Add New Field

You may add a new project field to this data collection instrument by completing the fields below and clicking the Save button at the bottom. When you add a new field, it will be added to the form on this page. For an overview of the different field types available, you may view the [Field Types video \(4 min\)](#).

Field Type:   Use the Rich Text Editor [\[?\]](#)

Field Label

Variable Name (utilized in logic, calls, and reports)  Enable auto naming of units based upon its Field Label?

How to use  Smart Variables  Piping  Field Embedding

Validation? (optional)   None  OR  select ontology service ...

Required?  No  Yes Always if field is blank

Identifier?  No  Yes Does the field contain identifying information (e.g., name, SSN, address)?

Custom Alignment  Align the position of the field on the page

Field Note (optional)   
Small reminder text displayed underneath field

[Learn about Action Tags](#) or [using Field Annotations](#)



## Definition

Types of unstructured fields:

1. Texts
2. Comments



# Unstructured fields

## 1. Texts:

**Field type:** Text Box

Field Type: Text Box (Short Text, Number, Date/Time, ...)

**Utilities:** Free text

**Validation**

- Dates, numbers, electronic mails, phone numbers, etc.
  - Maximum-minimum
  - Bio-medical ontologies
- 

## 2. Comments:

**Field types:** Notes Box

Field Type: Notes Box (Paragraph Text)

**Utilities:** Clinical notes, descriptions...

**Validation:** Does not apply

# Unstructured fields

## Activity: Creation of unstructured variables

Demographic form				
	Label	Name	Units	Remarks
	Record ID	record_id		
	Weight	weight	kg	Limitations: [45;150]
	Height	height	cm	Limitations: [145;240]
	Birth date	date_birth	D-M-Y	

# Unstructured fields

## Solution: Weight

Solution steps:

1. Enter to instrument Demographic
2. Add a new field (Add field)

# Unstructured fields

## Solution: Weight

- To create the weight variable select the **field type**: *Text Box*

- Select the attributes:

### Mandatory:

- Field type: *Text Box*
- Field label: Weight
- Variable name: weight

### Conditions:

- Validation: Number
- Minimum: 45 - Maximum: 150

### Others:

- Field note: kg

The screenshot shows the 'Field Properties' dialog box in REDCap. The 'Field Type' is set to 'Text Box (Short Text, Number, Date/Time, ...)'. The 'Field Label' is 'Weight'. The 'Variable Name' is 'weight'. Under 'Validation?', 'Number' is selected with 'Minimum: 45' and 'Maximum: 150'. The 'Field Note (optional)' is 'kg'. Other tabs like 'Smart Variables', 'Paging', and 'Form Embedding' are visible.



### Remarks

- Names of the fields: without accents, spaces, capital letters, special characters, etc.
- REDCap does not recommend field names with more than 26 characters.

# Unstructured fields

## Solution: Height

1. To create the height variable select the **field type**: *Text Box*
2. Select the attributes:

### Mandatory:

- Field type: *Text Box*
- Field label: Height
- Variable name: height

### Conditions:

- Validation: Number
- Minimum: 145 - Maximum: 240

### Others

- Field note: cm

The screenshot shows a configuration dialog for a field. At the top, the 'Field Type' is set to 'Text Box (Short Text, Number, Date/Time, ...)' and the 'Field Label' is 'Height'. Below the label, there's a checkbox for 'Use the Rich Text Editor' which is unchecked. On the right side, under 'Variable Name', it says 'height' with a note: '(utilized in logic, calc., and export) Only letters, numbers, and underscores. Based upon its Field Label?' There are three buttons: 'Smart Variables', 'Prompt', and 'Field Embedding'. Under 'Validation?', it's set to 'Number' with 'Minimum: 145' and 'Maximum: 240'. A note below says: 'Tip for min/max limits: you may pipe a value from another field to set dynamic range limits, e.g. {date, date} or {event, 1, event, 1}. You may also use the word today or now if it's wrapped in quotes for calendar fields.' Below that is a section for 'Action Tags / Field Annotation (optional)' with a note: 'Learn about Action Tags or use Field Annotation'. At the bottom, there are sections for 'Required?', 'Identifier?', 'Custom Alignment', 'Field Note', and buttons for 'Save' and 'Cancel'.

# Unstructured fields

## Solution: Date of birth

1. To create the birth date variable select the **field type**: *Text Box*
2. Select the attributes:

### Mandatory:

- Field type: *Text Box*
- Field label: Date of birth
- Field name: d\_birth

### Conditions:

- Validation: Date (D - M - Y)

The screenshot shows a configuration dialog for a 'Text Box' field. The 'Field Type' is set to 'Text Box (Short Text, Number, Date/Time, ...)'. The 'Field Label' is 'Date of birth'. The 'Variable Name' is 'date\_birth' (utilized in logic, calc., and exports). The 'Validation' section specifies 'Date (D-M-Y)' for both 'Minimum' and 'Maximum' fields, with a note about piping values from another field to set dynamic range limits. The 'Required?' field is set to 'No'. The 'Identifier?' field is set to 'Yes'. The 'Custom Alignment' is 'Right / Vertical (RV)'. A 'Field Note' is present with the text 'Small reminder text displayed underneath field'. At the bottom are 'Save' and 'Cancel' buttons.

# Structured fields



## Definition

Structured field type:

1. Single answer
2. Multiple answers



# Structured fields

## 1. Single answer:

**Field type:** Drop down

**Visualization:** Fold-out list

Field Type: Multiple Choice - Drop-down List (Single Answer)

**Field type:** Radio Buttons

**Visualization:** Buttons

Field Type: Multiple Choice - Radio Buttons (Single Answer)

**Field type:** Yes-No

**Visualization:** Predefined Buttons

Field Type: Yes - No

# Structured fields

## 1. Single answer:

**Field type:** True-False

**Visualization:** Predefined Buttons

Field Type: True - False

**Field type:** Slider

**Visualization:** Likert Scale of 0-?  
Slider bar

Field Type: Slider / Visual Analog Scale

# Structured fields

## 2. Multiple answers:

**Field type:** Checkboxes

Field Type: Checkboxes (Multiple Answers) ▾

**Visualization:** Check



### Remarks

- Creating a new checkbox category generates a new field in the database.
- If the category has been checked, it is saved as "Checked".
- If the category has not been checked, it is saved as "Unchecked".

# Structured fields

## Activity: Structured fields

Demographic form				
	Label	Name	Remarks	Categories
	Sex	sex	Radio Buttons (single answer)	... 0, Female 1, Male
	Medication	medication	Checkboxes (Multiple Choice)	0, Statins 1, Anticoagulants 2, Antidiabetics

# Structured fields

## Solution: Sex

1. To create the variable sex select *Radio Buttons*
2. Select the attributes:

### Mandatory:

- Field type: *Radio Buttons*
- Field label: Sex
- Variable name: sex

### Conditions:

- Choices:
  - 0, Female
  - 1, Male

The screenshot shows a configuration interface for a structured field. At the top, the 'Field Type' is set to 'Multiple Choice - Radio Buttons (Single Answer)'. The 'Field Label' is 'Sex'. The 'Variable Name' is 'sex'. The 'Choices' section contains two options: '0, Female' and '1, Male'. The 'Required?' field is checked for 'Yes'. The 'Identifier?' field is checked for 'No'. The 'Custom Alignment' is set to 'Right / Vertical (RV)'. A 'Field Note' is present. Action tags and field annotations are listed at the bottom.

Field Type: Multiple Choice - Radio Buttons (Single Answer)

Field Label: Sex

Variable Name: sex

Choices (one choice per line):  
0, Female  
1, Male

Required?  Yes

Identifier?  No

Custom Alignment: Right / Vertical (RV)

Action Tags / Field Annotation (optional)

Save Cancel

# Structured fields

## Solution: Medication

1. To create the variable medication select *Checkbox*
2. Select the attributes:

### Mandatory:

- Field type: *Checkbox*
- Field label: Medication
- Variable name: medication

### Conditions:

- Choices:
  - 0, Statins
  - 1, Anticoagulants
  - 2, Antidiabetics

The screenshot shows a configuration interface for a 'Medication' field. The top section is titled 'Field Type: Multiple Choice - Radio Buttons (Single Answer)'. The 'Field Label' is set to 'Medication'. The 'Variable Name' is 'medication'. Under 'How to use:', there are buttons for 'Insert variables', 'Linking', and 'Field Embedding'. The 'Required?' option is set to 'No'. The 'Identifier?' option is set to 'No'. The 'Custom Alignment' is set to 'Right / Vertical (RV)'. A 'Field Note' is present with the text 'Small reminder text displayed underneath field'. At the bottom right are 'Save' and 'Cancel' buttons.

Field Type: Multiple Choice - Radio Buttons (Single Answer)

Field Label: Medication

Variable Name: medication

Choices (one choice per line):  
0, Statins  
1, Anticoagulants  
2, Antidiabetics

Action Tags / Field Annotation (optional)

Save Cancel

# Special fields



## Definition

Types of special fields:

1. Signature
2. Upload files

# Special fields

## 1. Signature:

**Field type:** Signature



**Utilities:** Allows users to provide a digital signature.

**Properties:**

- Capture a small JPEG image file.
- Works on both computers and touchscreen devices.

## Special fields

### 2. Upload files:

**Field type:** File Upload

Field Type: File Upload (for users to upload files)

**Utilities:** Allows users to upload files in any format.

**Properties:**

- REDCap only stores the file.
- Maximum upload size of 25 MB per file.



#### Warning

- Data and images cannot be downloaded together.
- Images must not contain any personal identification data.

# Self-calculated fields

## 1. Self-calculated:

**Field type:** Calculated Field



**Utilities:**

- Simple calculations (e.g. Body Mass Index - BMI)
- Scores

**Properties:** Limited to fields within the same record.

**Standard functions:** +, -, /, \*, ^

**Special functions:**

- [datediff\(\)](#) (It calculates the difference between two dates)
- [sum\(\)](#)
- [mean\(\)](#)
- [if\(\)](#)
- Complete list Learn how to use Special Functions

## ✓ Compose a basic equation

- The result is a number.
- To compose it, you need to define the following elements:
  - Field(s): To use a REDCap field, enclose the field in the same square brackets (not its label). E.g. `[age]`
  - Functions/Operators: E.g. `+` or `datediff()`
  - Equation: E.g. `[weight] + [height]`

# Self-calculated fields



## Activity: Self-calculated fields

Demographic form			
	Label	Name	Calculation
	...	...	...
	BMI	bmi	[weight]/([height]/100)^2
	Age	age	rounddown(datediff("today", [date_birth], "y"))
	Age > 65	age_65	if([age] > 65,1,0)

# Self-calculated fields

## Solution: BMI

$$BMI = \frac{Weight \ (kg)}{(Height \ (cm)/100)^2}$$

1. To create the variable bmi select *Calculated Field*
2. Select the attributes:

### Mandatory:

- Field type: *Calculated Field*
- Field label: BMI
- Variable name: bmi

### Equation:

- [weight]/([height]/100)<sup>2</sup>

The screenshot shows the 'Codebook' interface for creating a calculated field named 'bmi'. The 'Field Type' is set to 'Calculated Field'. The 'Field Label' is 'BMI'. The 'Variable Name' is 'bmi'. The 'Calculation Equation' is set to `round([weight]/([height]/100)^2)`. Other settings include 'Required?' set to 'No', 'Identifier?' set to 'No', 'Custom Alignment' set to 'Right / Vertical RV', and a note about displaying underscores.

Field Type: Calculated Field

Field Label: BMI

Variable Name: bmi

Calculation Equation: round([weight]/([height]/100)^2)

Required?: No

Identifier?: No

Custom Alignment: Right / Vertical RV

Field Note (optional): small rounded two decimal places field

# Self-calculated fields

## Solution: Age as of Today

1. To create the variable age today select *Calculated Field*
2. Select the attributes:

### Mandatory:

- Field type: *Calculated Field*
- Field label: Age
- Variable name: age

### Equation:

- ```
rounddown(datediff("today",
[date_birth],"y"))
```

The screenshot shows a form configuration interface with the following details:

- Field Type:** Calculated Field
- Field Label:** Age
- Calculation Equation:** rounddown(datediff("today", [date\_birth], "y"))
- Variable Name:** age (utilized in logic, calculations, and exports)
- Required?\***: No (radio button selected)
- Identifier?**: No (radio button selected)
- Custom Alignment:** Right / Vertical (RV)
- Field Note (optional):** Small reminder text displayed underneath field



### Remarks

- The argument *today* returns the current day.
- The function *round()* rounds the result to the nearest integer.
- The *age* value will be updated automatically each time the form is filled in.
- The function *datediff()* takes the more recent date as the first argument and the older date as the second.

# Self-calculated fields

## Solution: person over 65 years of age

1. To create the variable age\_65 select *Calculated Field*
2. Select the attributes:

### Mandatory:

- Field type: *Calculated Field*
- Field label: Age > 65
- Field name: age\_65

### Equation:

- `if([age] > 65, 1, 0)`

The screenshot shows the configuration of a calculated field named 'age\_65'. The 'Field Type' is set to 'Calculated Field'. The 'Field Label' is 'Age > 65'. The 'Calculation Equation' is set to `If([age] > 65, 1, 0)`. The 'Variable Name' is 'age\_65'. The 'Required?' option is set to 'No'. The 'Identifier?' option is set to 'Yes'. The 'Custom Alignment' is set to 'Right / Vertical (RV)'. A note at the bottom right says 'Small rendered test displayed underneath field'.



### Remarks

- The first argument is the logical condition to be evaluated.
- The second argument is the value assigned **if** the condition is true.
- The third argument is the value assigned **if** the condition is false.



## Definition

Types of descriptive fields:

1. Descriptive field
2. Section header

# Descriptive fields

## 1. Descriptive field:

**Field type:** Descriptive Text

Field Type: Descriptive Text (with optional Image/Video/Audio/File Attachment) ▾

**Utilities:** It displays online content such as files and allows file downloads, or shows informative text.

**Properties:**

- Texts, videos from online platforms, audios, images, files, etc.
- File size limit of 25 MB.

## 2. Section header:

**Field type:** Begin New Section

Field Type: Begin New Section (with optional text)



### Utilities:

- Enhancement and to separate groups of fields.
- It can be used in surveys to create separate pages.



### Activity

- Attach the header "Demographic Fields" at the beginning of the instrument.
- Customize the header style to your preference.

# Descriptive fields

## Solution

1. Attach the header "Demographic Fields" at the beginning of the instrument

### Mandatory:

- Field type: *Begin New Section*
- Field label: Demographic Fields

Field Type: Begin New Section (with optional text)

Field Label  ?

Demographic Fields



### Remarks

- It cannot be added before the identifier.
- It cannot be created if there is no field following it.

# Descriptive fields

## Solution

2. Customize the header style to your preference.



Use *Use the Rich Text Editor* to change the style by means of panels.

The screenshot shows a configuration panel for a field. At the top, there's a dropdown labeled "Field Type: Begin New Section (with optional text)". Below it is a "Field Label" input field. To the right of the label is a checked checkbox labeled "Use the Rich Text Editor" with a help icon. The main area is a rich text editor toolbar with icons for Paragraph, Bold (B), Italic (I), Underline (U), Alignment (A), Insert (link, image, file), and other document controls. Below the toolbar is a section titled "Demographic Fields".



### Remarks

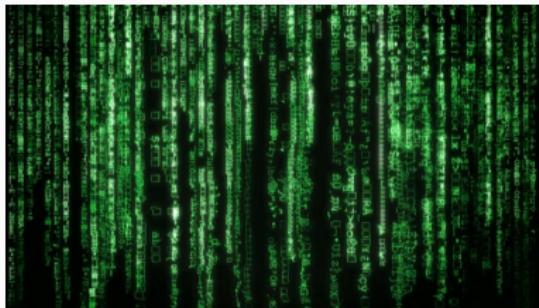
- It can be used to modify the label of all types of fields.
- It supports HTML code.
- It allows you to create tables and insert images, just like a standard text editor.

# Matrix of fields



## Definition

A matrix groups together a set of **fields** that share the same set of possible answers.





## Definition

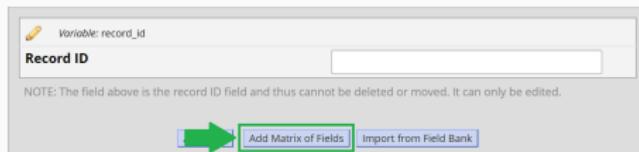
- **Properties:**

1. They can be created, deleted and stored in the project.
2. Used for structured fields such as single-choice or multiple-choice questions.
3. Two fields in the matrix can not have the same selected value for a given column (select only 1 option per column).
4. Rows represent the questions/fields, and columns represent the possible answer options.

# Matrix of fields

## Creation

1. Add a matrix (*Add Matrix of Fields*).



# Matrix of fields

## Creation

2. Choose the attributes: When adding a new matrix, you can specify the attributes of the Matrix of Fields in REDCap:

### Mandatory

Fields label

Fields name

Matrix name

Options (choices)

### Others

Matrix header

Required

Ranking

**Add Matrix of Fields**

You may add or edit a matrix (i.e. grid) of project fields on this data collection instrument by completing the fields below. By providing all necessary info below and clicking Save, the new matrix of fields will be added to the form on this page. A Field Label and Variable name must be provide for each field in the matrix, and you must also set the Choices (i.e. matrix column headers) and answer format (Single Answer vs. Multiple Answers) for the entire matrix. [View a matrix example](#) or [Read more about matrix fields](#) on the Help & FAQ.

**Matrix Header Text (optional)**

**Matrix Rows**  
Each row represents a different field with its own label and variable name.

Enable auto naming of variable based upon its Field Label?

|                                                                                                     |                                                                                                       |                                                                                                    |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Field Label</b><br><input type="text"/><br><small>ONLY letters, numbers, and underscores</small> | <b>Variable Name</b><br><input type="text"/><br><small>ONLY letters, numbers, and underscores</small> | <b>Required?</b> <input type="checkbox"/> <b>Field Annotation</b> <input type="button" value="X"/> |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|

**Matrix Column Choices**  
Choices (one choice per line) [Copy existing choices](#)

**Other Matrix Info**

**Answer Format:** Single Answer (Radio Buttons)

**Ranking:** What is a ranked matrix of fields?  
 Allow only 1 choice to be selected per column (radio buttons only)

**Matrix group name:** ONLY letters, numbers, and underscores  
What is a matrix group name?

**Save** **Cancel**

# Matrix of fields

## Activity: Matrix of fields (comorbidities)

| Demographic form |                     |            |                        |
|------------------|---------------------|------------|------------------------|
|                  | Label               | Name       | Remarks                |
|                  | ...<br>Hypertension | ...<br>hta | ...<br>0, No<br>1, Yes |
|                  | EPOC                | epoc       | 0, No<br>1, Yes        |
|                  | Diabetes mellitus   | dm         | 0, No<br>1, Yes        |

# Matrix of fields

## Solution: Matrix of comorbidities

1. To create the comorbidities select *Add Matrix of Fields*.
2. Select the attributes:

### Mandatory:

- Label/Field name:
  - Hypertension / hta
  - EPOC / epoc
  - Diabetes mellitus / dm
- Matrix name: comorbidities
- Options:
  - Choices:
    - 0, No
    - 1, Yes

**Matrix Header Text (optional)**

Comorbidities Expand

**Matrix Rows**  
Each row represents a different field with its own label and variable name.

Enable auto naming of variable based upon its Field Label?

| Field Label       | Variable Name | Required?                | Field Annotation                                        |
|-------------------|---------------|--------------------------|---------------------------------------------------------|
| Hypertension      | hta           | <input type="checkbox"/> | <input type="text"/> <span style="color: red;">X</span> |
| COPD              | copd          | <input type="checkbox"/> | <input type="text"/> <span style="color: red;">X</span> |
| Diabetis mellitus | dm            | <input type="checkbox"/> | <input type="text"/> <span style="color: red;">X</span> |

[Add another row](#)

**Matrix Column Choices**

Choices (one choice per line) [Copy existing choices](#)

0, No  
1, Yes

How do I manually code the choices?

**Other Matrix Info**

**Answer Format:** Single Answer (Radio Buttons)

**Ranking:** What is a ranked matrix of fields?  Allow only 1 choice to be selected per column (radio buttons only)

**Matrix group name:** ONLY letters, numbers, and underscores [What is a matrix group name?](#)

comorbidities

Thank you and see you  
tomorrow!

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