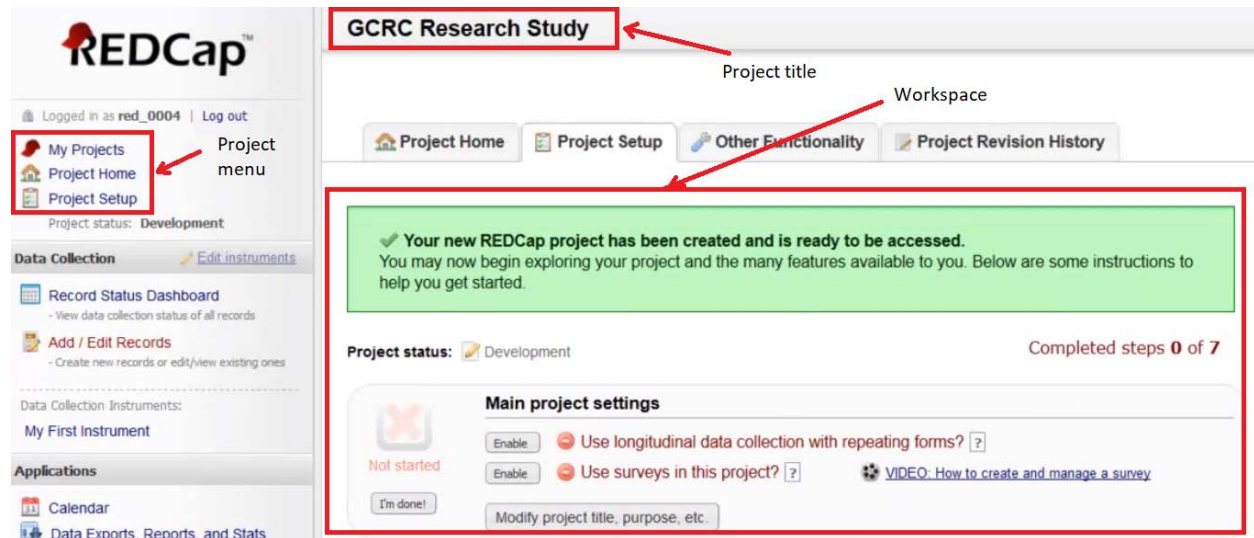


REDCap allows to choose from the list of the following purposes: 1) Practice/Just for fun, 2) Operational Support, 3) Research, 4) Quality Improvement, and 5) Other. Then you select an option to start your project from scratch or use a predefined template. REDCap has a number of templates for different types of data. Click on “Create Project” button. Now your project is created and will open immediately.

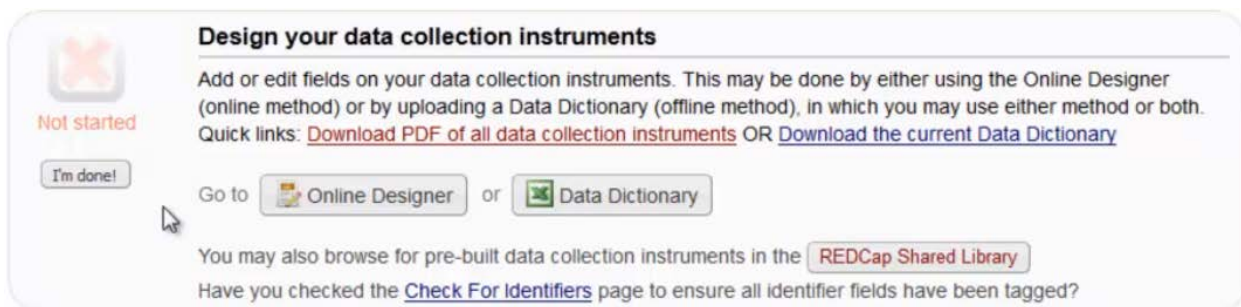
Project Development

After you create the project, it opens immediately.



The REDCap window contains the project menu, title, and the main workspace. You will see four tabs on top of the workspace part of the screen: Project Home, Project Setup, Other Functionality, and Project Revision History. By default, the Project Setup tab is displayed immediately after project creation. This tab contains a list of steps to help design and test your project. When you first create your project, it opens in “development” status. During the project development, the Project Setup tab is your project homepage.

The main focus of project development is designing data collection instruments (surveys and databases). These instruments are first built through tools available on the Project Setup tab. Then, they are found in the menu’s Data Collection section. This section is where project data is added, modified, or deleted.



Data collection instruments can be built using either the Online Designer or the Data Dictionary.

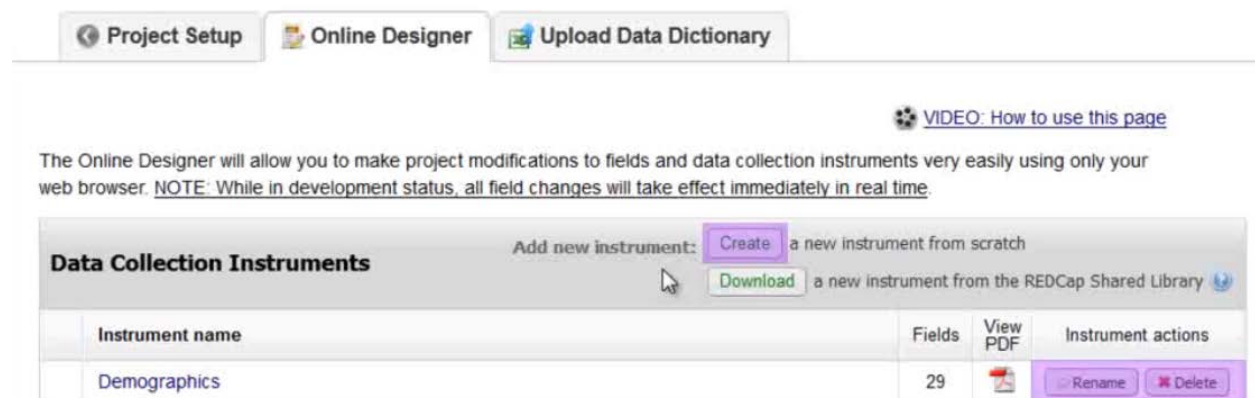
Instrument Design and Development²

The design (content and layout) of your data collection instruments is unique to your REDCap project. You may have multiple instruments within the same project. You can choose different names for the instruments within the same project, types of data, and data storage and display settings.

Instruments are built and modified through the Online Designer and Data Dictionary. These two methods of instrument design can be used interchangeably. You can use just one or use both. REDCap updates both tools automatically each time you make a change through either method. The Online Designer and Data Dictionary will always have the exact same information about your instruments, although they'll display it to you very differently.

The Online Designer³

The Online Designer allows you to build and manage data collection instruments dynamically. It is just one way to define and interact with your project structure. That structure controls the content and functionality of webpages during data entry.



The screenshot shows the REDCap Online Designer interface. At the top, there are three navigation tabs: "Project Setup", "Online Designer" (which is active), and "Upload Data Dictionary". Below the tabs, there is a video link: "VIDEO: How to use this page". A text block explains that the Online Designer allows for easy project modifications and includes a note: "NOTE: While in development status, all field changes will take effect immediately in real time." Below this is a section titled "Data Collection Instruments" with two buttons: "Create" (a new instrument from scratch) and "Download" (a new instrument from the REDCap Shared Library). A table lists the instruments:

Instrument name	Fields	View PDF	Instrument actions
Demographics	29		Rename Delete

Users having project design and setup rights can create, rename, or delete instruments. The instruments displayed here directly define the data entry webpages. Building and managing instruments through the Online Designer defines how you interact with the webpages during data entry. This is an important and iterative process when developing any project.

If surveys are enabled in the project, the Online Designer takes on additional functionality. To enable surveys, click on "Enable" button next to "Use surveys in this project?" question.

²

https://redcap.vanderbilt.edu/consortium/videoplayer.php?video=intro_instrument_dev.mp4&title=Introduction+to+Instrument+Development+%28+min%29&text=&referer=REDCAP_PUBLIC

³

https://redcap.vanderbilt.edu/consortium/videoplayer.php?video=online_designer01.flv&title=The+Online+Designer+%28+min%29&text=&referer=REDCAP_PUBLIC

Project Home | Project Setup | Other Functionality | Project Revision History

Project status: Development Completed steps 5 of 6

Main project settings

Complete! Use longitudinal data collection with repeating forms? [?](#)

Use surveys in this project? [?](#) [VIDEO: How to create and manage a survey](#)

Not complete?

Instruments can be individually designated as surveys. The survey settings are then defined. The Online Designer includes other survey-specific features. REDCap can send you an email notification when a new survey response arrives. It can even automatically send survey invitations to your respondents.

The Online Designer is not only where instruments are created and managed. It is also where the content of each instrument is customized. After opening an instrument, the data entry fields are displayed. This is where you define what kind of data is being collected. The Online Designer is the fastest and easiest way to add or modify fields. Choose the type of question:

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:

- Select a Type of Field ---
- Text Box (Short Text)
- 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
- Slider / Visual Analog Scale
- File Upload (for users to upload files)
- Descriptive Text (with optional Image/File Attachment)
- Dynamic Query (SQL)

REDCap allows to choose from the following types of data:

- **Text** – single-line text box (for text and numbers)
- **Notes** – large text box for lots of text
- **Dropdown** – dropdown menu with options
- **Radio** – radio buttons with options
- **Checkbox** – checkboxes to allow selection of more than one option
- **File** – upload a document
- **Calc** – perform real-time calculations
- **SQL** – select query statement to populate dropdown choices

- **Descriptive** – text displayed with no data entry and optional image/file attachment
- **Slider** – visual analogue scale; coded as 0-100
- **Yesno** – radio button with yes and no options; coded as 1, Yes|0, No
- **Truefalse** – radio buttons with true and false options; coded as 1, True|0, False

When adding fields, the Online Designer requires only two things - the field label and variable name. The **Field label** is the actual question or descriptive text. It is displayed on the data collection instrument during data entry. The **Variable name** is the key word from the field label. This name is used to store and analyze data, so keep it short and descriptive. Variable names are used in advanced features. They are not seen during data entry.

Everything else in the popup is optional and can customize the appearance and use of this field. Explore all these extras to determine which features may benefit your work.

Here are the additional options to customize the new field:

Validation (optional) - Text fields can be validated to ensure that data is entered in a consistent format.

Required? - Making a field required will display a prompt if it is left blank during data entry.

Identifier? - Fields marked as identifiers can only be exported by users having high enough permissions. Additional customizations are also available.

Existing fields can be moved short distances using drag and drop. For longer distances, and to move a field to another instrument, use the **Move** icon.



Other icons help to streamline instrument customization. The **Edit** icon opens an existing field to modify any aspect of it. The **Copy** icon creates a new field with the same field type and field label. The **Delete** icon will fully erase a field. Two advanced features defined in the Online Designer are **matrix fields** and **branching logic**.

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?

Field Label **Variable Name**
ONLY letters, numbers, and underscores **Required?***

Matrix Column Choices
Choices (one choice per line)

Other Matrix Info

Answer Format:
Single Answer (Radio Buttons)

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

Matrix fields capture data concisely by displaying a series of answer choices for multiple questions. Follow the built-in prompts and instructional text to define the matrix.

Branching logic hides fields until certain criteria is met. In this example, answering the gender question “female” will reveal the field “given birth”.

Branching Logic Syntax or by choosing the Drag-N-Drop Logic Builder method, which allows you to build your logic in a much easier fashion by simply dragging over the options you want. You may switch back and forth between each method if you wish, but please be aware that since the advanced logic allows for greater complexity, it may not be able to be switched over to the Drag-N-Drop method if it becomes too complex.

Choose method below for the following field: **given_birth** - *Has the subject given birth before?*

- Advanced Branching Logic Syntax** [\(How do I use the advanced syntax?\)](#)

Show the field ONLY if:

— OR —

- Drag-N-Drop Logic Builder**

Displaying field choices for the following data collection instrument:
Study Data

Field choices from other fields
(drag a choice below to box on right)

study_id = (define criteria)	→
last_name = (define criteria)	→
first_name = (define criteria)	→
mrm = (define criteria)	→
aspirin = Sunday (1)	→
aspirin = Monday (2)	→

Drag and Drop

Show the field ONLY if...

ALL below are true

ANY below are true

The Online Designer cannot be used to test branching logic. The best way to test instruments is to enter practice data. It is truly critical to test the instruments during development because iterative changes are made immediately and are less likely to impact real project data. Using the Online Designer method of project modification is an iterative process.

The Data Dictionary⁴

The Data Dictionary is a spreadsheet defining the structure of your project. That structure controls the content and functionality of webpages during data entry. There is a one-to-one relationship between the Data Dictionary and the Online Designer in a REDCap project. Each question or field on every data collection instrument occupies a row in the spreadsheet. The order of fields and forms in the dictionary defines the order of their appearance in the REDCap project.

4

https://redcap.vanderbilt.edu/consortium/videoplayer.php?video=redcap_data_dictionary02.flv&title=The+Data+Dictionary+%2810+min%29&text=This+10-minute+video+gives+a+thorough+overview+of+the+REDCap+data+dictionary+template+and+discusses+general%0A%09%09%09%09%09%09%09%09%09rules+and+formats+to+use+when+creating+and+editing+a+data+dictionary+for+a+REDCap+project.&referer=REDCAP_PUBLIC

	A	B	D	E	F
1	Variable / Field Name	Form Name	Field Type	Field Label	Choices, Calculations, OR Slider Labels
2	study_id	demographics	text	Study ID	
3	date_enrolled	demographics	text	Date subject signed consent	
4	last_name	demographics	text	Last Name	
5	first_name	demographics	text	First Name	
6	address	demographics	notes	Street, City, State, ZIP	
7	telephone_1	demographics	text	Phone number	
8	email	demographics	text	E-mail	
9	sex	demographics	dropdown	Gender	0, Female 1, Male
10	given_birth	demographics	dropdown	Has the subject given birth before?	0, No 1, Yes
11	num_children	demographics	text	How many times has the subject given birth?	
12	ethnicity	demographics	radio	Ethnicity	0, Hispanic or Latino 1, NOT Hispanic or Latino 2,
13	race	demographics	radio	Race	0, American Indian/Alaska Native 1, Asian 2, Nati
14	dob	demographics	text	Date of birth	

The dictionary is just one way to define the data being collected. The spreadsheet can be downloaded, modified outside REDCap, and then uploaded back into a REDCap project to change the project structure. The dictionary is most helpful when using advanced field types such as calculated or matrix fields. It is also the fastest and easiest way to copy several fields at once. The dictionary contains column headers describing what information to include in the cells below. For every data entry field on every row, there are four required columns:

Variable or field name. Variable name is a keyword or short phrase describing what kind of data will be captured in this field. Names must be unique within the project. They also must use only lower case letters, numerals, and the underscore character. The variable name is used in saving data, doing exports or reports, and advanced features like calculations or branching logic. The variable name will not be displayed on surveys and databases.

Form name. Forms are the webpages used for data entry. In a project, fields are grouped into forms to organize the data for easier use. Form names should be brief but descriptive. Like variable names, they may contain only lower case letters, numerals, and the underscore character. REDCap will automatically insert capitalization and spacing when the dictionary is uploaded. The order of form names exactly defines the order of their appearance in the project. Repeat the form name on each row to define which fields are displayed on each form.

Field type. This column defines the type of question. There are several field types available. You may find that more than one type of field could be used to capture a given type of data. For example, you may have a survey respondent type in their gender using a text box, or you may give them a multiple choice question to simply choose their answer. The challenge is to determine the field type best suited to your needs.

Field label. This column defines the actual questions or descriptive text that will be displayed on the instrument during data entry. The field label column may include any alphanumeric text, including spaces and special characters.

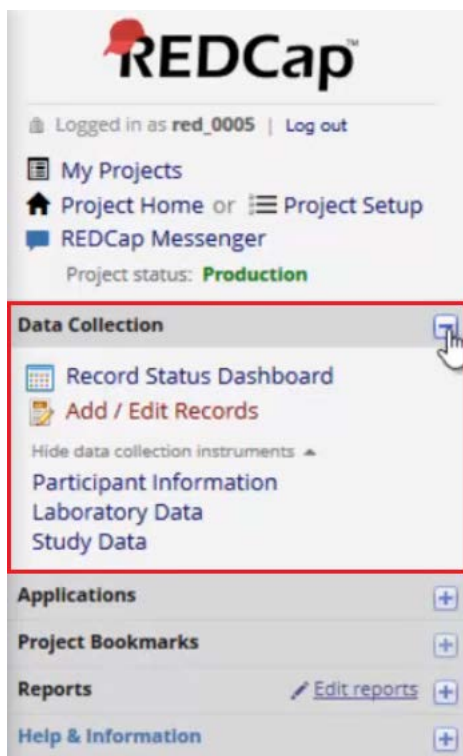
Note that an additional column is needed when using certain field types. This column defines the multiple choice answers, calculated equations, or slider labels used in those field types. When defining multiple choice answers, a unique number must be assigned to each choice. The numbers define how the data will be stored and later retrieved and analyzed. They are not seen on screen in your project. The numbers do not need to be consecutive, and there is no limit to the number of answer choices.

While developing your instruments, you should test them to make sure they work exactly as you need. Testing a project can last however long you wish. Ensure that your study team is comfortable with the data entry process and familiar with the features and applications used in management of your study data. Once ready to begin collecting real data, the project should be moved to production mode. This locks certain high-level settings and protects against data loss. The project still looks and functions as it did in development mode. Changes can still be made to the instruments through the usual methods. The project can continue to grow as your needs change. But notice that in production mode, changes no longer take effect immediately. There are a couple of extra button clicks, which ensure that no data is accidentally lost or modified.

Data Entry⁵

REDCap is mainly a tool for data collection. The two most common ways of data collection with REDCap is surveys (when invited respondents enter the data) and databases (when researcher enter the data). The latter one is common in experimental studies, phone interviews, and paper-based survey studies. In this section the focus is on data entry performed by the project researchers.

The main area used for data entry is the menu's Data Collection section.



The Record Status Dashboard displays the records that have already been created. In this example, each record or row corresponds to a different research participant in a clinical research study. The record ID is

a unique number assigned to each person. This Dashboard page is used to open existing records, by clicking the record ID numbers or the colored buttons.

Record Status Dashboard (all records)

Displayed below is a table listing all existing records/responses and their status for every data collection instrument (and if longitudinal, for every event). You may click any of the colored buttons in the table to open a new tab/window in your browser to view that record on that particular data collection instrument. Please note that if your form-level user privileges are restricted for certain data collection instruments, you will only be able to view those instruments, and if you belong to a Data Access Group, you will only be able to view records that belong to your group.

Legend for status icons:

- Incomplete Incomplete (no data saved) ?
- Unverified
- Complete

Dashboard displayed: [Default dashboard] ▾

Displaying record Page 1 of 1: "1" through "4" ▾ of **4** records ALL (4) ▾ records per page

Displaying: [Instrument status only](#) | [Lock status only](#) | [All status types](#)

Record ID	Participant Information	Laboratory Data	Study Data
1 (Geraldine Green)	●	●	●
2 (Yolanda Yellow)	●	●	●
3 (Rudy Red)	●	●	<input type="radio"/>
4 (Belinda Blue)	●	<input type="radio"/>	●

Buttons are arranged in columns, corresponding to the project’s data collection instruments. These are the data entry webpages where you can enter information about any record. They are the same links as used in the menu itself; notice that these instruments appear underneath the Add/Edit Records link.

Any existing record can be opened by selecting it from a list. Or you can open it from the Add/Edit Records menu.

Add / Edit Records

You may view an existing record/response by selecting it from the drop-down lists below. To create a new record/response, click the button below.

Total records: 4

Choose an existing Record ID -- select record -- ▾

Add new record

Data Search

Choose a field to search
(excludes multiple choice fields) All fields ▾

Search query
Begin typing to search the project data, then click an item in the list to navigate to that record.

You can also search for records by typing a key word or phrase in the Search query field. This page is also the only place where you can add a new record. By default, REDCap assigns a sequential number to each





new record and displays that at the top of the Record Home Page. Your project may call the record ID something different. Once you create a new record, you will get the following screen:

Record Home Page


 Record "5" is a new Record ID. To create the record and begin entering data for it, click any gray status icon below.

The grid below displays the form-by-form progress of data entered for the currently selected record. You may click on the colored status icons to access that form/event.

Legend for status icons:


-  Incomplete Incomplete (no data saved) 
-  Unverified
-  Complete

NEW Record ID 5

Data Collection Instrument	Status
Participant Information	
Laboratory Data	
Study Data	



To begin data entry, click any colored button for the data collection instruments. Notice that they are all gray by default, indicating that no data has yet been saved. Once you select an instrument, you will get to the data entry form. On the data collection form, the questions or descriptive text usually appear on the left, and data entry fields appear on the right.



Participant Information



 Adding new Record ID 5

Record ID 5



Participant Information

First name  

Last name  

Address  

Please include full street address, city, state, and zip code! Expand

Date of birth   Y-M-D
please use numbers and YEAR-MONTH-DAY format

The data entry form above starts with text (First name and Last name) and notes (Address) boxes. You can type in answers or use copy/paste. You can also use the Tab key to move to the next field. A green highlight will indicate where the cursor is. There may be additional text underneath a field (see in blue

under Address). That text is called a field note and will remind you of any additional instructions related to a particular question.

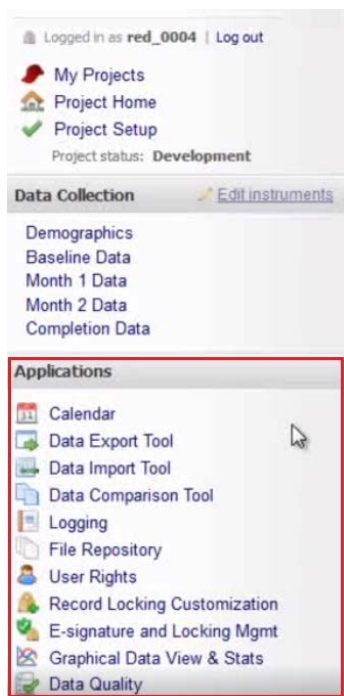
Some text fields require a specific type of formatting. This is called validation. For example, you can use validation for text fields collecting email addresses or phone numbers. This will ensure these data are entered in a proper and consistent format across the records. If the data entry person makes a mistake, REDCap will display an alert.

At the bottom of every data entry form, you'll find the form status question. The answers in this dropdown field define which color this instrument's button will be on the Record Status Dashboard. You can mark a record as complete even if some questions haven't been answered. Marking it as complete does not mean that you cannot return and modify data. The form status is a quick reference color-coding feature. It does not correspond to how many questions are truly answered on the form.

There is no auto-save in REDCap, so save early and save often. There are several save options at the bottom of the instrument and in a floating menu. Each option has slightly different functionality, so select whichever one applies for your particular situation.

Applications⁶

REDCap provides a set of tools for data management. These tools are listed in the Applications section of a project menu.



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https://redcap.vanderbilt.edu/consortium/videoplayer.php?video=redcap_db_applications_menu02.flv&title=Applications+%285+min%29&text=This+5-minute+video+provides+a+general+overview+of+the+Applications+Menu+found+within+every+REDCap+project%0A%09%09%09%09%09%09%09%09%09and+gives+details+on+what+each+application+does+and+how+it+is+used.&referer=REDCAP_PUBLIC

This list will be different for users with different access levels. You may see applications in one project that you don't have access to in another. The applications are most commonly used to manage user rights and perform searches. Data exports and imports are also commonly used applications.

User Access

This tool allows you to grant different level of permissions to your project to other people. Your study team and colleagues at other institutions can help build and test your project. You have complete control over which features and data each user can see. When you have a project with multiple data collection tools, different permissions can be assigned to each instrument. This is often useful for tightly controlling user access.

In addition to setting user access levels, REDCap enables you to conduct a complete audit trail, so you can track every user's activity. The Logging tool automatically documents every action by every user.

Choose existing project user -- select user --

OR type a new user and hit the TAB key

New user name

Comprehensive User Rights View

Username	Expiration	Calendar	Data Export Tool	Data Import Tool	Data Comparison Tool	Logging	File Repository	User Rights	Data Access Groups	Graphical Data View & Stats	Data Quality (create/edit rules)	Data Quality (execute rules)	Reports & Report Builder
elliottvj	never	✓	Full Data Set	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
red_0004	never	✓	Full Data Set	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓

The User Rights page contains information about the current users of your project. Another REDCap user can be granted access to your project by entering their username on the User Rights page. The access levels for data collection instruments and applications can then be set. Once added, the user will be able to access your project from the list on their My Projects tab.

Data Export

The Data Export Tool is a way to get data out of your REDCap project. Exports are a snapshot of your current dataset, saved as a file that can be downloaded and used externally. Exports are usually performed to re-format data for analysis, such as statistical analysis or generate charts and graphs. But exports are also a great way to concisely review data from multiple records. Remember, exporting does not remove or modify the data in your project. It only makes a copy of it in a new format and saves that file.

Data Export Tool

REDCap allows you to easily export your project data to Microsoft Excel, SAS, Stata, R, or SPSS for analysis. Exporting your data out of REDCap is as simple as you want it to be. To get a quick data dump of all records for your project, choose the Simple Export one-click option. However, if you prefer more granular control over the data you are exporting, you may choose the Advanced Export option. Whenever you perform a data export, REDCap will automatically place a back-up copy of all exported files in the File Repository, if you wish to view it later.

★ Before exporting your data, you may want to first consider using the [Data Quality module](#) to check for any errors or discrepancies in your data before you begin data analysis.

Simple Data Export (one-click)

To perform a quick data dump of your entire data set, simply click the button below. When done, it will provide you with various format options for downloading your data.

[Export all data now](#)


— OR —


Advanced Data Export

This option provides a variety of choices for customizing what data gets exported. You may select individual fields one at a time or entire data collection instruments to export. You may also utilize the data de-identification options (if your user privileges permit) that allow you to limit the amount of sensitive information that you are exporting, if you wish.

[Display advanced options](#)

Other export options

 **PDF (includes data for all records)**
The data for all records in this project may be downloaded in a single PDF file. This file contains the actual page format as you would see it on the data entry page or survey and includes all data for all records for all data collection instruments. Click the icon to the right to begin downloading the file.



Exports can be customized to include only specific fields. The first step is to choose what fields should go into the file. REDCap will then put the corresponding data from every record into the export file. After selecting the fields to include in the export, the desired file format can be chosen. This is where you decide the software package for which you want this export's files to be formatted. Several common statistical package formats are supported (SAS, Stata, R, SPSS, and Excel).

Data Import

The Data Import Tool is a quick and easy way to enter lots of data into your project all at once. It allows you to import data for multiple fields over multiple records. This is particularly useful if you have existing data in a spreadsheet or other database and now want to transfer it into REDCap.

Data Import Tool

This module may be used for importing data into this project from a CSV (comma delimited) file. Below are the steps you will need to follow in order to import your data successfully into this project.

NOTICE:

This project is currently in Development status. **Real data should NOT be entered** until the project has been moved to Production status.

Instructions:

- 1.) Click the link below to download your data import template as a CSV (comma delimited) file. Save it locally to your computer and then open it to begin filling it with the data you wish to import.

 [Download your Data Import Template](#) (with records in rows)

OR

 [Download your Data Import Template](#) (with records in columns)

- 2.) In each column of the Data Import Template file that you downloaded, place the data for each record that you wish to import. Once all your data has been added, save the file.
 - Be sure not to change the Variables/Field Names in the file or an error may occur.
 - Also, for all of the 'dropdown' or 'radio' fields in the project, you must make sure that the numerical value (rather than the text value) is entered in those cells, or else it cannot be processed.
 - Any empty rows or columns in the file can be safely deleted before importing the file. Doing this reduces the upload processing time, especially for large projects.

The data import template file should be used as a guide. In this file, you can see the required column headers. These correspond to the variable names from the project's data dictionary. Each record should be listed in an individual row underneath. Importing can be used to modify existing data or add entirely new data and records to a project. Once a file is uploaded, REDCap will show a summary of the data that is about to be imported, giving you one last chance to double-check the data. After importing, the data will be accessible in the project just as if it had been entered manually.

Report Builder

The Report Builder is the search engine of a REDCap project. This is the tool to use when you want to view multiple records worth of data without exporting it. Reports search the project in real time and display the desired data in spreadsheet format.

Report Builder

You may use this page to build and save custom reports, which will query the project in real time and display the resulting data in a table format. Once created, you may view your reports at any time as well as modify or even delete them. Your saved reports will be displayed on the right-hand menu as links, which can be clicked to display the report.

My Reports			
1.) Patient contact info	view	edit	copy delete
2.) Females who have given birth	view	edit	copy delete
3.) Baseline labs	view	edit	copy delete
4.) Baseline labs with cholesterol over 250	view	edit	copy delete
5.) Creatinine levels	view	edit	copy delete
6.) Dates of study completion	view	edit	copy delete
7.) Calc fields	view	edit	copy delete

Create a New Report

You may create a new report by selecting the fields/variables below that you want to include in the report. You may add as many fields to your report as you wish. You will also need to provide a name for your report, which will then be displayed on the project's right-hand menu. When you are finished selecting the fields you wish to include in the report, click the Save Report button at the bottom. The new report will then be added to your list of reports above.

Variables are listed in columns, and individual records are displayed in rows. Your saved reports are displayed on the menu as links, which can be clicked at any time to run a current report on your saved variables.

Download report as:  Microsoft Excel (CSV)  XML

 Print page  Edit this report

Number of results returned: **12**

Total number of records queried: 12

Patient contact info					
Study ID (study_id)	First Name (first_name)	Last Name (last_name)	Street, City, State, ZIP (address)	Phone number (telephone_1)	E-mail (email)
<u>1</u>	Donald	Duck	123 Main St. Orlando, FL 12345	(415) 555-1212	just_ducky@wdw.com
<u>2</u>	Hansel	House	124 Main St. Orlando, FL 12345	(415) 555-1213	lost1@woods.org
<u>3</u>	Gretel	Forest	125 Main St. Orlando, FL 12345	(415) 555-1214	lost2@woods.org
<u>4</u>	Minnie	Mouse	126 Main St. Orlando, FL 12345	(415) 555-1215	minnieme@wdw.com
<u>5</u>	Mickey	Mouse	127 Main St. Orlando, FL 12345	(415) 555-1216	franchise@wdw.com
<u>6</u>	Goofy	Dog	128 Main St. Orlando, FL 12345	(415) 555-1217	maxdad@hyuck.biz

Remember that saving a report is saving the combination of variables you query. The actual records found by a report are not saved each time. But, after running a report, a copy of the data on screen can be downloaded manually.

REDCap Project Types⁷

REDCap accommodates for a variety of various projects. The projects conducted in REDCap utilize data collection instruments. The data collection instruments allow collecting data by entering them. The data can be entered by the researchers (database) or by invited individuals (survey). So, you need to decide which way of data entry your project will use. In addition, you need to decide whether you are going to have only one instrument in your project or multiple instruments. One instrument can be used when the data collection form is fairly short. Long pages can make data entry tedious as they require scrolling down. Therefore, a project may instead use multiple instruments. There is no limit on the number of instruments or the number of fields on an instrument.

Individual data collection instruments can have different permissions of access for different users.

In summary, there are two ways to interact with data collection instruments in REDCap:

- 1) Project users can log in to REDCap and enter data. This option allows users to access existing data, use the applications, and explore REDCap's other features and functionality.
- 2) Enable data collection instruments as surveys. Doing so creates a public link to the instrument, which a project user can send to a survey respondent. A respondent can be anyone in the world. They use the public version of the instrument and securely send data to the REDCap project.

Traditional project⁸

The traditional or classic project meets the needs of a wide-range of data collection strategies. This is the simplest type of project, yet it can collect hundreds or even thousands of data points. Using multiple data collection instruments is common. All data entry happens within the project, while users are logged in. For this reason, the instruments may also be called data entry forms.

New records are created through the Add/Edit Records link. This page and the Dashboard are used to open existing records. An alternate way to access existing records is by adding record-specific events to the calendar. This approach is particularly useful when doing patient research. Visits on the calendar are often easier to find than scrolling through a large Dashboard. Traditional projects can be used for longitudinal data collection. Such studies capture the same variables repeatedly for each record. For example, when patients are seen over several months, the same lab values are collected each month. Because the same data is collected repeatedly over a defined period of time, this is an example of a longitudinal study. In a traditional project each form has its own unique name and is a separate webpage. Therefore, the questions on each form do not have to be exactly the same. This structure is far more flexible than using REDCap's longitudinal module.

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https://redcap.vanderbilt.edu/consortium/videoplayer.php?video=project_types01.flv&title=Overview+of+Project+Types+%28+min%29&text=&referer=REDCAP_PUBLIC

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https://redcap.vanderbilt.edu/consortium/videoplayer.php?video=traditional_project02.flv&title=Traditional+Project+%28+min%29&text=&referer=REDCAP_PUBLIC

Single survey project⁹

A REDCap survey is a data collection instrument created in REDCap and then made publicly available. It is built using the same methods as traditional REDCap data entry forms. But in the survey project type, a public instrument link is then distributed to other people, allowing them to submit data directly to your project. REDCap can assist you in sending out the survey link and tracking responses. Respondents go to the secure webpage and submit their data to you from anywhere at any time. There is no login required, so all that a respondent needs is a device having internet access. Project users can login to REDCap to access their respondents' data.

Survey settings define the basics. This includes the survey title, formatting, instructions, and other features and functionality that are specific to the survey project type. The basic structure of a survey should be created first. Then, the data collection instrument or survey itself can be built. The survey is constructed and customized through the usual methods – the Online Designer and Data Dictionary. But some field types have special additional functionality in a survey project. For example, section headers are typically used to enhance the visual appearance of an instrument. In a survey project, section headers define page breaks, or separate screens for the survey respondent to page through. When designing a survey, it can be previewed at any time to see exactly what the respondents will see. Refining the survey instrument is a key step in development mode. Your desired respondent experience can greatly affect the structure of the project itself. Take time to test the survey and enter some practice data.

As a project administrator, practice data can be entered in several ways. The easiest way is to open the survey in a new tab or window and submit data just as the respondents will. Another way is to add new records. This is different than adding a new survey response. Adding a new record is done within REDCap instead of opening a new tab or window. Data is entered as a survey administrator, not as a respondent, so it's easier to directly change the saved values. There's also no date/timestamp for records.

The Invite Participants page can be used to send the survey link to respondents. In the first distribution method, a link is distributed outside of REDCap. This is most commonly done via email or by posting the link on a webpage. Both the full and short versions go to the same webpage. This method is the simplest and fastest way to gather responses, and it allows your participants to complete your survey multiple times. But it does not allow REDCap to track who has responded.

If it will be important to identify your respondents, your survey questions themselves should include an identifying field, such as for a name or study ID number. Alternatively, REDCap can track respondents if you choose the second distribution method, the Participant List. The Participant List method uses a list of email addresses to send and track survey invitations through REDCap. Optional participant "Identifiers" create a link between the response and the email address. If you want to know which

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responses came from which email addresses, you must include an Identifier. After building a contact list, REDCap can email selected respondents with a customized message and survey link. The Participant List method is the only way to limit the number of times a participant completes the survey. It's also the only method by which REDCap can record when you first email each address and when each address responds to your survey.

Both distribution methods can be used to practice data entry. It's also important to note that the survey link and the Participant List of email addresses will not change when the project is moved from development to production mode. While in development mode, it's important to explore the distribution methods here because they can greatly affect how you want your survey customized. One last unique feature of surveys is the ability to receive an email each time a new response is received. REDCap can send this notification email to any user of a survey project. A great way to test a survey project is to enable this feature and then have your project team enter data through the many differing methods. This will mimic real data collection and assist in exploring all the functionality available in surveys.

Longitudinal project¹⁰

The longitudinal module is designed to capture the same variables multiple times over a specific period of time. In structure, it is often similar to the traditional project type. Multiple data entry forms are usually defined, and all data is entered while logged into REDCap. However, with the longitudinal module enabled, forms are displayed in a grid. This illustrates how forms can be completed repeatedly for a single record. The longitudinal module is best suited to very structured studies which do not last indefinitely. Clinical trials make frequent use of this module. All patients follow the same series of events over a clearly defined period of time.

Before data collection begins, the time-points, events, or visits are defined. An exact number of days between events can be used. Alternatively, sequential numbers are assigned to order events. This is useful when the exact number of days is not as critical as the order in which events occur.

Next, the grid is completed by defining which data entry forms are completed at each event. These two steps define the underlying longitudinal event grid. A single project can have multiple event grids. This approach is optional and is called using multiple arms.

The arms of a longitudinal project usually correspond to different groups of records. Many times, only one arm is needed. When there are few arms, a separate series of events can be defined for each arm, so different instruments can be designated for completion at the unique events of each arm.

REDCap features change significantly when using the longitudinal module. The syntax used in calculations, branching logic, and piping is more complex. Reports, exports, and imports are also slightly different and, in some ways, more limiting. Once in production mode, the longitudinal grid can still be expanded to include new instruments and events. But modifying or deleting existing events and

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https://redcap.vanderbilt.edu/consortium/vidoplayer.php?video=longitudinal_project02.flv&title=Longitudinal+Project+%283+min%29&text=&referer=REDCAP_PUBLIC

instruments will almost always result in data loss. It is critical to fully test the longitudinal module while in development mode.

Longitudinal + scheduling project¹¹

A longitudinal plus scheduling project is one of the most complex project types in REDCap. It allows for repeated use of data collection instruments, and it automatically populates the calendar with record-specific events. Calendar events can then be used to enter data.

The longitudinal module allows completion of the same instruments multiple times over a specific series of events. Multiple data entry forms are usually defined. Forms are displayed in a grid.

Data Collection Instrument	Enrollment (1)	Baseline Visit (2)	Week 1 Visit (3)	Patient Survey 1 (4)	Gift Card 1 Mailed (5)	Week 2 Visit (6)	Patient Survey 2 (7)	Gift Card 2 Mailed (8)	Week 3 Visit (9)	Visit Closeout (10)	Patient Survey 3 (11)	Patient Closeout (12)	Gift Card 3 Mailed (13)
Demographics	✓												
Lab Data (survey)		✓	✓	✓		✓	✓		✓	✓	✓		
Tobacco Use	✓		✓			✓			✓	✓			
Agitated Behavior Scale (survey)		✓	✓	✓		✓	✓		✓	✓	✓		
Sleep Interview (survey)	✓		✓			✓			✓	✓			
Inadequate Sleep (survey)		✓		✓			✓			✓	✓		
Completion Data									✓			✓	

These grids define how the scheduling module functions. The event grids and designated instruments can differ between arms of the study.

The scheduling module is an optional additional feature only available in longitudinal projects.



The scheduler is primarily used to maintain a project calendar. The scheduling module creates new records and creates schedules for the calendar.

The calendar can be used to open any records that have already been scheduled.

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[https://redcap.vanderbilt.edu/consortium/videoplayer.php?video=longitudinal_sched_project02.flv&title=Longitudinal +Scheduling+Project+3+min&text=&referer=REDCAP_PUBLIC](https://redcap.vanderbilt.edu/consortium/videoplayer.php?video=longitudinal_sched_project02.flv&title=Longitudinal+%2B+Scheduling+Project+%283+min%29&text=&referer=REDCAP_PUBLIC)

Operations project¹²

REDCap is suitable for collecting administrative and educational data, workflow and quality improvement, and registries and bookkeeping. Any category of data can be stored in any project type.

The Report Builder is particularly helpful for operational databases. Reports quickly generate summary data and assist in tracking milestones.

RedCap Mobile App¹³

REDCap can be used through any browser, on any device having internet access, including mobile devices like tablets and smart phones. The REDCap Mobile App is a complementary but separate tool, used for offline data entry in places having unreliable internet service. The Mobile App is specialized for mobile devices. It can only be used in combination with the online version of REDCap.

Here's how the Mobile App works. REDCap projects are created and used as usual in the online version. At any time, they can be downloaded to a mobile device. This is called the setup step. It creates a copy of the project on the mobile device. Once a project is downloaded in the Mobile App, data can be entered offline. The appearance and format of data collection instruments are comparable to the online version of REDCap, including built-in prompts and instructional text. Offline data entry does not change how online users work with REDCap. While data is being entered in the Mobile App offline, the online version of the project continues to work as usual, including data entry.

Offline data is stored on the mobile device. When the internet connection is reliable, offline data can be uploaded from the device back to the online REDCap project. This is called synchronization.

The Mobile App focuses on data entry. It is most frequently used for data collection in remote areas where there is no internet service.

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