

Double Data Entry (DDE)

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What is the Double Data Entry (DDE) Module?

- This module allows two project users to be set as Data Entry Person #1 and Data Entry Person #2 (using the User Rights page), and allows them to create records with the same Record ID and enter data for the same record without seeing one another's data.
- Typically, only one person at a time can be set as Person #1 or Person #2. All other users are considered Reviewers.
- Reviewers have the ability to merge a record created by Person #1 and Person #2 after viewing differences and adjudicating those differences using the Data Comparison Tool, thus creating a third record in the set.



How do I enable DDE for my project?

- The **Double Data Entry (DDE)** module that needs to be enabled by a **REDCap Administrator** prior to any data is collected in the project.
- Contact your local REDCap Administrator by clicking on the blue contact button in the lower-left hand corner of your project and ask that DDE be enabled for your project.

Contact REDCap administrator

• DDE should be enabled **BEFORE** you begin any data entry in the project.



Once DDE is Enabled...

Once DDE has been enabled by your REDCap Administrator, you will notice **Auto-numbering** for the project has be disabled.

D's		
	Enable G Repeatable instruments and events ?	
	Enable 🤤 Auto-numbering for records ?	
	Enable 🤤 Scheduling module (longitudinal only) 🕐	
	Enable 🤤 Randomization module ?	
	Enable 🥥 Designate an email field for sending survey invitations ?	
	Additional customizations	



How do I set up DDE User Rights?

Go to your User Rights page:

REDCap	Doubl	e Data En	try Demo							
Logged in as Jacevedo Log out My Projects or Control Center	🖀 Pr	oject Home	≣ Project Setup	🙇 User Rights	📌 Data I	Access Grou	ıps			
 Project Home or E Project Setup REDCap Messenger Project status: Development 	This page create ro	e may be used les to which ye	for granting users at ou may assign users	ccess to this project (optional). User role	and for ma	naging the u I when you v	iser privileg vill have se	ges of thos veral user	se users. You s with the sa	i may also me
Data Collection Edit instruments Image: Record Status Dashboard - View data collection status of all records Image: Record Status Dashboard View data collection status of all records	individua roles, and glimpse o	d the table at t of their user p	also a nice way to cat the bottom allows yo rivileges.	egorize users withir u to make modifica	n a project. I tions to any	in the box be existing use	elow you m r or role in	ay add/as the proje	sign users of ct, as well as	r create new view a
Create new records or edit/view existing ones Show data collection instruments	Add ne	w users: Give	e them custom user rig	hts or assign them to	o a role.					
Applications	2	Add new us	er	Add with custom	rights					
Image: Calendar Image: Data Expects	<u>_</u>	— OR — Assign new	user	Assign to role \bigtriangledown						
Data Exports, Reports, and stats Data Import Tool Data Comparison Tool	Create	new roles: A	dd new user roles to w	vhich users may be a	ssigned.					
Logging Field Comment Log		Enter new r (e.g., Project M	ole name anager, Data Entry Perso	Create role						
 Sile Reporting User Rights and PAGs Record Locking Customization E-signature and Locking Mgmt Data Quality 	Role na (click rol role)	i me e name to edit	Username or u (click username t	sers assigned to a ro	le E le) ex	xpiration (click (click to edit)	Project Design and Setup	User Rights	Data Access Groups	Data Export Tool
 API and I API Playground REDCap Mobile App 	_		t.cri.redcap1 (Sa	am Jones)		never	~	~	~	Full Data Set
Sexternal Modules	_		t.cri.redcap2 (Ja	ne Doe)		never	×	×	×	Full Data Set
How To: Advanced Coding How To: Calculations	_		t.cri.redcap3 (Jo	hn Doe)		never	×	×	×	Full Data Set
How To: Survey Wizard How To: Adding Users Uchicago REDCap Website										
Help & Information										
 Help & FAQ Video Tutorials Suggest a New Feature 										
Contact PEDCap administrator										



How do I set up DDE User Rights?

 Click on your username and you will see the Reviewer user rights has already been assigned to



 As a Reviewer, you have rights to assign data entry Person #1 and Person #2.





How do I set up DDE User Rights?

 To assign data entry Person #1, click on the user's name and click Edit user privileges:

Username or users assigned (click username to edit or assigned)	ed to a role (click expiration to edit)					
t.cri.redcap1 (Sam Jones) User actions:						
t.cri.redcap2 (Jane Doe)	Edit user privileges					
t.cri.redcap3 (John Doe)	Assign to role ▽					

• Then assign the user **Person #1** user rights.



- Repeat the steps for **Person #2** for the other user
- Any remaining users on the projects will be **Reviewers**.



Person #1 – Data Entry

Person #1 can now log in and begin data entry:

REDCap	Double Data Entry Demo		Save & Exit Form
a Logged in as t.cri.redcap1 Log out	Actions: 🔁 Download PDF of instrument(s) 🗢	VIDEO: Basic data entry	Cancel
■ My Projects 分 Project Home	🖹 Data Entry Form		Currect
Project status: Production	Adding new Record ID 100		
Data Collection	Record ID	100	
Record Status Dashboard Add / Edit Records	Last Name	H Marin	
Record ID 100 Select other record Data Collection Instruments:	First Name	Bue Sue	
Data Entry Form	Date of Birth	🕒 😥 07-24-1980 🛗 Today M-FY	
Applications -		(н)	
Calendar	Zip Code	60605	
Field Comment Log Field Repository Field Repository How To: Advanced Coding	Lab Location	North South West	reset
Bow To: Calculations	Form Status		
How To: Adding Users	Complete?	H Complete	
Help & Information		Save & Exit Form Save &	
Help & FAQ Help & FAQ IEl Video Tutorials C Suggest a New Feature		Cancel	•
Contact REDCap administrator			



Person #1 – Dashboard

This is how the **Record Status Dashboard** will appear for **Person #1** after entering their first record.





Person #2 – Data Entry

Person #2 can now log in and begin data entry:

REDCap [®]	Double Data Entry Demo Actions: Download PDF of instrument(s) >>	VIDEO: Basic data entry	Save & Exit Fo
ly Projects roject Home	🖹 Data Entry Form		Cancer
REDCap Messenger Project status: Production	Adding new Record ID 100		
Collection -	Record ID	100	
Record Status Dashboard Add / Edit Records	Last Name	Haren	
Collection Instruments:	First Name	🗄 Ģ Sue	
ta Entry Form	Date of Birth	[⊕] ⊖ 07-24-1980 📅 Тоday мр-	r
Calendar	Zip Code	[®] ⊘ 60606	
Data Exports, Reports, and Stats Field Comment Log File Repository How To: Advanced Coding	Lab Location	● North ● ○ South ● West	reset
How To: Calculations How To: Survey Wizard	Form Status		
How To: Adding Users JChicago REDCap Website	Complete?	Complete	
k Information 📃		Sava & Evit Form Sava &	
elp & FAQ deo Tutorials uggest a New Feature		Cancel	
Contact REDCap administrator			



Person #2 – Dashboard

- This is how the **Record Status Dashboard** will appear for **Person #2** after entering their first record.
- Notice, they don't see Person #1's record.



Reviewer – Dashboard

- This is how the Record Status Dashboard will appear for the Reviewer when viewing all records.
- They see both records:
 - Person #1 (100--1) and Person #2 (100--2)



Reviewer – Data Comparison Tool

- The **Data Comparison Tool** is located under Applications on the left hand menu of the project.
- This tool may be used for **comparing** records that have been entered by data entry Persons #1 and #2.
- Select a record from the list and click the **'Compare'** button.
- A comparison table will then be displayed showing the differences between the records.
- Only records that have been entered by **both** data entry persons will be displayed in the selection box.
- If only one data entry person has entered their record, the table **will not** display that single record.



Reviewer – Data Comparison Tool Results

• Below are the **Data Comparison Tool** results for record 100:

REDCap	Double Data Entry Demo							
 Logged in as t.crl.redcap3 Log out My Projects Project Home or ⋮≡ Project Setup REDCap Messenger Project status: Production 	This page may be used from the list below and records. Only records the	y ave been entered by designated data entry persons. Select a record on table will then be displayed showing the differences between the ntry persons will be displayed in the selection box below.						
Data Collection	Record ID	Comp	are sele	cted record	1			
Record Status Dashboard Add / Edit Records Show data collection instruments	100	Cor	— OR npare al	— l records				
Applications 📃								
 Calendar Data Exports, Reports, and Stats Data Import Tool Data Comparison Tool Logging Field Comment Log File Repository User Rights and A DAGs Data Quality How To: Advanced Coding 	Differences were foun The table below comparyou need to correct or of that form for that partic MERGE THEM? If you wish to merge sel	d between the tv res the two record hange the value o rular record. ected values from	vo recor is named f one of the two	ds named I 1001 and the record: records be	Print page 1001 and 1002. d 1002. Only the fields that have differing values are listed below. If s below, simply click on the data displayed in red, and it will take you to elow into a NEW third record, you may <u>click here to merge them</u> .			
B How To: Calculations		F NI	Reco	ord ID				
How To: Survey Wizard	Label (Jield name)	Form Name	1001	1002				
UChicago REDCap Website	Last Name (last_name)	Data Entry Form	Marin	Maren				
	Zip Code (zip_code)	Data Entry Form	60605	60606				

• All records can be compared at once too.



Reviewer – Data Comparison Tool Results

- The table compared the two records named 100--1 and 100--2.
- Only the fields that have differing values are listed.
- If you need to correct or change the value of one of the records below, simply click on the data displayed in red, and it will take you to that form for that particular record.

Differences were found between the two records named 100--1 and 100--2.

The table below compares the two records named **100--1** and **100--2**. Only the fields that have differing values are listed below. If you need to correct or change the value of one of the records below, simply click on the data displayed in red, and it will take you to that form for that particular record.

MERGE THEM?

If you wish to merge selected values from the two records below into a NEW third record, you may click here to merge them.

Label (field name)	Form Name	Record ID		
Label (Jield Hullie)	Form Name	1001	1002	
Last Name (last_name)	Data Entry Form	Marin	Maren	
Zip Code (zip_code)	Data Entry Form	60605	60606	



Reviewer – Merging Records

To merge the records, click on the merge link:

MERGE THEM?

If you wish to merge selected values from the two records below into a NEW third record, you may click here to merge them.

Label (field name)	Form Name	Record ID		
Label (held hume)	Formivanie	1001	1002	
Last Name (last_name)	Data Entry Form	Marin	Maren	
Zip Code (zip_code)	Data Entry Form	60605	60606	



Reviewer – Merging Records

Two differences were found: last name and zipcode.

Instructions for merging records:

In the table below, only the fields that have differing values for the existing two records are displayed. Since you are merging these two records, you will need to decide which of those two values you wish to include in the new record you are creating. You may also choose to enter a new value rather than selecting one from the existing records.

Simply click on the dot in each cell to select that field's value as the value to be included for the NEW third record you will be creating. When you are done making your selections, click the Merge Records button at the bottom to create the new record.

	Label (field name)	Form Name		Cho	ose one of the existing values or enter a new value
			1001	1002	New Value
	- t Ni dit	Data Fata Farm	۲	0	
L	ast Name (<i>läst_näme)</i>	Data Entry Form	Marin	Maren	0
		Data Entry Form	۲	0	
Z	ip Code (<i>zip_code</i>)		60605	60606	0
					Merge Records Cancel



Reviewer – Merging Records

• We will merge the record choosing Marin and 60606.



• Once merged, a new record 100 will be created.

RECORD CREATED!

Record 100 has now been created by merging the values you selected from records 100--1 and 100--2.



Reviewer – Dashboard

- This is how the **Record Status Dashboard** will appear for the Reviewer after merging the record.
- They see all three records:
 - 1. Merged Record (100)
 - 2. Person #1 (100--1)
 - 3. Person #2 (100--2)

Dashboard Displaying	display record	ed: [Default dashboard] Page 1 of 1: "1001" through "100" of 3 records	Create custom dashboard ALL (3) records per page
Displaying:	Instrum	ent status only Lock status only All status types	
Record ID	Entry Form		
<u>100</u>	۲		
<u>1001</u>	۲		
<u>1002</u>	۲		



Person #1 – Dashboard

- However, this is how the **Record Status Dashboard** will appear for **Person #1** after merging the record.
- They see still only see their one record: 100





Person #2 – Dashboard

- However, this is how the **Record Status Dashboard** will appear for **Person #2** after merging the record.
- They see still only see their one record: 100





Record Compare After Merging

Person #1	Person #2	Reviewer
1001	1002	100
To rename the record, see the record action drop-down at top of the <u>Record Home Page</u> .	To rename the record, see the record action drop-down at top of the <u>Record Home Page</u> .	To rename the record, see the record action drop-down at top of the <u>Record Home Page</u> .
Marin	Maren	Marin
Sue	Sue	Sue
07-24-1980 31 Today M-D-Y	07-24-1980 Today M-D-Y	07-24-1980 Today M-D-Y
60605	60606	60606
 North South West 	 North South West 	 North South West

- REDCap gives no indication to Person #1 and #2 that their records were merged by the Reviewer.
- Even though the merged record 100 has the correct data, records 100--1 and 100--2 still have the old data.
- Changing the data in 100--1 and 100--2 will not update the data in 100. They are considered 3 separate and distinct records in the project.



The following pages cover FAQs (frequently asked questions) related to DDE.



How do I export only the merged records in a DDE project?

- When exporting records (or viewing a report) from a Double Data Entry (DDE) project, the exported record set will, by default, include three records for every merged record (the first user's entry, the second user's entry, and the merged record).
- To **limit** the exported (viewed) records to only the final **merged** version of each record, follow these steps:

Create a filter.
 Switch to Advanced Logic:
 Add this code: not_contain([record_id], "--")

Note, change [record_id] to whatever field you are using as the record identifier.



In a project using DDE, can I make changes in one of the merged records?

- A record can be merged only once. For example records "AA--1" and "AA--2" merge to create record "AA".
- After merging, the user in role data entry **Person #1** can still make changes and only record "AA--1" will be changed.
- The person in role data entry **Person #2** can make changes and only record "AA--2" will be changed.
- A person in role Reviewer can view all three records that can be edited like any record in a database. The Reviewer can use the Data Comparison Tool to see discrepancies in the three versions. The Reviewer may then access the merged record and add data. What they add in the "AA" record will not be added to either "AA--1" or "AA--2" unless they open those records and make the addition. Reviewers can see, and make manual changes, but cannot use "merge" again. An alternative is to delete the merged version "AA", let the Data Entry people make changes themselves and then merge the records again.



As a DDE Reviewer, how can I make sure the data entry personnel do not modify their records after I create a final merged record?

- If you do not want data entry personnel to update records after a review and merge, you can enable the User Right > Lock/Unlock Records for the Reviewers.
- The Reviewers can then lock any records **prior** to a merge.
- The data entry personnel without this right **will not** be able to make updates to the locked record without first contacting the Reviewer.



- What if data entry has begun by one data entry person, and then I decide to bring on another data entry person so that I can use DDE?
 - Ask you **Administrator** to enable DDE for your project.
 - Assign the original data entry person **Person #1** User Rights.
 - Assign the new data entry person **Person #2** User Rights.
 - **Rename** all the records entered by Person #1 (**before** DDE was enabled) to have the suffix --1 (i.e. record 200 rename to 200--1).
 - As Person #2 begins entering records, REDCap will add the suffix --2 to their records (but **only** the Reviewer will see the suffix).
 - The **Reviewer** can then use the **Data Comparison Tool** to compare and merge the 2 records from **Person #1** and **Person #2**, provided each record to be compared has their corresponding suffix (--1 and --2).



What if I have more that two people entering data for the same records?

- It is sometimes recommended to use the **Data Access Groups (DAGs)** over the actual **DDE** module to implement a form of double data entry.
- The advantages of using DAGs include allowing an unlimited number of users to be in a group and enter data, to utilize the Data Import Tool, and to access all Applications pages.
- Discrepancies between double-entered records can be resolved by a Reviewer (i.e. someone not in a group) using the Data Comparison Tool.
- However, two records can **ONLY** be merged together when using the **DDE** module. So if it is necessary for a third party **Reviewer** to merge the two records into a third record, then in that case the **DDE** module would be advantageous over using **DAGs**.



Are repeating forms compatible with DDE?

- No, you can only compare the **first instance** of repeating forms with DDE.
- The **Data Comparison Tool** does not support the Repeating Instruments and Events feature.
- Data can be compared and merged with the **Data Comparison Tool** but it will only allow comparison and merging of Instance #1 of a repeating instrument or repeating event.
- All non-repeating data in non-repeating forms can be compared and merged.



Can I use DDE only on certain instruments in my project?

- No, **DDE** applies to the **entire** project.
- It should **not** be used with projects where you just wish to do double data entry on some forms; it must be done on **all** forms.

