**Smart Variables**

## **A review of REDCap Field Variables and Field Notation**

In REDCap, all fields on data collection instruments will have a corresponding 'field name' or 'variable name' that is unique to it. A field's variable name can be defined in the Online Designer or in the Data Dictionary when adding/modifying a field in the project. The variable name can be utilized in various places and functionality in REDCap, such as in conditional logic, calculations, and piping. REDCap variable names are referenced by placing square brackets [ ] around it - e.g., **[variable\_name]**. And if the project is longitudinal, in certain contexts you may need to additionally provide the unique event name, which must also be in brackets and prepended to the variable name, in order to target that field on a particular event - e.g., **[event\_2\_arm\_1][variable\_name]**. The usage of variable names inside brackets is often referred to as REDCap Field Notation.

## **An introduction to Smart Variables**

In REDCap Field Notation, variable names always point to data fields in the project. However, another type of entity exists called 'Smart Variables' that allows you to reference information other than data fields. Smart Variables are context-aware and thus adapt to many different situations in which they can know who the current user is, what event is currently being viewed, whether or not an instrument is being viewed as a survey or data entry form, etc. In this way, Smart Variables are dynamic (and thus 'smart') because they adapt to the current context in which they are used. Smart Variables are easily distinguishable from field variable names because Smart Variables will have dashes and colons, whereas field variable names cannot.

Smart Variables can be used...

* On their own - e.g., *[record-dag-name]*
* In conjunction with field variables - e.g., *[previous-event-name][weight\_measurement]*
* In conjunction with other Smart Variables - e.g., *[previous-event-name][survey-url:prescreening\_survey]*

## **How and where to use Field Notation & Smart Variables**

Field notation (whether referencing variable names or using Smart Variables) can be utilized in many places throughout REDCap. This makes it immensely powerful to use for a variety of purposes. Regardless of where it is utilized, the format of variable names in field notation is always the same. If a variable is used on its own, it will simply be [variable], and if you wish to specify that field variable for a specific event (for longitudinal projects), you must prepend the unique event name - e.g., [event][variable]. If you are referencing a specific repeating instance of the field, you append (not prepend) the repeat instance number in brackets - e.g., [variable][2], in which the format is the same for both repeating instruments and repeating events. If you are referencing the second instance of a repeating event, for example, you would use the format [event][variable][2]. If you want to determine if a certain option for a checkbox field is checked or not, you may include the checkbox option value inside parentheses, which follows the variable name inside the brackets - e.g., [my\_checkbox(4)]. All these components can be used together, if needed, such as if you want to reference checkbox option 3 that exists on the fifth instance of a repeating instrument on 'Event 1' - e.g., [event\_1\_arm\_1][my\_checkbox(3)][5].

Field notation and Smart Variables can be used for...

* Calculated fields - using mathematical operations to calculate a numerical result.
* Conditional logic - includes branching logic, advanced filters for reports, and logic for Survey Queue, Data Quality rules, Custom Record Status Dashboards, and Automated Survey Invitations
* Piping - using field notation to insert values into labels on a survey/form or inside a survey invitation.

NOTE: While Smart Variables can be utilized in Data Quality rule logic, in many cases, they will cause Data Quality rules to take much longer to complete.

**Blank values:** If a field value or Smart Variable value is blank/null (i.e., does not exist), then by default the blank value will be piped as six underscore characters (literally \_\_\_\_\_\_) as a placeholder to visually indicate that no value exists. However, if this behavior is not desired, you may append :hideunderscore to the variable name inside the square brackets, and this will cause the value to be piped as-is, that is, as a blank/null/invisible value. Note: The :hideunderscore notation may be appended to both field variables and Smart Variables.

## **Smart Variable List**

Listed below are all available Smart Variables. A description is given for each, along with an example of how it might be used. Please keep in mind that while Smart Variables can be used in calc fields, conditional logic, and piping, it does not mean that every Smart Variable should be used in all of those places. For instance, you will likely only use [survey-link] and [form-url] for piping purposes. Also, [is-survey] and [next-event-name] will likely never make sense to be utilized in piping, but instead in conditional logic (branching logic most likely). So, remember that just because you \*can\* use Smart Variables in certain places does not necessarily mean that you \*should\*.

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|  |
| **Smart Variable Name** | **Description** | **Example of Usage** |
| Example input | Example output |
| **User** |
| **user-name** | The current user's REDCap username. | [user-name] | jane\_doe |
| **user-fullname** | The current user's first and last name (as listed on their Profile page). | [user-fullname] | Jane Doe |
| **user-email** | The current user's primary email address (as listed on their Profile page). | [user-email] | jane.doe@example.edu |
| **user-dag-name** | The Data Access Group (the unique group name) to which the current user belongs (blank if not in a DAG). | [user-dag-name] | vanderbilt\_group |
| **user-dag-id** | The group ID number of the Data Access Group to which the current user belongs (blank if not in a DAG). | [user-dag-id] | 324 |
| **user-dag-label** | The name/label of the Data Access Group to which the current user belongs (blank if not in a DAG). | [user-dag-label] | Vanderbilt Group |
| **user-role-id** | The Role ID of the user role to which the current user is assigned (blank if not assigned to any user role). This value is auto-generated for each user role. NOTE: This value is not just unique for all roles within the project but is also unique across all REDCap projects. Thus, if the project and its user roles are copied, the Role IDs of the user roles in the resulting copy will be different from the ones in the original project. | [user-role-id] | 127 |
| **user-role-name** | The unique role name of the user role to which the current user is assigned (blank if not assigned to any user role). This value is auto-generated for each user role. NOTE: This value is only unique for roles within the project. Thus, if the project and its roles are copied, the new project will retain the same unique role names, which allows you to utilize the unique role names in conditional logic, calculations, branching logic, etc. that will not break when the project is copied. | [user-role-name] | U-699N7ET9KR |
| **user-role-label** | The name/label of the user role to which the current user is assigned (blank if not assigned to any user role). This value is defined by the user that creates the user role. | [user-role-label] | Data Entry Person |
| **Record** |
| **calendar-link:Custom Text** | The HTML web link that, when clicked, will navigate to the calendar feed or downloadable ICS calendar file belonging to the current record. 'Custom Text' is an optional parameter whereby you can specify the visible link text, and if it is not provided, it defaults to simply displaying the URL as the link text. | [calendar-link] | [Download your calendar events (ICS file)](https://redcap.vumc.org/surveys/?__calendar=g2f2UkyPyYwn4sB3rvBZL2rhPpDssbWQXd39pz8s9nkIM2zX4RkgKwNrKMo4qQArvB5ibGDDqFyZs5ddEF7Efswn6cZ5J3pteRy3) |
| **calendar-url** | The web address (URL) of the calendar feed or downloadable ICS calendar file belonging to the current record. | [calendar-url] | https://redcap.vumc.org/surveys/?\_\_calendar=g2f2UkyPyYwn4sB3rvBZL2rhPpDssbWQXd39pz8s9nkIM2zX4RkgKwNrKMo4qQArvB5ibGDDqFyZs5ddEF7Efswn6cZ5J3pteRy3 |
| **record-dag-id** | The group ID number of the Data Access Group to which the current record belongs (blank if not in a DAG). | [record-dag-id] | 96 |
| **record-dag-label** | The name/label of the Data Access Group to which the current record belongs (blank if not in a DAG). | [record-dag-label] | Harvard Site |
| **record-dag-name** | The Data Access Group (the unique group name) to which the current record belongs (blank if not in a DAG). | [record-dag-name] | harvard\_site |
| **record-name** | The record name of the current record. | [record-name] | 108 |
| **Form** |
| **is-form** | Detects if the current instrument is being viewed as a data entry form (returns 1 for True, 0 for False), as opposed to a survey. | [is-form] | 1 |
| **form-url:instrument** | The web address (URL) of the specified data entry form for the current record/event/instance. The format must be [form-url:instrument], in which 'instrument' is the unique form name of the desired instrument. | [form-url:visit\_data\_form] | https://redcap.vumc.org/redcap\_v15.5.6/DataEntry/index.php?pid=example&event\_id=example&id=example&instance=example&page=visit\_data\_form |
| [baseline\_arm\_1][form-url:visit\_data\_form] | https://redcap.vumc.org/redcap\_v15.5.6/DataEntry/index.php?pid=example&event\_id=example&id=example&instance=example&page=visit\_data\_form |
| **form-link:instrument:Custom Text** | The HTML web link that, when clicked, will navigate to the specified data entry form for the current record/event/instance. The format must be [form-link:instrument] or [form-link:instrument:Custom Text], in which 'instrument' is the unique form name of the desired instrument. 'Custom Text' is an optional parameter whereby you can specify the visible link text, and if it is not provided, it defaults to the form label of the data entry form. The format [form-link:Custom Text] can also be used if the instrument is assumed, such as when viewing a form or in a survey invitation. Also, it can be used simply as [form-link] inside the content of a survey invitation, in which 'instrument' is assumed to be the current survey instrument. | [form-link:visit\_data\_form] | [Visit Data Form](http://example.com/?page=visit_data_form) |
| [next-event-name][form-link:visit\_data\_form] | [Visit Data Form](http://example.com/?page=visit_data_form) |
| [form-link:demography:Click here to view Demographics] | [Click here to view Demographics](http://example.com/?page=demography) |
| **instrument-name** | The unique instrument name of the current survey or data entry form. It will return to a blank value if not in an instrument context. | [instrument-name] | demographics |
| [instrument-name] | prescreening\_survey |
| **instrument-label** | The instrument label of the current survey or data entry form. It will return a blank value if not in an instrument context. | [instrument-label] | Demographics |
| [instrument-label] | Pre-Screening Survey |
| **Survey** |
| **is-survey** | Detects if the current instrument is being administered as a survey (returns 1 for True, 0 for False), as opposed to a form. | [is-survey] | 0 |
| **survey-url:instrument** | The web address (URL) of the specified survey for the current record/event/instance. The format must be [survey-url] or [survey-url:instrument], in which 'instrument' is the unique form name of the desired instrument. This can be used simply as [survey-url] inside the content of a survey invitation, in which 'instrument' is assumed to be the current survey instrument. | [survey-url:followup\_survey] | https://redcap.vumc.org/surveys/?s=fake |
| [previous-event-name][survey-url:followup\_survey] | https://redcap.vumc.org/surveys/?s=fake |
| **survey-link:instrument:Custom Text** | The HTML web link that, when clicked, will navigate to the specified survey for the current record/event/instance. The format must be [survey-link], [survey-link:instrument], or [survey-link:instrument:Custom Text], in which 'instrument' is the unique form name of the desired instrument. 'Custom Text' is an optional parameter whereby you can specify the visible link text, and if it is not provided, it defaults to the survey title of the survey. The format [survey-link:Custom Text] can also be used if the instrument is assumed, such as when viewing a form or in a survey invitation. Also, it can be used simply as [survey-link] inside the content of a survey invitation, in which 'instrument' is assumed to be the current survey instrument. | [survey-link:followup\_survey] | [Follow-up Survey](http://example.com/?s=FAKE) |
| [next-event-name][survey-link:followup\_survey] | [Follow-up Survey](http://example.com/?s=FAKE) |
| [survey-link:prescreening:Take the pre-screening survey] | [Take the pre-screening survey](http://example.com/?s=FAKE) |
| **survey-access-code:instrument** | The Survey Access Code of the specified survey for a given record/event/instance. The format must be [survey-access-code] or [survey-access-code:instrument], in which 'instrument' is the unique form name of the desired instrument. This can be used simply as [survey-access-code] inside the content of a survey invitation, in which 'instrument' is assumed to be the current survey instrument. | [survey-access-code:followup\_survey] | LDNP3EW7W |
| [previous-event-name][survey-access-code:followup\_survey] | DDFRLCTCR |
| **survey-return-code:instrument** | The Survey Return Code of the specified survey for a given record/event/instance in order to allow a participant to return to a completed or partially completed survey response when using the 'Save & Return Later' survey feature. The format must be [survey-return-code] or [survey-return-code:instrument], in which 'instrument' is the unique form name of the desired instrument. This can be used simply as [survey-return-code] inside the content of a survey invitation, in which 'instrument' is assumed to be the current survey instrument. | [survey-return-code:followup\_survey] | TFX4E4YN |
| [previous-event-name][survey-return-code:followup\_survey] | HEJNFHD4 |
| **survey-queue-url** | The web address (URL) of the survey queue for the current record. | [survey-queue-url] | https://redcap.vumc.org/surveys/?sq=fake |
| **survey-queue-link:Custom Text** | The HTML web link that, when clicked, will navigate to the survey queue for the current record. The format must be [survey-queue-link] or [survey-queue-link:Custom Text], in which 'Custom Text' is an optional parameter whereby you can specify the visible link text. And if it is not provided, it defaults to 'Survey Queue Link'. | [survey-queue-link] | [Survey Queue Link](http://example.com/?sq=FAKE) |
| [survey-queue-link:View your survey progress] | [View your survey progress](http://example.com/?sq=FAKE) |
| **survey-title:instrument** | The survey title of the instrument specified by the 'instrument' parameter (if provided). If the 'instrument' parameter is not provided, the current survey instrument will be used, else it will return a blank value if not in an instrument/survey context. | [survey-title] | Enter to Win a New Car |
| [survey-title:prescreening\_survey] | Cardiology Study: Pre-Screening Survey |
| **survey-time-started:instrument** | The date and time on which the specified survey instrument was started for the current record/event (i.e., the initial time the survey page is opened). The format must be [survey-time-started:instrument], in which 'instrument' is the unique form name of the desired instrument. In a piping context, such as in a field label, survey invitation, or inside the @DEFAULT action tag, the format of the date and time will be displayed based on the current user's date/time display preferences. If you wish to have it return the raw value, which will instead be in 'YYYY-MM-DD HH:MM:SS' format and would be more appropriate for conditional logic or calculated fields, simply append ':value'. NOTE: If the start time is a blank value, it implies that the response began while on an earlier version of REDCap when start times were not yet collected. | [survey-time-started:followup] | 12/25/2018 09:00am |
| [survey-time-started:followup:value] | 2018-12-25 09:00:00 |
| [survey-time-started:followup][last-instance] | 12/25/2018 09:00am |
| [survey-time-started:followup:value][current-instance] | 2018-12-25 09:00:00 |
| **survey-date-started:instrument** | The date on which the specified survey instrument was started for the current record/event (includes date component only, unlike [survey-time-completed]). The format must be [survey-date-started:instrument], in which 'instrument' is the unique form name of the desired instrument. In a piping context, such as in a field label, survey invitation, or inside the @DEFAULT action tag, the format of the date will be displayed based on the current user's date display preferences. If you wish to have it return the raw value, which will instead be in 'YYYY-MM-DD' format and would be more appropriate for conditional logic or calculated fields, simply append ':value'. NOTE: If the start time is a blank value, it implies that the response began while on an earlier version of REDCap when start times were not yet collected. | [survey-date-started:prescreener] | 12/25/2018 |
| [survey-date-started:prescreener:value] | 2018-12-25 |
| [survey-date-started:prescreener][last-instance] | 12/25/2018 |
| [survey-date-started:prescreener:value][current-instance] | 2018-12-25 |
| **survey-time-completed:instrument** | The date and time on which the specified survey instrument was completed for the current record/event. The format must be [survey-time-completed:instrument], in which 'instrument' is the unique form name of the desired instrument. In a piping context, such as in a field label, survey invitation, or inside the @DEFAULT action tag, the format of the date and time will be displayed based on the current user's date/time display preferences. If you wish to have it return the raw value, which will instead be in 'YYYY-MM-DD HH:MM:SS' format and would be more appropriate for conditional logic or calculated fields, simply append ':value'. If the survey has not been completed, it returns a blank value. | [survey-time-completed:followup] | 12/25/2018 09:00am |
| [survey-time-completed:followup:value] | 2018-12-25 09:00:00 |
| [survey-time-completed:followup][last-instance] | 12/25/2018 09:00am |
| [survey-time-completed:followup:value][current-instance] | 2018-12-25 09:00:00 |
| **survey-date-completed:instrument** | The date on which the specified survey instrument was completed for the current record/event (includes date component only, unlike [survey-time-completed]). The format must be [survey-date-completed:instrument], in which 'instrument' is the unique form name of the desired instrument. In a piping context, such as in a field label, survey invitation, or inside the @DEFAULT action tag, the format of the date will be displayed based on the current user's date display preferences. If you wish to have it return the raw value, which will instead be in 'YYYY-MM-DD' format and would be more appropriate for conditional logic or calculated fields, simply append ':value'. If the survey has not been completed, it returns a blank value. | [survey-date-completed:prescreener] | 12/25/2018 |
| [survey-date-completed:prescreener:value] | 2018-12-25 |
| [survey-date-completed:prescreener][last-instance] | 12/25/2018 |
| [survey-date-completed:prescreener:value][current-instance] | 2018-12-25 |
| **survey-duration:instrument:units** | The amount of time that has elapsed since the survey was started (returned in the time units specified, defaults to 's'), and represents the difference between the survey's start time and either its 1) completion time (if completed) or 2) the current time (if not completed). Options for 'units': 'y' (years, 1 year = 365.2425 days), 'M' (months, 1 month = 30.44 days), 'd' (days), 'h' (hours), 'm' (minutes), 's' (seconds). Tip: The unit’s value should not be wrapped in apostrophes or quotes. NOTE: If using [survey-duration] inside a calculated field or @CALCTEXT field, the value for partially completed surveys will always be changing until the survey is completed, and thus the value might not be accurate on reports or data exports unless you run Data Quality rule H immediately beforehand. | [survey-duration:prescreener] | 845 |
| [survey-duration:prescreener:h] | 2.34 |
| [visit\_1\_arm\_1][survey-duration:prescreener][last-instance] | 3829 |
| **survey-duration-completed:instrument:units** | The total time it took to complete the survey (returned in the time units specified, defaults to 's'), and represents the difference between the survey's start time and completion time. NOTE: A blank value will be returned if the survey has not been completed. Options for 'units': 'y' (years, 1 year = 365.2425 days), 'M' (months, 1 month = 30.44 days), 'd' (days), 'h' (hours), 'm' (minutes), 's' (seconds). Tip: The units value should not be wrapped in apostrophes or quotes. | [survey-duration-completed:prescreener] | 93 |
| [survey-duration-completed:prescreener:m] | 12.7 |
| [visit\_1\_arm\_1][survey-duration-completed:prescreener:d][last-instance] | 3.89 |
| **Event & Arm** |
| **event-id** | (longitudinal only) The event id number of the current event. | [event-id] | 112 |
| **event-number** | (longitudinal only) The current event's ordinal number as listed on the Define My Events page that denotes the order of the event within a given arm. | [event-number] | 4 |
| **event-name** | (longitudinal only) The current event (unique event name). Note: This can be used as stand-alone or can be prepended to a field variable. | [event-name] | event\_2\_arm\_1 |
| [event-name][weight] | 125 |
| **event-label** | (longitudinal only) The current event (the event label, not the unique event name). | [event-label] | Event 2 |
| **previous-event-name** | (longitudinal only) The event (unique event name) that occurs immediately before the current event (blank if current event is the first event). Note: This can be used as stand-alone or can be prepended to a field variable. Important: When using this as a stand-alone variable, it will always return the event that occurs \*immediately\* before the current event, whereas if it is prepended to another variable, it will instead return the closest previous event for which the field's instrument has been designated, which might be different than the event that occurs directly before the current event. This behavior is due to the fact that the field's instrument might not always be designated for the event that occurs directly before the current event. | [previous-event-name] | visit\_4\_arm\_2 |
| [previous-event-name][heart\_rate] | 62 |
| **previous-event-label** | (longitudinal only) The event (the event label, not the unique event name) that occurs immediately before the current event (blank if current event is the first event). | [previous-event-label] | Visit 4 |
| **next-event-name** | (longitudinal only) The event (unique event name) that occurs immediately after the current event (blank if current event is the last event). Note: This can be used as stand-alone or can be prepended to a field variable. Important: When using this as a stand-alone variable, it will always return the event that occurs \*immediately\* after the current event, whereas if it is prepended to another variable, it will instead return the closest following event for which the field's instrument has been designated, which might be different than the event that occurs directly after the current event. This behavior is due to the fact that the field's instrument might not always be designated for the event that occurs directly after the current event. | [next-event-name] | event\_3\_arm\_5 |
| [next-event-name][provider] | Taylor |
| **next-event-label** | (longitudinal only) The event (the event label, not the unique event name) that occurs immediately after the current event (blank if current event is the last event). | [next-event-label] | Third Timepoint |
| **first-event-name** | (longitudinal only) The first event (unique event name) for the current arm. Note: This can be used as stand-alone or can be prepended to a field variable. Important: When using this as a stand-alone variable, it will always return the first event for the current arm, whereas if it is prepended to another variable, it will instead return the first event (for the current arm) for which the field's instrument has been designated, which might be different than the very first event. This behavior is due to the fact that the field's instrument might not always be designated for the very first event. | [first-event-name] | visit\_1\_arm\_2 |
| [first-event-name][heart\_rate] | 74 |
| **first-event-label** | (longitudinal only) The first event (the event label, not the unique event name) for the current arm. | [first-event-label] | Visit 1 |
| **last-event-name** | (longitudinal only) The last event (unique event name) for the current arm. Note: This can be used as stand-alone or can be prepended to a field variable. Important: When using this as a stand-alone variable, it will always return the last event for the current arm, whereas if it is prepended to another variable, it will instead return the last event (for the current arm) for which the field's instrument has been designated, which might be different than the very last event. This behavior is due to the fact that the field's instrument might not always be designated for the very last event. | [last-event-name] | week\_22\_arm\_1 |
| [last-event-name][provider] | Minor |
| **last-event-label** | (longitudinal only) The last event (the event label, not the unique event name) for the current arm. | [last-event-label] | Week 22 |
| **arm-number** | (longitudinal only) The current arm number. | [arm-number] | 2 |
| **arm-label** | (longitudinal only) The arm label text of the current arm. | [arm-label] | Drug B |
| **Repeating Instruments and Events** |
| **previous-instance** | (repeating instruments/events only) The repeating instance number that occurs immediately before the current instance (e.g., current instance minus 1). 'Instance' refers to the instance of either a repeating instrument or a repeating event. Note: This can be used as stand-alone or can be appended to a field variable. | [previous-instance] | 3 |
| [weight][previous-instance] | 145 |
| **current-instance** | (repeating instruments/events only) The repeating instance number of a repeating instrument or a repeating event in the current context. Note: This can be used as stand-alone or can be appended to a field variable. | [current-instance] | 2 |
| [heart\_rate][current-instance], which is the same as [heart\_rate] | 84 |
| **next-instance** | (repeating instruments/events only) The repeating instance number that occurs immediately after the current instance (e.g., current instance plus 1). 'Instance' refers to the instance of either a repeating instrument or a repeating event. Note: This can be used as stand-alone or can be appended to a field variable. | [next-instance] | 7 |
| [provider][next-instance] | Harris |
| **first-instance** | (repeating instruments/events only) The first (lowest numbered) repeating instance number for the current record/event context. Note: This can be used as stand-alone or can be appended to a field variable. | [first-instance] | 1 |
| [age][first-instance] | 24 |
| **last-instance** | (repeating instruments/events only) The last (highest numbered) repeating instance number for the current record/event context. Note: This can be used as stand-alone or can be appended to a field variable. | [last-instance] | 6 |
| [glucose][last-instance] | 119 |
| **new-instance** | (repeating instruments/events only) A new, not-yet-created repeating instance for the current record/event context, in which [new-instance] is essentially [last-instance]+1. Note: This can be used as stand-alone or alternatively can be used by being appended to only the following Smart Variables: [survey-link], [survey-url], [survey-access-code], [form-link], and [form-url]. | [new-instance] | 14 |
| [survey-link:repeating\_survey:Repeating Survey][new-instance] | [Repeating Survey](http://example.com/?s=FAKE) |
| [survey-url:repeating\_survey][new-instance] | https://redcap.vumc.org/surveys/?s=fake&new |
| VIDEO: How to use Smart Charts, Functions, and Tables (14 min)**Aggregate Functions, Charts, and Tables**(also known as Smart Functions, Smart Charts, and Smart Tables) |
| **aggregate-min:fields:parameters** | The minimum value of a field across all records in the project (including all events and/or repeating instances in all records). Multiple fields may be used and must be comma-separated. | [aggregate-min:age] | 13 |
| [aggregate-min:age,participant\_age,other\_age] | 7 |
| **aggregate-max:fields:parameters** | The maximum value of a field across all records in the project (including all events and/or repeating instances in all records). Multiple fields may be used and must be comma-separated. | [aggregate-max:age] | 95 |
| **aggregate-mean:fields:parameters** | The mean/average value of a field across all records in the project (including all events and/or repeating instances in all records). Multiple fields may be used and must be comma-separated. | [aggregate-mean:age] | 100.1 |
| **aggregate-median:fields:parameters** | The median value of a field across all records in the project (including all events and/or repeating instances in all records). Multiple fields may be used and must be comma-separated. | [aggregate-median:age] | 57 |
| **aggregate-sum:fields:parameters** | The sum of all values for a field across all records in the project (including all events and/or repeating instances in all records). Multiple fields may be used and must be comma-separated. | [aggregate-sum:age] | 9451 |
| **aggregate-count:fields:parameters** | The count of all values for a field across all records in the project (including all events and/or repeating instances in all records). Multiple fields may be used and must be comma-separated. | [aggregate-count:age] | 68 |
| **aggregate-stdev:fields:parameters** | The standard deviation of a field across all records in the project (including all events and/or repeating instances in all records) Multiple fields may be used and must be comma-separated. | [aggregate-stdev:age] | 5.4 |
| **aggregate-unique:fields:parameters** | The count of unique values (i.e., a count that does not consider duplicate values) of a field across all records in the project (including all events and/or repeating instances in all records). Multiple fields may be used and must be comma-separated. | [aggregate-unique:age] | 22 |
| **scatter-plot:x-axis-field, y-axis-field, grouping-field:parameters** | Displays a scatter plot of one number/date/datetime field for the x-axis and a second field (number field only) for the y-axis. (If a second field is not provided, a random value will be assigned for the y-axis.) It can optionally perform color grouping if a third field (multiple choice only) is provided. All fields must be comma-separated. Note: When using multiple fields, data will be naturally grouped from the same event and/or repeating instance. | [scatter-plot:height] | [A chart displayed on the page] |
| [scatter-plot:height,weight] | [A chart displayed on the page] |
| [scatter-plot:height,weight,sex] | [A chart displayed on the page] |
| **line-chart:x-axis-field, y-axis-field, grouping-field:parameters** | Displays a line chart of one number/date/datetime field for the x-axis and a second field (number field only) for the y-axis. It can optionally perform color grouping if a third field (multiple choice only) is provided. All fields must be comma-separated. Note: A line chart is essentially the same as a scatter plot except with dots connected with a line. Note: When using multiple fields, data will be naturally grouped from the same event and/or repeating instance. | [line-chart:visit\_date,weight] | [A chart displayed on the page] |
| [line-chart:visit\_date,weight,sex] | [A chart displayed on the page] |
| **bar-chart:field, grouping-field:parameters** | Displays a bar chart for a single multiple-choice field. It can optionally perform color grouping if a second field (multiple choice only) is provided. The fields must be comma-separated. Note: When using multiple fields, data will be naturally grouped from the same event and/or repeating instance. | [bar-chart:race] | [A chart displayed on the page] |
| [bar-chart:race,sex] | [A chart displayed on the page] |
| **pie-chart:field:parameters** | Displays a pie chart for a single multiple-choice field. | [pie-chart:race] | [A chart displayed on the page] |
| **donut-chart:field:parameters** | Displays a donut chart for a single multiple-choice field. Note: A donut chart is essentially the same as a pie chart, but with the center removed. | [donut-chart:race] | [A chart displayed on the page] |
| **stats-table:fields:columns:parameters** | Displays a table of descriptive statistics for one or more fields (comma-separated) in which each field is represented as a row in the table. There is no limit to the number of fields that can be used. By default, all columns will be displayed and are as follows: Count, Missing, Unique, Min, Max, Mean, Median, StDev, Sum. To display only a subset of the columns, you may provide any of the following designations (comma-separated) that represent a specific column in the table: count, missing, unique, min, max, mean, median, stdev, sum. | [stats-table:age] | [A table displayed on the page] |
| [stats-table:age,weight,height] | [A table displayed on the page] |
| [stats-table:age,weight,height:min,max,median] | [A table displayed on the page] |
| **Optional Parameters for Aggregate Functions, Charts, and Tables** |
| **\_\_\_\_\_:\_\_\_\_\_:R-XXXXXXXXXX** | Unique Report Name - For Aggregate Functions, Charts, and Tables, filter the data being used by appending a Unique Report Name. Next to each report on the 'My Reports & Exports' page is its unique report name, which has 'R-' followed by alphanumeric characters. By default, all Aggregate Functions, Charts, and Tables will use the values of all records in the project, but if a unique report name is appended to any of them, only data from that specific report will be used. Using a report as a surrogate to filter data is an extremely useful technique for performing complex filtering logic for Aggregate Functions, Charts, and Tables. IMPORTANT: When referring to a unique report name in Smart Charts, Smart Tables, or Smart Functions, no other filtering parameters can be used (e.g., DAGs, events) with the report filter. If you wish to additionally filter by DAGs and/or events, it is recommended that you add such filtering to the report itself by editing the report. | [aggregate-min:age:R-5898NNMYL4] | 13 |
| [pie-chart:race:R-2554F4TCNT] | 22 |
| [stats-table:height,weight,age:R-319PCCFN87] | [A table displayed on the page] |
| **\_\_\_\_\_:\_\_\_\_\_:record-name** | "record-name" - For Aggregate Functions, Charts, and Tables, filter the data being used to the \*current record\* by using the literal value 'record-name'. Note: This parameter will only work in a context where a single record is being viewed/accessed, such as on a survey page, data entry form, etc. This parameter can be used with any of the other parameters except unique report names. | [aggregate-max:weight:record-name] | 95 |
| [line-chart:height,weight:record-name] | [A chart displayed on the page] |
| **\_\_\_\_\_:\_\_\_\_\_:event-name** | "event-name" - For Aggregate Functions, Charts, and Tables, filter the data being used to the \*current event\* (longitudinal projects only) by using the literal value 'event-name'. Note: This parameter will only work in a context where a single record/event is being viewed/accessed, such as on a survey page, data entry form, etc. This parameter can be used with any of the other parameters except unique report names. | [aggregate-max:weight:event-name] | 72 |
| [line-chart:height,weight:event-name] | [A chart displayed on the page] |
| **\_\_\_\_\_:\_\_\_\_\_:unique-event-names** | Unique Event Names - For Aggregate Functions, Charts, and Tables, filter the data being used to specific events (longitudinal projects only) by providing an event's unique event name (found on the Define My Events page). You may use one or more unique event names (comma-separated). Note: This parameter can be used with any of the other parameters except unique report names. | [aggregate-min:weight:visit\_1\_arm\_1] | 19 |
| [line-chart:height,weight:visit\_1\_arm\_1,visit\_1\_arm\_2] | [A chart displayed on the page] |
| **\_\_\_\_\_:\_\_\_\_\_:user-dag-name** | "user-dag-name" - For Aggregate Functions, Charts, and Tables, filter the data being used to the records assigned to the \*current user's Data Access Group\* by using the literal value 'user-dag-name'. Note: This parameter will only work in a context where an authenticated user belongs to a project and has been assigned to a DAG in the project (this excludes survey pages and public project dashboards). This parameter can be used with any of the other parameters except unique report names. | [aggregate-mean:weight:user-dag-name] | 45.2 |
| [line-chart:height,weight:user-dag-name] | [A chart displayed on the page] |
| **\_\_\_\_\_:\_\_\_\_\_:unique-dag-names** | Unique DAG Names - For Aggregate Functions, Charts, and Tables, filter the data being used to the records assigned to specific Data Access Groups by providing a DAG's unique group name (found on the Data Access Groups page). You may use one or more unique DAG names (comma-separated). Note: This parameter can be used with any of the other parameters except unique report names. | [aggregate-median:weight:vanderbilt\_group] | 36 |
| [line-chart:height,weight:vanderbilt\_group,duke\_group,harvard\_group] | [A chart displayed on the page] |
| **\_\_\_\_\_:\_\_\_\_\_:bar-vertical** | "bar-vertical" - Display a bar chart with the bars going vertically instead of horizontally (the default) by using the literal value 'bar-vertical'. Note: This parameter can be used with any of the other parameters. | [bar-chart:race:bar-vertical] | [A chart displayed on the page] |
| [bar-chart:race,sex:bar-vertical] | [A chart displayed on the page] |
| **\_\_\_\_\_:\_\_\_\_\_:bar-stacked** | "bar-stacked" - Only for bar charts using two fields, display the bar chart with the bars stacked on top of one another for each choice. Whereas the default view is that the bars of each field are displayed side by side to show the color grouping. To enable this, use the literal value 'bar-stacked'. Note: This parameter can be used with any of the other parameters. | [bar-chart:race,sex:bar-stacked] | [A chart displayed on the page] |
| [bar-chart:race,sex:bar-vertical,bar-stacked] | [A chart displayed on the page] |
| **\_\_\_\_\_:\_\_\_\_\_:no-export-link** | "no-export-link" - Only used for [stats-table], hides the "Export table (CSV)" link that by default is displayed immediately below the Smart Table. | [stats-table:age,race,sex:no-export-link] | [A chart displayed on the page] |
| **Randomization** |
| **rand-number:n** | The randomization number assigned to the record. For randomization in a text field (blinded allocation), this is equivalent to piping the randomization field. For randomization in a categorical field (open allocation), this will be the randomization number associated with the randomization group allocation, if one has been uploaded (this is optional).Use :n to refer to a specific randomization where a project has more than one (default=1). | [rand-number] | R1-5638 |
| [rand-number:2] | R2-4231 |
| **rand-time:n** | The **server** date and time at which a record was randomized. In a piping context, such as in a field label, survey invitation, or inside the @DEFAULT action tag, the format of the date and time will be displayed based on the current user's date/time display preferences. If you wish to have it return the raw value, which will instead be in 'YYYY-MM-DD HH:MM:SS' format and would be more appropriate for conditional logic or calculated fields, simply append :value.Use :n to refer to a specific randomization where a project has more than one (default=1). | [rand-time] | 31/05/2024 4:02pm |
| [rand-time:2:value] | 2024-05-31 16:02:15 |
| **rand-utc-time:n** | The **UTC** date and time at which a record was randomized. In a piping context, such as in a field label, survey invitation, or inside the @DEFAULT action tag, the format of the date and time will be displayed based on the current user's date/time display preferences. If you wish to have it return the raw value, which will instead be in 'YYYY-MM-DD HH:MM:SS' format and would be more appropriate for conditional logic or calculated fields, simply append :value.Use :n to refer to a specific randomization where a project has more than one (default=1). | [rand-utc-time] | 31/05/2024 5:02am |
| [rand-utc-time:2:value] | 2024-05-31 05:02:15 |
| **MyCap** |
| **mycap-project-code** | The MyCap project code of the current REDCap project. | [mycap-project-code] | P-5CLDRMQ28TSJJXD7KA1K |
| **mycap-participant-code** | The participant code of the current record. | [mycap-participant-code] | U-NEXAXSMQZ3YFTZDMMSEX |
| **mycap-participant-url** | The web address (URL) for the current record that can be used by the participant to join the project on the MyCap mobile app. | [mycap-participant-url] | https://mycap.link/join/?apn=org.vumc.victr.mycap&isi=1209842552&ibi=org.vumc.mycap&link=https%3A%2F%2Fmycap.link%2Fjoin.html%3Fpayload%3DeyJlbmRwb2ludCI6Imh0dHA6XC9cL2xvY2FscmVkY2FwOjgwODBcL1JlZGNhcFwvcmVkY2FwX3YxMS4xLjBcL0V4dGVybmFsTW9kdWxlc1wvP3ByZWZpeD1teWNhcCZwYWdlPXdlYiUyRmFwaSUyRmluZGV4IiwicHJvamVjdCI6IlAtNUNMRFJNUTI4VFNKSlhEN0tBMUsifQ%253D%253D%26participant%3DU-NEXAXSMQZ3YFTZDMMSEX |
| **mycap-participant-link:Custom Text** | The HTML web link belonging to the current record that, when clicked, will allow the participant to join the project on the MyCap mobile app. 'Custom Text' is an optional parameter whereby you can specify the visible link text, and if it is not provided, it defaults to simply displaying the URL as the link text. | [mycap-participant-link:Click this MyCap link] | [Click this MyCap link](https://mycap.link/join/?apn=org.vumc.victr.mycap&isi=1209842552&ibi=org.vumc.mycap&link=https%3A%2F%2Fmycap.link%2Fjoin.html%3Fpayload%3DeyJlbmRwb2ludCI6Imh0dHA6XC9cL2xvY2FscmVkY2FwOjgwODBcL1JlZGNhcFwvcmVkY2FwX3YxMS4xLjBcL0V4dGVybmFsTW9kdWxlc1wvP3ByZWZpeD1teWNhcCZwYWdlPXdlYiUyRmFwaSUyRmluZGV4IiwicHJvamVjdCI6IlAtNUNMRFJNUTI4VFNKSlhEN0tBMUsifQ%253D%253D%26participant%3DU-NEXAXSMQZ3YFTZDMMSEX) |
| **Rewards** |
| **reward-amount:R-id** | The monetary value of the reward associated with the specified reward ID (R-id).**Note**: *This value reflects the amount assigned at the time the reward was issued to a participant. It may differ from the current amount set for that reward option, as changes apply only to future recipients*. | [reward-amount:R-123] | 50 |
| **reward-product-id:R-id** | The unique ID of the reward product in the provider's system associated with the specified reward ID (R-id). | [reward-product-id:R-123] | U579023 |
| **reward-product-name:R-id** | The description of the reward product in the provider's system associated with the specified reward ID (R-id). | [reward-product-name:R-123] | reward link preferred |
| **reward-status:R-id** | The current status of the reward order associated with the specified reward ID (R-id). Possible statuses include:*invalid, eligible, ineligible, reviewer:approved, reviewer:rejected, buyer:approved, buyer:rejected, order:placed, completed, scheduled* | [reward-status:R-123] | reviewer:approved |
| **reward-redcap-order-id:R-id** | The unique code in REDCap identifying the reward order associated with the specified reward ID (R-id). Used for cross-referencing with the provider. | [reward-redcap-order-id:R-123] | P22\_A1\_R16\_RO1-OI1-20250414102940 |
| **reward-provider-order-id:R-id** | The unique order code in the reward provider's system associated with the specified reward ID (R-id). Used for cross-referencing with REDCap. | [reward-provider-order-id:R-123] | RA250414-136008-21 |
| **reward-url:R-id** | The web address of the page where the participant can redeem their reward through the provider (e.g., Tango) associated with the specified reward ID (R-id). | [reward-url:R-123] | https://sandbox.rewardlink.io/r/1/ABCD-123456789\_0 |
| **reward-link:R-id** | The redeem link, when clicked, will navigate to the page where the participant can redeem their reward through the provider (e.g., Tango) associated with the specified reward ID (R-id). | [reward-link:R-123] | [Reward Link](https://sandbox.rewardlink.io/r/1/ABCD-123456789_0) |
| **Miscellaneous** |
| **project-id** | The Project ID (i.e., PID) of the current REDCap project. | [project-id] | 39856 |
| **data-table** | The name of the specific redcap\_data\* database table (located on the back-end REDCap database server) used by the current REDCap project. If a PID (project ID) is provided as a parameter (e.g., [data-table:435]), then the name of the redcap\_data\* table will be returned for that specific project/PID. | [data-table] | redcap\_data3 |
| [data-table:731] | redcap\_data2 |
| **redcap-base-url** | The base web address for this REDCap installation. | [redcap-base-url] | https://redcap.vumc.org/ |
| **redcap-version** | The current REDCap version number of this REDCap installation. | [redcap-version] | 15.5.6 |
| **redcap-version-url** | The base web address of the current REDCap version directory for this REDCap installation. | [redcap-version-url] | https://redcap.vumc.org/redcap\_v15.5.6/ |
| **survey-base-url** | The base web address for surveys for this REDCap installation. | [survey-base-url] | https://redcap.vumc.org/ |