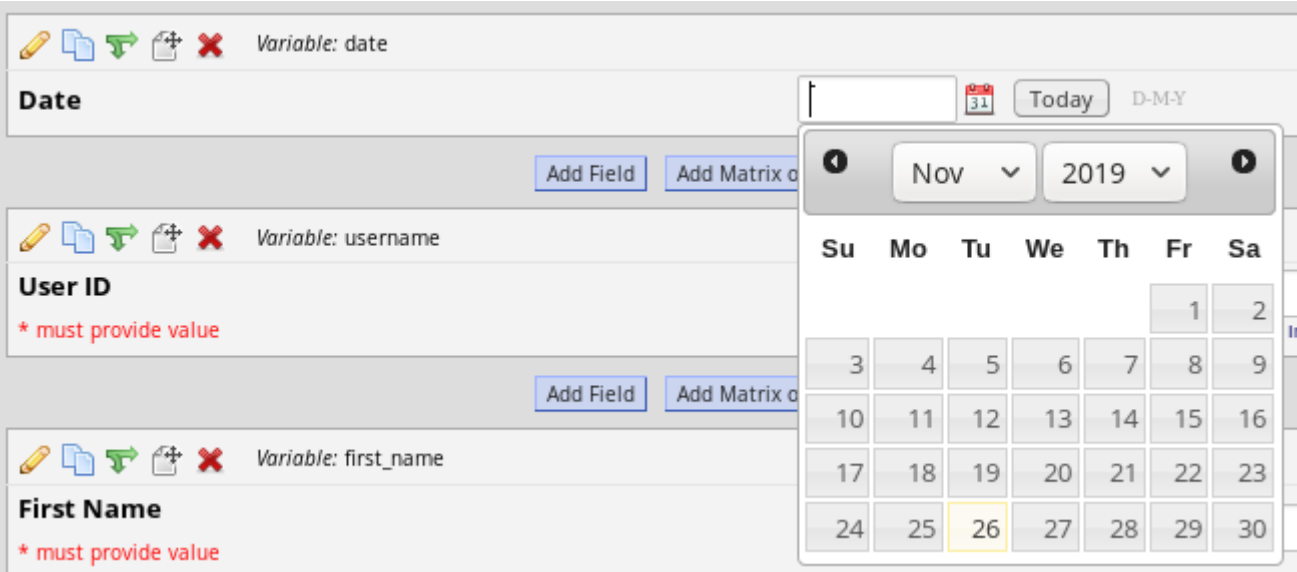


# Validation

To improve data quality, use REDCap validation rules. For example, you can set minimum and maximum values that help to narrow down the input options. In addition, use rules to ensure that valid dates are entered.

When using the Text Box method of entry, it is best to ensure that the data coming in is the type of data that you are expecting to see. One method of doing this is by employing the Validation option in the field creation screen. By utilising this feature, REDCap will prompt an error when a field's entry does not meet certain expectations for data type. There are basic data types that you can designate via the Validation option: date (3 formats), datetime (6 formats), e-mail, integer, letters only, number (5 formats), time (2 formats). These are the most relevant:



The screenshot displays the REDCap field creation interface. It shows three fields with their respective validation rules:

- Date** (Variable: date): Includes a calendar icon and a "Today" button. A calendar widget is open, showing the date 26th of November 2019.
- User ID** (Variable: username): Includes a red asterisk and the text "\* must provide value".
- First Name** (Variable: first\_name): Includes a red asterisk and the text "\* must provide value".

The calendar widget shows the following dates:

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

- **Date:** The three different formats you can specify for date are Day-Month-Year, Month-Day-Year, and Year-Month-Day. Regardless of which type you choose, a small calendar icon will be visible next to the field in data entry which you can utilise to easily specify a date in the appropriate format. You can also click the "Today" icon to automatically fill in the current date.

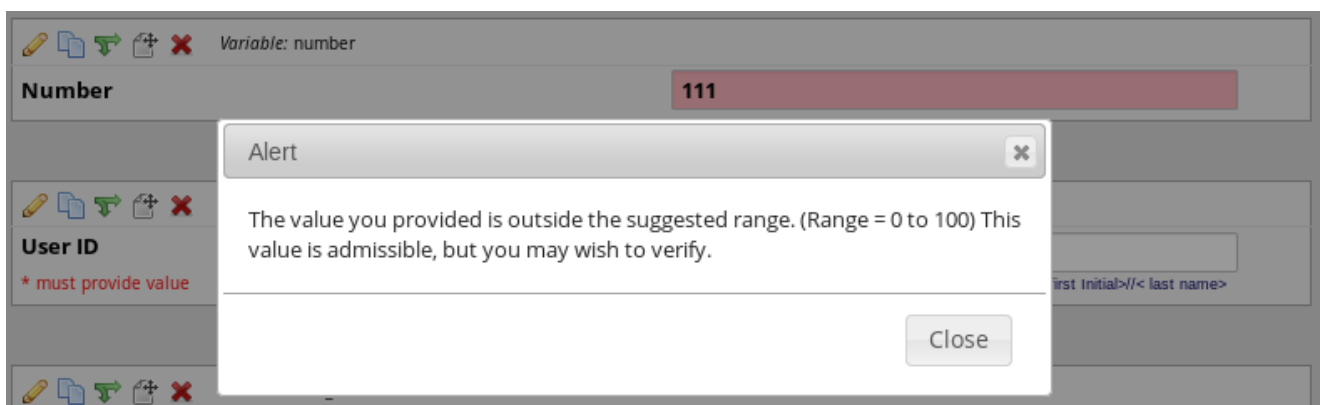
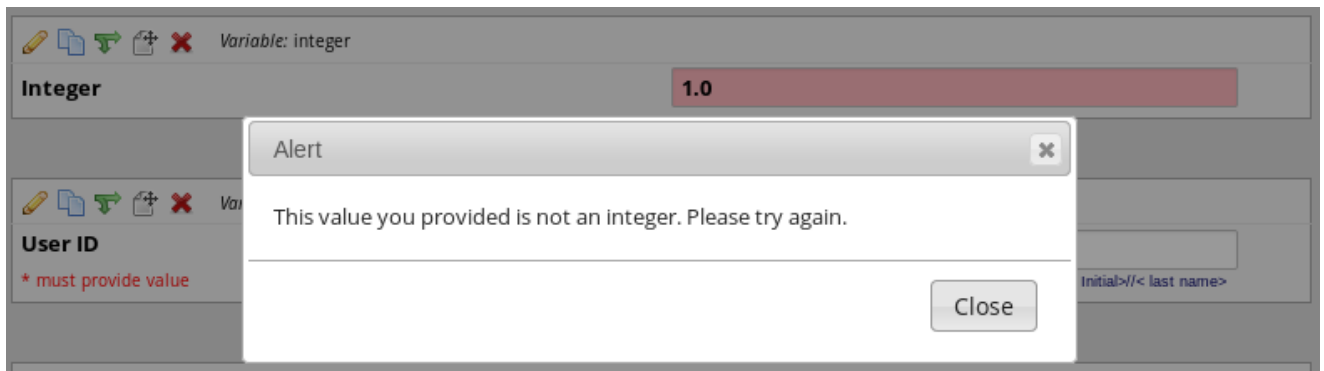
The screenshot shows a REDCap form with four fields: Datetime, User ID, First Name, and Last Name. Each field has a set of icons (edit, copy, paste, add, delete) and a variable name. The Datetime field is currently selected, and a calendar and time picker are open over it. The calendar shows the month of November 2019, with the 26th selected. The time picker shows 11:13. The User ID, First Name, and Last Name fields have a red asterisk and the text '\* must provide value' below them.

- **Datetime:** Datetime can be recorded with or without a “seconds” count. The three without seconds follow the same formats as the three Date formats (listed above), with an additional H:M to indicate time (Hours:Minutes). The three that do include seconds also follow the same three Date formats, with an additional H:M:S to indicate time (Hours:Minutes:Seconds). Like the Date option, a calendar icon appears next to the field, and in addition, a clock icon appears. You can also click the “Now” icon to automatically fill in the current date and time.

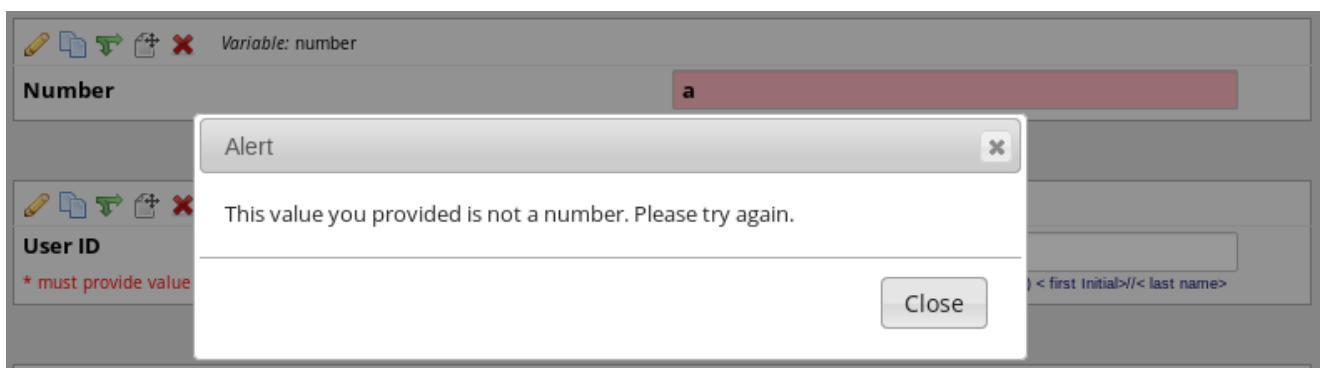
The screenshot shows a REDCap form with an Email field containing the value 'test'. An alert dialog box is open over the field, displaying the message: 'Alert: This field must be a valid email address (like joe@user.com). Please re-enter it now.' The dialog box has a 'Close' button at the bottom right.

- **E-mail:** To validate an e-mail address entry, REDCap checks for a singular “@” symbol and an appropriate e-mail domain ending (such as “.com” or “.edu”). The inclusion of other special characters that would not be a part of valid e-mail addresses (such as “\$” or “#”) will also

prompt a data validation error. This is very widely applicable, however, if you are expecting e-mail addresses connected to new or uncommon domains, we do not recommend using this validation option.



- **Integer:** Integers include all of the negative and positive whole numbers, plus zero. This means that any decimal or fractional values will prompt a validation error, as well as any values outside the designated minimum-maximum range.



- **Number:** This validation type accepts numbers, including decimal values. The five formats are derived from the number of decimal points you choose to allot: 1, 2, 3, 4, or unspecified. If you choose to specify a number of decimal points, an error will be prompted if that exact number of decimal points is not met. For instance, if you have specified two decimal points, an entry of "3" or "3.0" would not be accepted – only "3.00" is considered a valid entry in this case.