

Exercise 3

This exercise involves generating GUIs with **mirtCAT** for administering general surveys, test, and CATs.

Question 1

Read in the questions and answers from the file 'Exercise-3_df.csv', and assign it to an object called `df`. Inspect the object to determine what you're dealing with.

After doing so, supply the `df` object to `mirtCAT()`, requesting that each response option be presented as radio buttons. Select 5 items at random for the session where skipping over questions is not allowed, and terminate the GUI after the responses to these items have been collected. Store the results into an object `res` for future inspection with `print()` and `summary()`.

Question 2

Modify the `df` object such that

- The first item has only two response options to choose from and are presented *in-line*,
- The second item requires a text-box input for users to type their answer in manually, and
- The third item is a slider input within the range 32 to 37

After doing so, supply `df` back to `mirtCAT()` to test these three items (e.g., use the sequential selection method and set `forced_choice` to `FALSE` in the `shinyGUI` list).

Question 3

Read the model object that you saved from **Exercise 1**. This will be used as the background information for constructing a CAT given the previous questions and answers.

Using the defined `df` and `mo` objects it's time to construct a CAT-GUI. Supply these objects to `mirtCAT()`, and set the selection method to the maximum expected information criteria (**MEI**) with a randomly selected starting item. As well, create a session which satisfy these criteria:

- Require that a minimum of 10 items are administered,
- Terminate the test if
 - $SE(\hat{\theta}) < .4$
 - number of items exceeds 20
 - testing time exceeds 10 minutes
- Set the estimation algorithm of $\hat{\theta}$ to EAP, and
- (Optional) change the prior distribution of the EAP estimator to a uniform distribution within the range [-6,6]

Once done, test the interface to see if it works.