

Webexercises

This is a Web Exercise template created by the [#PsyTeachR team at the University of Glasgow](#), based on ideas from [Software Carpentry](#). This template shows how instructors can easily create interactive web documents that students can use in self-guided learning.

The `{webexercises}` package provides a number of functions that you use in [inline R code](#) or through code chunk options to create HTML widgets (text boxes, pull down menus, buttons that reveal hidden content). Examples are given below. Render this file to HTML to see how it works.

NOTE: To use the widgets in the compiled HTML file, you need to have a JavaScript-enabled browser.

Example Questions

Fill-In-The-Blanks (`fitb()`)

Create fill-in-the-blank questions using `fitb()`, providing the answer as the first argument.

- 2 + 2 is __¹

You can also create these questions dynamically, using variables from your R session.

- The square root of 49 is: __²

The blanks are case-sensitive; if you don't care about case, use the argument `ignore_case = TRUE`.

- What is the letter after D? __³

If you want to ignore differences in whitespace use, use the argument `ignore_ws = TRUE` (which is the default) and include spaces in your answer anywhere they could be acceptable.

¹4

²7

³E

- How do you load the tidyverse package? _____⁴

You can set more than one possible correct answer by setting the answers as a vector.

- Type a vowel: __⁵

You can use regular expressions to test answers against more complex rules.

- Type any 3 letters: _____⁶

Multiple Choice (`mcq()`)

- “Never gonna give you up, never gonna: ”⁷
- (A) let you go
- (B) turn you down
- (C) run away
- (D) let you down

” - “I⁸

- (A) bless the rains
- (B) guess it rains
- (C) sense the rain

down in Africa” -Toto

True or False (`torf()`)

- True or False? You can permute values in a vector using `sample()`. TRUE / FALSE⁹

⁴`library(tidyverse), library(“tidyverse”), library(‘tidyverse’)`

⁵A, E, I, O, U

⁶`^[a-zA-Z]{3}$`

⁷let you down

⁸bless the rains

⁹TRUE

Longer MCQs (`longmcq()`)

When your answers are very long, sometimes a drop-down select box gets formatted oddly. You can use `longmcq()` to deal with this. Since the answers are long, It's probably best to set up the options inside an R chunk with `echo=FALSE`.

What is a p-value?

10

- (A) the probability that the null hypothesis is true
- (B) the probability of the observed, or more extreme, data, under the assumption that the null-hypothesis is true
- (C) the probability of making an error in your conclusion

What is true about a 95% confidence interval of the mean?

11

- (A) 95% of the data fall within this range
- (B) if you repeated the process many times, 95% of intervals calculated in this way contain the true mean
- (C) there is a 95% probability that the true mean lies within this range

Checked sections

Create sections with the class `webex-check` to add a button that hides feedback until it is pressed. Add the class `webex-box` to draw a box around the section (or use your own styles).

I am going to learn a lot: TRUE / FALSE¹²

What is a p-value? ¹³

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- (B) the probability of the observed, or more extreme, data, under the assumption that the null-hypothesis is true

¹⁰the probability of the observed, or more extreme, data, under the assumption that the null-hypothesis is true

¹¹if you repeated the process many times, 95% of intervals calculated in this way contain the true mean

¹²TRUE

¹³the probability of the observed, or more extreme, data, under the assumption that the null-hypothesis is true

- (C) the probability of making an error in your conclusion

Hidden solutions and hints

You can fence off a solution area that will be hidden behind a button using `hide()` before the solution and `unhide()` after, each as inline R code. Pass the text you want to appear on the button to the `hide()` function.

If the solution is a code chunk, instead of using `hide()` and `unhide()`, simply set the `webex.hide` chunk option to `TRUE`, or set it to the string you wish to display on the button.

Recreate the scatterplot below, using the built-in `cars` dataset.

