

Spring 2022 courses

IN PROGRESS ds quiz 5

Settings

- A question has only ONE right answer unless otherwise noted
- The quiz covers the recent content (weeks 6+7)
- After the first play, the quiz will be opened for unlimited play
- Let me know if you have any comments or corrections
- Some of the questions were taken from DataCamp (and modified)
- Get the DataCamp mobile app and complete daily practice runs!

Running R inside Org-mode is a REPL application

Tip: REPL stands for Read-Eval-Print-Loop.

TRUE

Select the code to return the output

Below is a preview of the `mat` matrix.

```
[,1] [,2] [,3]
[1,]  1   3   5
[2,]  2   4   6
```

Select the code to return the output:

```
[,1] [,2] [,3]
[1,] FALSE FALSE TRUE
[2,] FALSE TRUE  TRUE
```

TRUE:

- `mat > 3`

FALSE:

- `~mat != 1 ~`
- `mat <= 1`
- `mat[c((1,3),(2,2),(2,3))]`

Feedback: Vectorization! Every matrix position is checked and the result is returned as a Boolean value. Only `mat > 3` generates the shown logical matrix.

Select the code to return the output

Below is a preview of the `mat` matrix.

```

      [,1] [,2] [,3]
[1,]    1    3    5
[2,]    2    4    6

```

Select the code to create this matrix.

TRUE:

- `matrix(c(1,3,5,2,4,6),nrow=2,byrow=TRUE)`

FALSE:

- `matrix(c(1:6),ncol=2,byrow=TRUE)`
- `matrix(c(1:6),nrow=2,byrow=TRUE)`
- `matrix(c(1:6),byrow=TRUE)`

ggplot2 was created as part of the "Tidyverse" environment

FALSE

Feedback: `ggplot2` predates the Tidyverse by ca. 5 years. However, when you download the Tidyverse package, `ggplot2` is in it.

ggplot2 is especially recommended for fast, interactive data set exploration

FALSE

Feedback: No, it's used at the end of the data science pipeline, when you wish to communicate your insights and want to use prettier pictures for that. So-called generic graphic functions like `plot()`, or other fast graphics, in connection with `data.table`, are more appropriate, especially for large data sets.

To show respect when a guest speaker gives a talk, you should

This question has more than one correct answer.

TRUE:

- Make him or her feel seen and heard (e.g. by making eye contact, asking questions etc.)
- Do your research and prepare some questions in advance

FALSE:

- Reach out to the speaker before the talk, e.g. via LinkedIn
- Use body language to make sure that you get proper attention

Feedback: Every person of course has a different approach that works for him or her, but overall, humans like to be seen, especially when they are giving a talk, and therefore are insecure about the effect they might be having on an audience. Reaching out as a stranger before a talk may be indicated if you have something to offer, otherwise I'd recommend against it. Doing it afterwards is absolutely recommended: if you have a LinkedIn profile, connect with the speaker, identify yourself as an audience member and say something nice or useful about the talk. Body language: this can really backfire unless you know what you're doing - actors learn this stuff, but most of us don't.

Complete the function definition

"The function `round(x,digits=0)` takes a single numeric argument `x` and returns a numeric vector containing the smallest integers not less than the corresponding elements of `x`."

E.g. `round(2.3412)` results in 2.

Complete the code `???` in the code block below to return the output shown at the end for the two function calls.

```
y <- 2.3412

new_round <- function(p, ??? ) {
  round(p, digits)
}

c(new_round(y), new_round(y, 3))
```

```
[1] 2.300 2.341
```

TRUE:

- `digits = 1`

FALSE:

- `digits`
- `1`
- `TRUE`

Feedback: the second argument is needed to set the number of decimal places `digits`. The function is called twice inside an unnamed vector. The first call, `new_round(y=2.3412)`, uses the default `digits=1`, the second call, `new_round(y=2.3412,3)` sets `digits=3`.

Which function is used to look up documentation for a function, e.g. `list()`?

TRUE:

- `help(list)`

FALSE:

- `help(list())`
- `search()`
- `class()`

Which function is used to give a list of all packages used in the current R session?

Feedback: To test this, run `search()`, then load a library that you have not used but that you have installed, e.g. `ggplot2`, and rerun `search()`. You will now see `package::ggplot2` in the list.

Which of these four vectors is of the type `logical` (Boolean)?

```
1: c(True, False, False)
2: c(TRUE, FALSE, FALSE)
3: c(TRUE, False, False)
4: [T, F, F]
```

TRUE:

- 2

FALSE:

- 4
- 1 and 2
- 3

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