

STA2023 Using R

HW questions in R. Example.

Use this procedure when the given dataset consists or a relatively large number of values. It is always possible to type in the data into R as a vector:

```
> x<-c(8,6,9,5,3,4,8,8,5,4,10,6,5,5,8,9,3,5,3,7,3,6,1,3,6,6)
```

But it is tedious and time consuming. Use Excel instead:

3.2.20Question Help

In a study of speed dating, female subjects were asked to rate the attractiveness of their male dates, and a sample of the results is listed below (1 = not attractive; 10 = extremely attractive). Find the range, variance, and standard deviation for the given sample data. Can the results be used to describe the variation among attractiveness ratings for the population of adult males?

8	6	9	5	3	4	8	8	5	4	10	6	5
5	8	9	3	5	3	7	3	6	1	3	6	6

[1. Click here](#)

The range of the sample data is .
(Round to one decimal place as needed.)

The standard deviation of the sample data is .
(Round to one decimal place as needed.)

The variance of the sample data is .
(Round to one decimal place as needed.)

Can the results be used to describe the variation among attractiveness ratings for the population of adult males?

- A. The results can be used to describe the population because the sample is random.
- B. Since it is likely that the male subjects volunteered to participate in speed dating, they may not be representative of all adult males. Therefore, the results cannot be used to describe the population.
- C. The results cannot be used to describe the population because a smaller sample would be needed.
- D. It is unlikely that a random sample of adult males can be representative of all adult males. Therefore, the results cannot be used to describe the population.

[2. Select excel](#)

The excel file downloads; open it and insert a letter, the variable name, on the top cell.

1	x
2	8
3	6
4	9
5	5
6	3
7	4
8	8

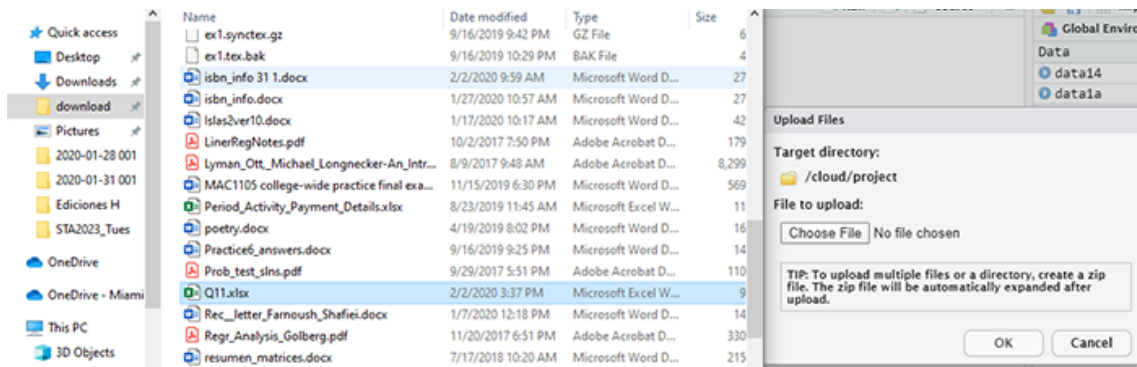
On the left lower panel of RStudio, Click on Files, then Upload:

FilesPlotsPackagesHelpViewer

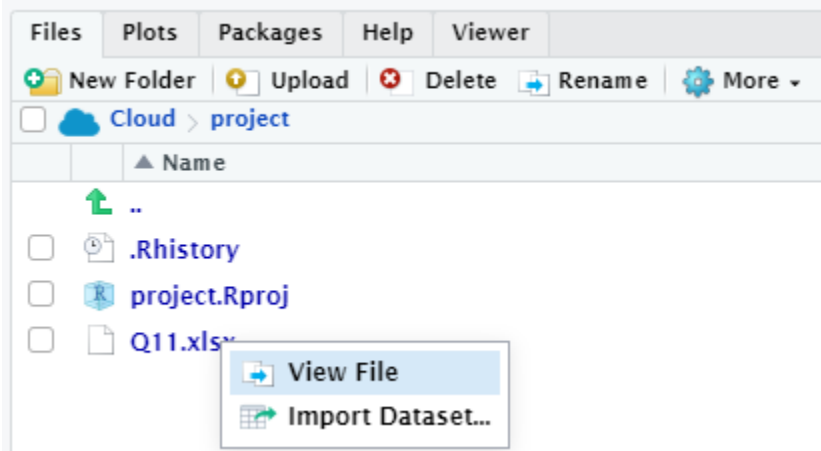
New Folder Upload Delete Rename More

Cloud > project

	Name
	..
<input type="checkbox"/>	.Rhistory
<input type="checkbox"/>	project.Rproj



Locate the excel file -by default the file's name is a date, in this case it was renamed as Q11. Choose file, click OK.



Once the file is uploaded, click on it and select Import Dataset. Type in the code needed to find range, standard deviation and variance:

```
> library(readxl)
> Q11 <- read_excel("Q11.xlsx")
> View(Q11)
> with(Q11, range(x))
[1] 1 10
> # range is 10- = 9
> with(Q11, sd(x))
[1] 2.2817
> # standard deviation is 2.2817. Remember, the # sign indicates that this is a comment.
> with(Q11, var(x))
[1] 5.206154
> # variance = 5.2 to one decimal place.
> |
```

Instead of using the function with, we may write the function of interest, say range, and inside the parenthesis the file name\$variable name, as follows. It is less elegant but it is very simple:

```
> # another procedure in R:
> range(Q11$x)
[1] 1 10
> sd(Q11$x)
[1] 2.2817
> var(Q11$x)
[1] 5.206154
> |
```