In-class Exercise 10 Results for Simran Mander

Score for this attempt: **8.27** out of 10
Submitted Nov 8 at 11:50pm
This attempt took 1,941 minutes.

Question 1

1 / 1 pts

The iris data set is a built-in data set in R. Some information can be found here (https://en.wikipedia.org/wiki/Iris_flower_data_set). You can type `head(iris)` on R console to take a look at the first few rows of this data frame. Each observation in the data set reports dimensions of a flower and its species.

Questions 1-5 will be based on this data set. You can access to any column of the iris data set by using `$` sign (e.g., `iris$Species` allows you to access to the species column of the iris data set)

The data set has 150 rows (i.e., observations) and 5 columns (i.e., variables).

Note: I am **not** asking *only* the portion of the dataset you see with `head(iris)`. I am asking the entire dataset.

Answer 1:

Correct!

150

Answer 2:

Correct!

5

You can use View(iris) to visually inspect the iris data set. But, you could also create a new data frame (if you wish) by

my_iris <- iris

Then, you can see the dimensions on the Environment pane.

Question 2

1 / 1 pts

Answer the following questions by rounding the value obtained to its first decimal place (enter the value not the R code):

i) The maximum value of `Sepal.Length`: 7.9

ii) The minimum value of `Sepal.Width`: 2

iii) The average value of `Petal.Length`: 3.8

iv) The standard deviation of `Petal.Width`: 0.8

Note: You can use `round(x ,1)` to round `x` to its first decimal place.

Answer 1:

Correct!

7.9

Answer 2:

Correct!

2

orrect Answer

2.0

Answer 3:

Correct!

3.8

Answer 4:

Correct!

0.8

```
> round(max(iris$Sepal.Length),1)
[1] 7.9
> round(min(iris$Sepal.Width),1)
[1] 2
> round(mean(iris$Petal.Length),1)
[1] 3.8
> round(sd(iris$Petal.Width),1)
[1] 0.8
```

Question 3

1 / 1 pts

You would like to know what species has a petal width of 1.8 and a petal length of 5.

You then decide to run:

`iris$Species[` which `(iris$Petal.Width` == `1.8` & `iris$Petal.Length==5)]`

Please fill in each blank with either a function name or a logical operator (i.e., ==, >, <, !, &, |, etc.).

Answer 1:

Correct!

==

Answer 2:

Correct!

&

```
iris$Species[which(iris$Petal.Width==1.7&iris$Petal.Length==5)]
```

Question 4

0.5 / 1 pts

You would like to know the number of flowers (observations) whose petal length is less than or equal to 4.5.

Then you can run:

length `(iris$Petal.Length` <= `4.5)`

Please complete the formula by filling in each blank with a function name or logical operator.

Answer 1:

You Answered

length

orrect Answer

sum

Answer 2:

Correct!

<=

Question 5

1.6 / 2 pts

You would like to create a new column that is the ratio of petal length to petal width.

Thus, you run:

```
iris$ratio <- iris$Petal.Length [/] iris$Petal.Width
```

After the creation of the `ratio` variable (i.e., column), you would like to know the average value of ratio values **for** the versicolor species (note: versicolor is one of the three species of flowers included in this data set).

Then you would run:

```
[mean] ( [iris$ratio] [ [which] (iris$Species == [versicolor] )])
```

Please fill in each blank with a function name, logical operator, or a value.

Answer 1:

Correct!

/

Answer 2:

Correct!

mean

Answer 3:

Correct!

iris$ratio

Answer 4:

You Answered

versicolor

Correct Answer

"versicolor"

Question 6

1 / 1 pts

You have three vectors already created in your environment -- namely v1, v2, v3 -- that contain **numeric values**.

Suppose v1 is a vector with 4 elements, v2 and v3 have 2 elements.

Which of the following code produces **a data frame** without error? There is at least one correct option. Please select **all** of the correct ones. PLEASE TRY THESE WITH YOUR OWN VECTORS satisfying the length requirements specified above.

- [ ] df3 <- c(v1,v2)
- [ ] df3 <- c(v2, v3)
- [ ] df3 <- c(v1, v2, v3)
- [ ] df3 <- data_frame(v1, v2, v3)
- [x] df3 <- data_frame(v2, v4 = c(TRUE,FALSE)) — Correct!
- [x] df3 <- data_frame(v1, v5 = c(v2,v3)) — Correct!
- [ ] df3 <- data_frame(v1, v6 = v2 + v3)
- [x] df3 <- data_frame(v2, v7 = v2-v3) — Correct!

Question 7

0.5 / 1 pts

Supposed you create a new data frame called df by run the following code:

```
df <- data_frame(name = c("Anna", "Jack", "Bob",
"Howard"), age = c(20, 30, 40, 50))
```

i) First, since you would like to obtain Bob's age using square brackets, you run:

`df[` 2 `,` 3 `]`

Please fill in each blank above with a value.

ii) Then, you would like to create an additional variable named `nationality` in the data frame to report each person's nationality. Then, you run:

```
df$nationality <- c
("Canadian","American","British","Australian")
```

Please fill in each blank above with a function name or an *appropriate* column (i.e., vector) name.

Answer 1:

You Answered — 3

orrect Answer — 2

orrect Answer — 2

orrect Answer — 2

Answer 2:

Correct! — df$nationality

Answer 3:

Correct! — c

Question 8

1.67 / 2 pts

Suppose you started a fresh R session.

You run the following code to create a data frame:

```
mydf <- data_frame(x = c(1,2,3,NA,5), y=c(1,4,9,NA,25))
```

View the dataframe before completing the following questions.

i) How would you calculate the variance of the `x` column by only using non-NA values? Please complete the formula:

sd (mydf$x , na.rm = TRUE)

ii) You would like to count the number of `NA` values in column `x`. Then you run:

sum
(is.na
(mydf$x))

iii) Now, please create a new column called `z`, where the value of `z` for an observation is the square root of `y` value of the observation. That is, `z` is equal to `sqrt(y)`.

How many `TRUE` values will there be when you execute `mydf$x == mydf$z` in R console?

4

Answer 1:

You Answered — sd

orrect Answer — var

Answer 2:

Correct! — mydf$x

Answer 3:

Correct! — na.rm

Answer 4:

Correct! — sum

Answer 5:

Correct!

is.na

Answer 6:

Correct!

4

Quiz Score: **8.27** out of 10