

R code for Data Science for Beginners

Day 1: Individual Exercise

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PUBLISHED

September 9, 2024

Task 1. Modify the author name above to your name

Task 2. Perform the following calculations by writing R commands

```
# 2-1: Multiply 4 by 30 plus 6, and then raise the answer to the power of 0.5  
(4 * (30 + 6)) ^ 0.5 # a sample answer is here
```

```
[1] 12
```

```
(4 * (30 + 6)) ^ 0.5 # 12
```

```
# WRITE YOUR ANSWER HERE, in R code chunks
```

2-2: Multiply 4 by 30, then add 6 and then raise the answer to the power of 0.5

```
WRITE YOUR ANSWER HERE #(4 * 30 + 6) ^ 0.5 = 11.22497
```

Note that 2-1 and 2-2 should give you DIFFERENT answers, because these are different operations.

Task 3. Working with objects

3-1: Create an object called "X1" which is the number 73

```
WRITE YOUR ANSWER (code) HERE X1 = 73
```

3-2: Create another object called "X2" which is the answer to the sum 99 + 38

```
WRITE YOUR ANSWER (code) HERE X2 = (99+38)
```

3-3: Multiply X1 and X2 together and store the answer as another object called "X3"

```
WRITE YOUR ANSWER (code) HERE X3 = (X1*X2)
```

3-4: Subtract 1 from X3, and then raise the answer to the power of 0.25

WRITE YOUR ANSWER (code) HERE $(X3-1)^{0.25}$

Note: the answer should be 10.

Task 4. Calculation using objects

Redo the calculation in 2-1 (Multiply 4 by 30 plus 6, and then raise the answer to the power of 0.5), but this time do so by creating objects. Take the following steps:

4-1: Create an object called part.1 that is equal to "30 plus 6"

WRITE YOUR ANSWER (code) HERE `part.1 = 30 + 6`

4-2: Create an object called part.2 that is equal to 4 times part.1

WRITE YOUR ANSWER (code) HERE `part.2 = 4 * part.1`

4-3: Raise part.2 to the power of 0.5

WRITE YOUR ANSWER (code) HERE `part.2 ^ 0.5`

The numerical answer you get here should be the same as your answer for 2.1

Task 5. Detecting R data types

5-1 Create a character vector and show that it is character. It'd be nice if you can do it in one line of code

WRITE YOUR ANSWER (code) HERE `typeof(c("aa", "bb"))`

5-2 Create a numeric vector and coerce it to a factor vector. It'd be nice if you can do it in one line of code

WRITE YOUR ANSWER (code) HERE `object = c(1)` > `object = as.factor(object)` Maybe also: `object1 = as.factor(c(1,2,3))`

Task 6. Testing NA

6-1 Create a numeric vector with NA

WRITE YOUR ANSWER (code) HERE `c(1,2,3,NA)`

6-2 Show me where the NA is located in the vector (using the which() function)

WRITE YOUR ANSWER (code) HERE `is.na(c(1,2,3,NA))`

6-1 Create a numeric vector with NaN

WRITE YOUR ANSWER (code) HERE `c(3, (0/0))`

6-2 Show me where the NaN is located in the vector (using the which() function)

WRITE YOUR ANSWER (code) HERE `which(is.nan(c(3, (0/0))))`

Finally, execute the entire file. Make sure that you don't get any error messages, such as **Error: unexpected symbol in ...** shown in Red. If you receive an error message, it's probably because you forgot to comment out some lines. Comment them out so you won't get any error message.