

Quiz #2

1. Create a new data frame by passing vectors of the same length to the `data.frame()` function. Your code should produce the following output:

a	b	c
<dbl>	<fctr>	<lgl>
1	R	TRUE
2	Is	FALSE
3	Fun!	TRUE
4	Let's	TRUE
5	Learn	FALSE

2. Assign column names since the above columns took the names of the variables used to create the data frame. Your code should produce the following output:

numeric	character	logical
<dbl>	<fctr>	<lgl>
1	R	TRUE
2	Is	FALSE
3	Fun!	TRUE
4	Let's	TRUE
5	Learn	FALSE

3. Check and reassign column names using the `colnames()` function. Your code should produce the following output:
[1] "numeric" "character" "logical"
[1] "c1" "c2" "c3"
4. Create row names when creating a data frame by including the `row.names` argument and setting it equal to a character vector to be used for row names. Your code should produce the following output:

numeric	character	logical
----------------	------------------	----------------

	<dbl>	<fctr>	<lgl>
r1	1	R	TRUE
r2	2	Is	FALSE
r3	3	Fun!	TRUE
r4	4	Let's	TRUE
r5	5	Learn	FALSE

5. Check and alter row names after creating your data frame using the `rownames()` function. Your code should produce the following output:

```
[1] "r1" "r2" "r3" "r4" "r5"
[1] "1" "2" "3" "4" "5"
```

6. Load the iris dataset as tibble. Your code should produce the following output:

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
<dbl>	<dbl>	<dbl>	<dbl>	<fctr>
5.1	3.5	1.4	0.2	setosa
4.9	3.0	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5.0	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa
4.6	3.4	1.4	0.3	setosa
5.0	3.4	1.5	0.2	setosa
4.4	2.9	1.4	0.2	setosa
4.9	3.1	1.5	0.1	setosa

7. Check the structure of your tibble dataframe. Your code should produce the following output:

```
'data.frame': 150 obs. of 5 variables:
 $ Sepal.Length: num 5.1 4.9 4.7 4.6 5 5.4 4.6 5 4.4 4.9 ...
 $ Sepal.Width : num 3.5 3 3.2 3.1 3.6 3.9 3.4 3.4 2.9 3.1 ...
 $ Petal.Length: num 1.4 1.4 1.3 1.5 1.4 1.7 1.4 1.5 1.4 1.5 ...
 $ Petal.Width : num 0.2 0.2 0.2 0.2 0.2 0.4 0.3 0.2 0.2 0.1 ...
 $ Species : Factor w/ 3 levels "setosa","versicolor",...: 1 1 1 1 1 1 1 1 1 1 ...
```

8. Generate summary statistics for each variable in the tibble data frame. Your code should produce the following output:

```
Sepal.Length Sepal.Width Petal.Length Petal.Width Species
Min. :4.300 Min. :2.000 Min. :1.000 Min. :0.100 setosa :50
1st Qu.:5.100 1st Qu.:2.800 1st Qu.:1.600 1st Qu.:0.300 versicolor:50
Median :5.800 Median :3.000 Median :4.350 Median :1.300 virginica :50
Mean :5.843 Mean :3.057 Mean :3.758 Mean :1.199
3rd Qu.:6.400 3rd Qu.:3.300 3rd Qu.:5.100 3rd Qu.:1.800
Max. :7.900 Max. :4.400 Max. :6.900 Max. :2.500
```

9. If a data frame is large, it is not good practice to try to print the entire frame to the screen. Look at the first 5 rows of the data frame. Your code should produce the following output:

	Sepal.Length <dbl>	Sepal.Width <dbl>	Petal.Length <dbl>	Petal.Width <dbl>	Species <fctr>
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa

10. Look at the first 5 rows of the data frame. Your code should produce the following output:

	Sepal.Length h <dbl>	Sepal.Width <dbl>	Petal.Length <dbl>	Petal.Width <dbl>	Species <fctr>
146	6.7	3.0	5.2	2.3	virginica
147	6.3	2.5	5.0	1.9	virginica
148	6.5	3.0	5.2	2.0	virginica
149	6.2	3.4	5.4	2.3	virginica
150	5.9	3.0	5.1	1.8	virginica

11. Get the dimensions of the data frame. Write 2 ways that can be used to produce the following output:

```
[1] 150 5
```

12. Apply an indexing operation to your tibble dataframe. Write 2 ways that can be used to produce each of the following output:

Petal.Width	
	<dbl>
1	0.2
2	0.2
3	0.2
4	0.2
5	0.2
6	0.4

[1] 0.2 0.2 0.2 0.2 0.2 0.4

13. Get the value at row 2 column 4. Get the second row. Get the 3rd column
 14. Write the following data in an R data frame, then to a CSV file using the write.csv() function. You can use the read.csv() function to read CSV files and produce the following output:

X	std_ID	std_name	data_vis	research	statistics
<int>	<int>	<fctr>	<int>	<int>	<int>
1	1	Liban	90	80	70
2	2	Mohamud	90	80	70
3	3	Adnan	90	80	70
4	4	Liban	90	80	70
5	5	Mohamud	90	80	70
6	6	Adnan	90	80	70

6 rows