×

Week 1 Quiz



20/20 questions correct

Quiz passed!

Continue Course (/learn/r-programming/lecture/QLz9h/introduction-to-swirl)

Back to Week 1 (/learn/r-programming/home/week/1)



1

R was developed by statisticians working at

Insightful

The University of Auckland

Well done!

The R language was developed by Ross Ihaka and Robert Gentleman who were statisticians at the University of Auckland in New Zealand.

StatSci

Johns Hopkins University

1 of 18



The definition of free software consists of four freedoms (freedoms 0 through 3). Which of the following is NOT one of the freedoms that are part of the definition? Select all that apply.

The freedom to prevent users from using the software for undesirable purposes.

Well done!

This is not part of the free software definition. Freedom 0 requires that the users of free software be free to use the software for any purpose.

The freedom to sell the software for any price.

Well done!

This is not part of the free software definition. The free software definition does not mention anything about selling software (although it does not disallow it).

The freedom to study how the program works, and adapt it to your needs.

Well done!

This is freedom 1.

The freedom to improve the program, and release your improvements to the public, so that the whole community benefits.

Well done!

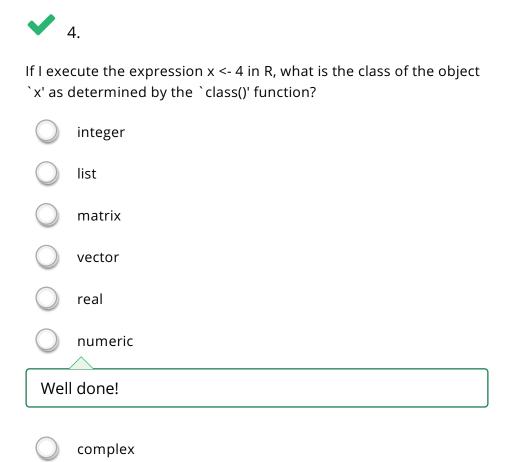
This is freedom 3.

The freedom to run the program, for any purpose.

Well done!

✓ 3.
In R the following are all atomic data types EXCEPT: (Select all that apply)
data frame
Well done! 'data frame' is not an atomic data type in R.
character
Well done!
integer
Well done!
matrix
Well done! 'matrix' is not an atomic data type in R.
logical
Well done!
numeric
Well done!
list
Well done!

3 of 18



5.					
is the class of the object defined by $x <- c(4, TRUE)$?					
character					
logical					
matrix					
numeric					
ell done!					
The numeric class is the "lowest common denominator" here and so all elements will be coerced into that class.					
list					
integer					



If I have two vectors x <- c(1,3,5) and y <- c(3,2,10), what is produced by the expression rbind(x, y)?

- a 2 by 2 matrix
- a vector of length 2
- a matrix with two rows and three columns

Well done!

The 'rbind' function treats vectors as if they were rows of a matrix. It then takes those vectors and binds them together row-wise to create a matrix.

- a 3 by 2 matrix
- a vector of length 3
- a 3 by 3 matrix

	7.
A key	property of vectors in R is that
	elements of a vector can be of different classes
	elements of a vector can only be character or numeric
	elements of a vector all must be of the same class
We	ell done!
	a vector cannot have have attributes like dimensions
	the length of a vector must be less than 32,768

✓ 8.
Suppose I have a list defined as $x <-$ list(2, "a", "b", TRUE). What does $x[[1]]$ give me? Select all that apply.
a list containing the number 2.
Well done!
a numeric vector containing the element 2.
Well done!
a character vector containing the element "2".
Well done!
a numeric vector of length 1.
Well done!
a list containing the letter "a".

Well done!



Suppose I have a vector x <- 1:4 and a vector y <- 2. What is produced by the expression x + y?

- a numeric vector with elements 1, 2, 3, 6.
- a numeric vector with elements 3, 2, 3, 6.
- an integer vector with elements 3, 2, 3, 6.
- a numeric vector with elements 3, 2, 3, 4.
- a numeric vector with elements 3, 4, 5, 6.

Well done!

an integer vector with elements 3, 2, 3, 4.



10.

Suppose I have a vector x <- c(3, 5, 1, 10, 12, 6) and I want to set all elements of this vector that are less than 6 to be equal to zero. What R code achieves this? Select all that apply.



Well done!

You can create a logical vector with the expression x < 6 and then use the [operator to subset the original vector x.



$$x[x != 6] <- 0$$

Well done!

This sets all the elements not equal 6 to be zero.



$$x[x == 0] < 6$$

Well done!

This takes the elements of x that are equal to 0 and tests whether they are less than 6 or not.



$$x[x == 0] <- 6$$

Well done!

This sets all the elements that are equal to 0 to be 6.

Well done!

You can create a logical vector with the expression x %in% 1:5 and then use the [operator to subset the original vector x.

$$x[x > 0] < -6$$



Use the Week 1 Quiz Data Set (https://d396qusza40orc.cloudfront.net/rprog/data/quiz1_data.zip) to answer questions 11-20.

In the dataset provided for this Quiz, what are the column names of the dataset?

- 1, 2, 3, 4, 5, 6
- Ozone, Solar.R, Wind
- Month, Day, Temp, Wind
- Ozone, Solar.R, Wind, Temp, Month, Day

Well done!

You can get the column names of a data frame with the `names()' function.



Extract the first 2 rows of the data frame and print them to the console. What does the output look like?



	0zone	Solar.R	Wind	Temp	Month	Day	
1	7	NA	6.9	74	5	11	
2	35	274	10.3	82	7	17	



	0zone	Solar.R	Wind	Temp	Month	Day
1	41	190	7.4	67	5	1
2	36	118	8.0	72	5	2

Well done!

You can extract the first two rows using the [operator and an integer sequence to index the rows.



	0zone	Solar.R	Wind	Temp	Month	Day
1	9	24	10.9	71	9	14
2	18	131	8.0	76	9	29



	Ozone	Solar.R	Wind	Temp	Month	Day
1	18	224	13.8	67	9	17
2	NA	258	9.7	81	7	22



How many observations (i.e. rows) are in this data frame?

160

129

153

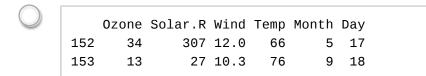
Well done!

You can use the `nrows()' function to compute the number of rows in a data frame.

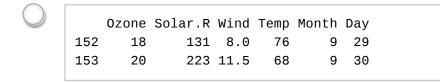
45



Extract the last 2 rows of the data frame and print them to the console. What does the output look like?



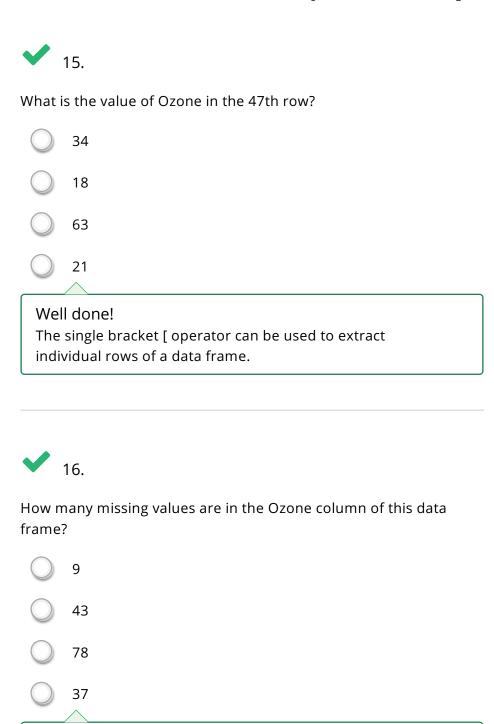
Ozone Solar.R Wind Temp Month Day 152 31 244 10.9 78 19 153 29 127 9.7 82 6 7



Well done!

The `tail()' function is an easy way to extract the last few elements of an R object.

Ozone Solar.R Wind Temp Month Day 44 9.7 152 11 5 20 62 153 108 223 8.0 85 7 25



Well done!

The `is.na' function can be used to test for missing values.



What is the mean of the Ozone column in this dataset? Exclude missing values (coded as NA) from this calculation.



42.1

Well done!

The `mean' function can be used to calculate the mean.



18.0



53.2



31.5



Extract the subset of rows of the data frame where Ozone values are above 31 and Temp values are above 90. What is the mean of Solar.R in this subset?



334.0



205.0



185.9



212.8

Well done!

You need to construct a logical vector in R to match the question's requirements. Then use that logical vector to subset the data frame.

