



Search or type a comment

This repository ▾

?

ExploreGistBlogHelp

 hpcosta + ▾  


1

Watch ▾

★ Star0

Fork8

public

 edj-boston/coursea-r-programming

<> Code

🔔 Issues0

🔗 Pull Requests0

📖 Wiki

📡 Pulse

📊 Graphs

🌐 Network

HTTPS clone URL

https://github.com/edj-boston/coursea-r-programming



SSH clone URL

git@github.com:edj-boston/coursea-r-programming



Subversion checkout URL

https://github.com/edj-boston/coursea-r-programming



You can clone with HTTPS, SSH, or Subversion. ?

 Clone in Desktop

 Download ZIP

🔗 branch: master ▾

coursea-r-programming / week-01 / quiz.md



 edj-boston on Apr 14 Week 1 quiz

1 contributor

📄 file 314 lines (215 sloc) 6.668 kb

 Open

Edit

Raw

Blame

History

Delete

Quiz

Attempts	Score
2/2	20/20

Question 1

file:///Users/hpcosta/Coursera/The_DataScience_R/week1/old/course....md%20at%20master%20-%20edj-boston%20coursea-r-programming.html

Page 1 of 8

R was developed by statisticians working at...

Answer

The University of Auckland

Explanation

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

Question 2

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?

Answer

The freedom to sell the software for any price.

Explanation

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).

Question 3

In R the following are all atomic data types EXCEPT

Answer

matrix

Explanation

'matrix' is not an atomic data type in R.

Question 4

If I execute the expression `x <- 4` in R, what is the class of the object 'x' as determined by the `class()` function?

Answer

numeric

Explanation

```
> x <- 4
> class(x)
[1] "numeric"
```

Question 5

What is the class of the object defined by `x <- c(4, TRUE)`?

Answer

numeric

Explanation

The numeric class is the "lowest common denominator" here and so all elements will be coerced into that class.

R does automatic coercion of vectors so that all elements of the vector are the same data class.

```
> x <- c(4, TRUE)
> class(x)
[1] "numeric"
```

Question 6

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

Answer

a 3 by 2 numeric matrix

Explanation

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

```
> x <- c(1,3, 5)
> y <- c(3, 2, 10)
> cbind(x, y)
      x y
[1,] 1  3
[2,] 3  2
[3,] 5 10
```

Question 7

A key property of vectors in R is that

Answer

elements of a vector all must be of the same class

Question 8

Suppose I have a list defined as `x <- list(2, "a", "b", TRUE)`. What does `x[[1]]` give me?

Answer

a numeric vector containing the element 2

Explanation

```
> x <- list(2, "a", "b", TRUE)
> x[[1]]
[1] 2
> class(x[[1]])
[1] "numeric"
```

Question 9

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

Answer

a numeric vector with elements 3, 4, 5, 6.

Explanation

```
> x <- 1:4
> y <- 2
> x + y
[1] 3 4 5 6
> class(x + y)
[1] "numeric"
```

Question 10

Suppose I have a vector `x <- c(17, 14, 4, 5, 13, 12, 10)` and I want to set all elements of this vector that are greater than 10 to be equal to 4. What R code achieves this?

Answer

```
x[x >= 11] <- 4
```

Explanation

You can create a logical vector with the expression `x >= 11` and then use the `[]` operator to subset the original vector `x`.

```
> x <- c(17, 14, 4, 5, 13, 12, 10)
> x[x >= 11] <- 4
> x
[1] 4 4 4 5 4 4 10
```

Question 11

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

Answer

Ozone, Solar.R, Wind, Temp, Month, Day

Explanation

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

```
> hw1 = read.csv('hw1_data.csv')
> names(hw1)
[1] "Ozone"    "Solar.R"  "Wind"     "Temp"     "Month"    "Day"
```

Question 12

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

Answer

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

Explantion

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

```
> hw1 = read.csv('hw1_data.csv')
> hw1[c(1,2),]
  Ozone Solar.R Wind Temp Month Day
1    41    190  7.4   67     5    1
2    36    118  8.0   72     5    2
```

Question 13

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

Answer

153

Explanation

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

```
> hw1 = read.csv('hw1_data.csv')
> nrow(hw1)
[1] 153
```

Question 14

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

Answer

```
Ozone Solar.R Wind Temp Month Day
152    18     131  8.0   76     9   29
153    20     223 11.5   68     9   30
```

Explanation

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

```
> hw1 = read.csv('hw1_data.csv')
> tail(hw1,2)
      Ozone Solar.R Wind Temp Month Day
152     18     131  8.0   76     9   29
153     20     223 11.5   68     9   30
```

Question 15

What is the value of Ozone in the 47th row?

Answer

21

Explanation

The single bracket `[]` operator can be used to extract individual rows of a data frame.

```
> hw1 = read.csv('hw1_data.csv')
> hw1[15,]
      Ozone Solar.R Wind Temp Month Day
15      18      65 13.2   58     5   15
```

Question 16

How many missing values are in the Ozone column of this data frame?

Answer

37

Explanation

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

```
> hw1 = read.csv('hw1_data.csv')
> sub = subset(hw1, is.na(Ozone))
> nrow(sub)
[1] 37
```

Question 17

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

Answer

42.1

Explanation

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

```
> hw1 = read.csv('hw1_data.csv')
> sub = subset(hw1, !is.na(Ozone), select = Ozone)
> apply(sub, 2, mean)
      Ozone 
42.12931
```

Question 18

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?

Answer

212.8

Explanation

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.

```
> hw1 = read.csv('hw1_data.csv')
> sub = subset(hw1, Ozone > 31 & Temp > 90, select = Solar.R)
> apply(sub, 2, mean)
      Solar.R 
      212.8
```

Question 19

What is the mean of "Temp" when "Month" is equal to 6?

Answer

79.1

Explanation

```
> hw1 = read.csv('hw1_data.csv')
> sub = subset(hw1, Month == 6, select = Temp)
> apply(sub, 2, mean)
      Temp 
      79.1
```

Question 20

What was the maximum ozone value in the month of May (i.e. Month = 5)?

Answer

115

Explantion

```
> hw1 = read.csv('hw1_data.csv')
> sub = subset(hw1, Month == 5 & !is.na(Ozone), select = Ozone)
> apply(sub, 2, max)
Ozone
115
```

© 2014 GitHub, Inc. [Terms](#) [Privacy](#) [Security](#) [Contact](#)



[Status](#) [API](#) [Training](#) [Shop](#) [Blog](#) [About](#)



⚠ Something went wrong with that request. Please try again.

