

*Do it at
your risk answer
may be wrong..*



Assignment 1

Q.1 Which programming language is a dialect of S.

A. R is a dialect of S. It has all the features of S.

Q.2 Vector is Collection of _____ element.

A. Homogeneous

Q.3 In 1991, R was created by Ross Ihaka & Robert Gentleman in the Department of Statistics at the University of Auckland.

A. Auckland

Q.4 The Primary R System is available from the CRAN.

A. CRAN

Q.5 What will be the output of the following R code?

A. Missing data

Q.6 A Single Element of a character vector is referred as

A. Character String

Q.7 R has how many atomic classes of which.

A. 5

Q.8. R has many functions regtly.

A Station , Probability , Distribution.

Q.9. What will be the output of the following R Code?

b 1

Q.10 Files Contay R Script Ends with Extension

L .R

Q.11

A Matrix

Q.12. What is the Simplest way of Creating the Vector.

b. c function

Q.13. A _____ is an R-object which Contains may different type of Element inside it.

A Lists.

Q.14. R introduced in -

A 1993

Q.15 Is a <10 , a=10 Some in R ?

Yes

Variables & Values

R uses — bracket to define the scope in the code.

E 3

v <- c(2, 5, 5, 6)
10.0, 8.5, 10
t <- c(8, 3, 4)

which of these are not a part of matrix (1)?

gl
x <- c("a", "b", "c", "d", "c", "a")
~~x[1]~~

Part - B.

What are the different data types in R.

R has 6 data types

- character
- numeric
- integer
- logical
- complex
- raw

Q.2. what are the different data structures in R?

- Atomic vector
- Matrix
- list
- Data frame

Q.3

Different Arrays and matrices

A

Arrays

Matrices

- | Arrays | Matrices |
|---|--|
| 1. Array can contain greater than or equals to 1 dimension. | 2. Matrices contain 2 dimensions in a table like structure. |
| 2. Array is a homogeneous data structure. | 2. Matrix is a homogeneous data structure. |
| 3. It is a singular vector arranged into the specified dimension. | 3. It consists of multiple equal length vectors stacked together in a table. |
| 4. array() can be used to create matrix by specifying the | matrix() can be used to create at most 2-dimensional arrays. |

Q.4 Different list and matrix?

A list can hold items of different types and the list size can be increased on the fly. List content can be accessed either by index or by name.

Matrix is a two dim array (vector) (fixed size, all cell, type same)

Q.5 What is the use of cbind.

cbind() function in R language is used to combine specified vector, matrix or data frame by columns.

x <- 2:7

y <- c(2,5)

cbind(x,y)

Part - C.

Q.1 Create a Data frame DD in Sorted Order.

```
dataframe <- data.frame()
x = c("apple", "orange", "banana", "Strawberry")
y = c("a", "d", "b", "c")
z = c(4:1)
```

```
data frame [order (dataframe $z)]
```

Q.2 what is the use of `gl()` along with `factor()`
Example.

Ans: `gl()` General factor levels.

Usage: `gl(n, k, length = n * k, labels = seq_len(n))`

Value: The result has levels from 1 to n with each value replicated in groups of length k out to a total length of length n.

Exple: `gl(2, 8, labels = c("Control", "Treat"))`
`gl(2, 1, 20)`
`gl(2, 2, 20)`

Q.3. Explain various data types in R-Programming.

Numeric Set of all real numbers

Integer Set of all integer, 2

Logical True and False

Complex Set of Complex numbers

Character "a" ; "b" ; "c", ... ; "a", ... ; "1" ; "2" etc,

Q.4. Illustrate addition, multiplication & division b/w vectors.

Creating Vector

first vector $\leftarrow 1:5$ first vector

Second vector $\leftarrow 5:9$ Second vector
Second

Vector After Addition \leftarrow first vector + Second vector

Vector after Multiplication \leftarrow first vector * Second vector

Vector after Division \leftarrow first vector / Second vector

Vector after Addition

Vector after Multiplication

Vector after Division

Q5. Examples of multiplication & division operation b/w matrices & vector in R language.

Vector 1 $\leftarrow c(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12)$

Matrix 1 \leftarrow matrix (vector 1, nrow = 2, ncol = 6)

mult_vec $\leftarrow c(1, 2, 3, 4)$

div_vec $\leftarrow c(1, 2, 3, 4)$

print (matrix 1 * mult_vec)

print (matrix 1 / div_vec)

Q.6. Explain various features & advantage of R program along with example.

Advantage of R Programming.

1. Open Source
2. Exemplary Support for Data Wrangling
3. The array of package
4. Quality plotting & Graphing
5. Highly Compatible
6. Platform Independent
7. Eye - Catching Reports
8. Machine learning Operations
9. Statistics
10. Continuously Growing.

Part - D

1. Write a Step - by - step process of installing R Studio IDE.

A

Step 1:- Go to CRAN R project website.

Step 2:- Click on the Download R for windows link.

Step 3:- Click on the base sublinks or install R from the first time link.

Step 4:- Click Download R x.x.x for windows (x.x.x stand for the latest version of R e.g 3.6.1) and Save the Executable .exe file.

Step 5:- Run the .exe file and follow the installation instruction.

5.a Select the desired languages & then click Next.

5.b Read the license agreement and click Next.

5.c Select the Compart you wish to install.
Click next.

5.d Enter / browse the folder / Path you wish to install R into and then confirm by clicking Next.

5.e Select addition tasks like creating desktop Shortcut etc. & next click.

5.f wait for the installation process to complete.

5.g. click on finish to complete the installation.

O.Q. Write the command in R Console to Create a list
Containing a vector, a matrix & a list.

Also give names to the elements in the list & display
the list.

#

```
list_data <- list (c("Red", "Green", "Black"),
matrix (c(1, 3, 5, 7, 9, 11), nrow = 2),
list ("Python", "PHP", "JAVA"))
```

```
print ("list:")
print (list_data)
```

```
print (list_data)
```

```
names (list_data) <- ( ("color", "odd number"), "longs (3)")
```

```
print ("list with color names:")
```

```
print ('1st Elemt')
```

```
print (list_data[1])
```

```
print ('2nd Elemt:')
```

```
print (list_data[2])
```

Data structures are built using list & vector function
List with vector can be used to do ?