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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Data Science for Engineers (course)



Course
outline

How does
an NPTEL
online
course
work?

Setup Guide

Pre Course
Material

Week 0

Week 1

- Data science for engineers Course

Week 1: Assignment 1

Your last recorded submission was on **2021-07-22, 14:00 IST** Due date: **2021-08-11, 23:59 IST.**

- 1) Choose the variable name that is invalid in R. **1 point**
 - ☐ data.1 = 10
 - ☐ data1 = 10
 - ☒ 1data = 10
 - ☐ data_1 =10
- 2) The command to access help in R Studio is— **1 point**
 - ☐ ? topic
 - ☒ help(topic)
 - ☐ RSiteSearch('topic')
 - ☐ help.stand(topic)
- 3) In the R code given below, the value of "i" at which the loop breaks **1 point** is_____

philosophy
and
expectation
(unit?
unit=22&lesson=23)

● Introduction
to R (unit?
unit=22&lesson=24)

● Introduction
to R
(Continued)
(unit?
unit=22&lesson=25)

● Variables
and
datatypes
in R (unit?
unit=22&lesson=26)

● Data
frames
(unit?
unit=22&lesson=27)

● Recasting
and joining
of
dataframes
(unit?
unit=22&lesson=28)

● Arithmetic, Logical
and Matrix
operations
in R (unit?
unit=22&lesson=29)

● Advanced
programming
in R :
Functions
(unit?
unit=22&lesson=30)

● Advanced
Programming
in R :

```
n=100
sum=0
for(i in seq(1,n,3)){
  sum=sum+i
  print(c(i,sum))
  if(sum>15)
    break
}
```

- ☐ 2
- ☐ 9
- ☒ 10
- ☐ 8

4) The library that supports right _join () function in R is_____

1 point

- ☒ dplyr
- ☐ caret
- ☐ CRAN
- ☐ ggplot2

5) The value of sum and month when i = 9 is_____

1 point

```
n=5
sum=0
for(i in 1:11){
  sum=sum+(i+2)
  print(c(month.abb[i+1],sum))
}
```

- ☐ "May" "18"
- ☐ "Sep" "52"
- ☒ "Oct" "63"

Functions
(Continued)

(unit?
unit=22&lesson=31)

● Control
structures
(unit?
unit=22&lesson=32)

● Data
visualization
in R Basic
graphics
(unit?
unit=22&lesson=33)

● FAQ (unit?
unit=22&lesson=34)

● Quiz :
Week 1:
Practice
Assignment
1
(assessment?
name=120)

● Quiz :
Week 1:
Assignment
1
(assessment?
name=128)

☐ "Nov" "75"

6) Table 1 provides the scores of the students in three subjects. **1 point**

1) Create a data frame called `students_scores` out of Table 1. Which of the following options gives Table 2 as an output?

Table 1

Name	Mathematics	English	Science
Ram	85	80	79
Prabhu	70	79	96
Sita	90	73	95
Santosh	95	90	80
Lohith	80	93	87

Table 2

Name	Variable	Value
Ram	Mathematics	85
Prabhu	Mathematics	70
Sita	Mathematics	90
Santosh	Mathematics	95
Lohith	Mathematics	80
Ram	English	80
Prabhu	English	79
Sita	English	73
Santosh	English	90
Lohith	English	93
Ram	Science	79
Prabhu	Science	96
Sita	Science	95
Santosh	Science	80
Lohith	Science	87

- ☒ `melt(students_scores, id.vars = c("Name") , measure.vars =c("Mathematics", "English","Science"))`
- ☐ `melt(students_scores, id.vars = c("Name","Mathematics") , measure.vars =c("English","Science"))`
- ☐ `melt(students_scores, id.vars = c("Name") , measure.vars =c("Mathematics", "English"))`
- ☐ `dcast(students_scores, variable+Name ~ Science , value.var="value")`

Create a data frame with given vectors below.

rank = c(1,2,3)

competitor = c("Usain","Tyson","Yohan")

mark = c(9.58, 9.69, 9.65)

Store the data frame in the variable named – “**athletics**”.

7) The command to add a new row to the data frame “athletics” with **1 point** the following values passed to each vector?

rank= 4, competitor="Asafa", mark=9.72

- ☐ athletics=rbind(data.frame(rank= 4, competitor="Asafa", mark=9.72))
- ☐ athletics =rbind(data.frame(rank=4,competitor="Asafa",mark=9.72), athletic)
- ☒ athletics=rbind(athletics,data.frame(rank=4,competitor="Asafa",mark=9.72))
- ☐ None of the above

Answer question 8 based on the data frame created at the end of Q7.

8) The command to add a new column to the data frame “athletics” **1 point** with vector “**nationality**” taking values “JAM”, “USA”, “JAM”, “JAM” is:-

- ☐ athletics=cbind(dataframe(nationality = c(“JAM”, “USA”, “JAM”, “JAM”), athletics))
- ☒ athletics=cbind(athletics,data.frame(nationality = c(“JAM”, “USA”, “JAM”, “JAM”)))
- ☐ athletics=cbind(athletics.data.frame(nationality = c(“JAM”, “USA”, “JAM”, “JAM”)))
- ☐ athletics=cbind(data.frame(nationality = c(“JAM”, “USA”, “JAM”, “JAM”), athletics)

Answer question 9 based on the data frame created at the end of question 8

9) The correct way to extract all elements for which “**mark**” is less **1 point** than 9.69 using the “**subset**” command is _____

- ☒ subset(athletics, athletics\$mark <9.69)
- ☐ subset[athletics, athletics\$mark]
- ☐ subset(athletics \$mark > 9.69,athletics)
- ☐ subset(athletics.mark >9.69)

10) Which of the following defined functions will return the output as **1 point** 9.37?

☐

```
func_multi= function(a,b,c)
{
  result=(a*b)*0.5+(a*c)**0.5
  return(result)
}
func_multi(4,5,6)
```

☒

```
func_multi= function(a,b,c)
{
  result=(a*b)**0.5+(a*c)**0.5
  return(result)
}
func_multi(4,5,6)
```

☐

```
func_multi= function(a,b,c)
{
  result=(a*b)**0.5+(a*c)**0.5
  return(result)
}
func_multi(4,5)
```

☐

None of the above

You may submit any number of times before the due date. The final submission will be considered for grading.

Submit Answers