


CSE 3505
Foundation of Data Analytics
LAB-02

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Registration Number: **20BPS1022**

#1. Create vector 'student' to store the names of 5 students

```
R 4.1.2 · ~/   
> #1  
> student <- c("Preyash", "Disha", "Ayushi", "Pradhyuman", "Mugdha")  
> student  
[1] "Preyash"      "Disha"        "Ayushi"       "Pradhyuman"  "Mugdha"  
>  
>
```

#2. Use assign() function to create a vector 'Marks' to store the marks scored by these students.

```
> #2  
> assign("marks", c(98,99,97,96,94))  
> print(marks)  
[1] 98 99 97 96 94  
>
```

#3. Display the mark of student3.

```
>  
> #3  
> print("Marks of student 3 is:")  
[1] "Marks of student 3 is:"  
> marks[3]  
[1] 97  
>
```

#4. Combine the vectors 'student' and 'Marks' as details.

```
> #4
> details<-cbind(student, marks)
> details
  student      marks
[1,] "Preyash"    "98"
[2,] "Disha"      "99"
[3,] "Ayushi"     "97"
[4,] "Pradhyuman" "96"
[5,] "Mugdha"     "94"
>
```

#5. Find the length of combined vector 'details'.

```
> #5
> length(details)
[1] 10
>
```

#6. Find the minimum mark and print the student who scored it.

```
> #6
> minimum = min(marks)
> cat("The minimum marks is:", minimum)
The minimum marks is: 94> index1=which(marks==minimum)
> cat("The student who scored minimum mark is: ", student[index1])
The student who scored minimum mark is: Mugdha>
> #7
```

#7. Find the maximum mark and print the student who scored it.

```
> #7
> maximum = max(marks)
> cat("The maximum marks is:", maximum)
The maximum marks is: 99> index2=which(marks==maximum)
> cat("The student who scored maximum mark is: ", student[index2])
The student who scored maximum mark is: Disha>
> #8
```

#8. Find the total marks scored by all the students.

```
The student who scored maximum mark is: Disha>
> #8
> print("The total marks scored by the students are:")
[1] "The total marks scored by the students are:"
> sum(marks)
[1] 484
```

#9. Find the mean of the marks scored by all students.

```
> #9
> print("The mean score is:")
[1] "The mean score is:"
> mean(marks)
[1] 96.8
>
```

#10. Find the standard deviation of the marks scored by all students

```
> #10
> print("The standard deviation score is:")
[1] "The standard deviation score is:"
> sd(marks)
[1] 1.923538
```

#11. Arrange the marks in ascending order.

```
> #11
> asc = marks
> asc[order(asc)]
[1] 94 96 97 98 99
>
```

#12. Create a vector students by repeat the vector student thrice. Explore rep function for the same. Create the vector with and without rep.

```
> #12
> students = rep(student,3)
> students
[1] "Preyash" "Disha" "Ayushi" "Pradhyuman" "Mugdha" "Preyash" "Disha" "Ayushi" "Pradhyuman" "Mugdha"
[11] "Preyash" "Disha" "Ayushi" "Pradhyuman" "Mugdha"
>
```

#13. Create a vector marks by repeating each Mark twice.

```
> #13
> marks_rep = rep(marks, 2)
> marks_rep
[1] 98 99 97 96 94 98 99 97 96 94
>
```

#14. Create a sequence of 10 to 1. Add it to the vector Marks and display it.

```
> #14
> my_seq = seq(from=10, to =1, by =-1)
> my_seq
[1] 10 9 8 7 6 5 4 3 2 1
>
> marks_new <- c(marks + my_seq)
> marks_new
[1] 108 108 105 103 100 103 103 100 98 95
>
```

#15. Create a vector bool that contains logical values 'TRUE' or 'FALSE' depending on the condition marks>70.

```
> #15  
> condn <- marks>70  
> print(marks & condn)  
[1] TRUE TRUE TRUE TRUE TRUE
```