

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY

GUWAHATI



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Indian Institute of Information Technology Guwahati

Data Analytics Lab, M.Tech 3rd Semester  
*CS634 Lab report*

Assignment:2

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## 1. Create an array consisting of 20 real values

```
1 array <-c(1,2,2.5,3,3.5,4,4.5,6,6.3,6.7,7,7.2,7.6,7.9,8,8.1,8.3,8.8,9,9.5)
2 print(array)
```

Output:

```
> source("~/arrayValue.R")
[1] 1.0 2.0 2.5 3.0 3.5 4.0 4.5 6.0 6.3 6.7 7.0 7.2 7.6 7.9 8.0 8.1 8.3 8.8 9.0
[20] 9.5
> |
```

## 2. Find sum, count, mean, median, mode, and mid-range

```
1 array <-c(1,2,2.5,3,3.5,4,4.5,6,6.3,6.7,7,7.2,7.6,7.9,8,8.1,8.3,8.8,9,9.5)
2
3 cat("\n\nSum")
4 cat("\nTotal Sum : ",sum(array))
5
6 cat("\n\nCount")
7 cat("\nTotal count : ",length(array))
8
9 cat("\n\nMean")
10 cat("\nTotal Mean : ",mean(array))
11
12 cat("\n\nMedian")
13 cat("\nTotal median : ",median(array))
14
15 cat("\n\nMode")
16 get_mode <-function(v) {
17   unique_value <-unique(v)
18   unique_value[which.max(tabulate(match(v,unique_value)))]
19 }
20 cat("\nTotal Mode : ",get_mode(array))
21
22 cat("\n\nMidrange")
```

## Output:

```
Console Terminal x Background Jobs x
R 4.2.1 · ~/
Sum
Total Sum : 120.9

Count
Total count : 20

Mean
Total Mean : 6.045

median
Total median : 6.85

Mode
Total Mode : 1

Midrange
Total Midrange : 10
> |
```

### 3. Divide the array into 4 subgroups

```
Source on Save Run Source
1 array <- c(1,2,2.5,3,3.5,4,4.5,6,6.3,6.7,7,7.2,7.6,7.9,8,8.1,8.3,8.8,9,9.5)
2 s <- split(array, ceiling(seq_along(array)/5))
3 print(s)
```

Output:

```
Console Terminal x Background Jobs x
R 4.2.1 ~ /
> source("~/foursubgroup.R")
$`1`
[1] 1.0 2.0 2.5 3.0 3.5

$`2`
[1] 4.0 4.5 6.0 6.3 6.7

$`3`
[1] 7.0 7.2 7.6 7.9 8.0

$`4`
[1] 8.1 8.3 8.8 9.0 9.5
```

4. Find sum, count, mean, median, mode, and mid-range of sub-groups

```
1 array <-c(1,2,2.5,3,3.5,4,4.5,6,6.3,6.7,7,7.2,7.6,7.9,8,8.1,8.3,8.8,9,9.5)
2 |
3 applyToSubgroup<-function(x){
4   modeOfArray<-function(v){
5     unique_value <- unique(v)
6     unique_value[which.max(tabulate(match(v, unique_value)))]
7   }
8   midrangeOfArray<-function(y){
9     (max(y)+min(y))/2
10  }
11   print(paste("The sum of array is ", sum(x)))
12   print(paste("The count of array is ", length(x)))
13   print(paste("The mean of array is ", mean(x)))
14   print(paste("The median of array is ", median(x)))
15   print(paste("The mode of array is ", modeOfArray(x)))
16   print(paste("The midrange of array is ", midrangeOfArray(x)))
17   print(" ")
18 }
19 splitted_list<-split(array, ceiling(seq_along(array)/5))
20 print(splitted_list)
21 cstep<-1
22 for(x in splitted_list){
23   print(paste("For subgroup ", cstep))
24   applyToSubgroup(x)
25   cstep<-cstep+1
26 }
27
```

Output:

```
Console Terminal x Background Jobs x
R 4.2.1 ~ /

[1] "For subgroup 1"
[1] "The sum of array is 12"
[1] "The count of array is 5"
[1] "The mean of array is 2.4"
[1] "The median of array is 2.5"
[1] "The mode of array is 1"
[1] "The midrange of array is 2.25"
[1] " "
[1] "For subgroup 2"
[1] "The sum of array is 27.5"
[1] "The count of array is 5"
[1] "The mean of array is 5.5"
[1] "The median of array is 6"
[1] "The mode of array is 4"
[1] "The midrange of array is 5.35"
[1] " "
[1] "For subgroup 3"
[1] "The sum of array is 37.7"
[1] "The count of array is 5"
[1] "The mean of array is 7.54"
[1] "The median of array is 7.6"
[1] "The mode of array is 7"
[1] "The midrange of array is 7.5"
[1] " "
[1] "For subgroup 4"
[1] "The sum of array is 43.7"
[1] "The count of array is 5"
[1] "The mean of array is 8.74"
[1] "The median of array is 8.8"
[1] "The mode of array is 8.1"
[1] "The midrange of array is 8.8"
[1] " "
> |
```

5. Find distributive measures and algebraic measures

```
Source on Save Run Source
1 array <-c(1,2,2.5,3,3.5,4,4.5,6,6.3,6.7,7,7.2,7.6,7.9,8,8.1,8.3,8.8,9,9.5)
2
3 cat("\n\nDistributed Measures")
4 cat("\nTotal Count : ",length(array))
5 cat("\nTotal Sum : ",sum(array))
6
7 cat("\n\nAlgebraic Measures")
8 cat("\noverall Mean: ",sum(array)/length(array))
```

Output:

```
> source("~/measure.R")
```

```
Distributed Measures  
Total Count : 20  
Total Sum : 120.9
```

```
Algebraic Measures  
Overall Mean: 6.045  
> |
```

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