

# Lab\_Assignment\_2

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1. #Create two vector and perform all arithmentic operations :Addition, Subtraction, Multiplication, Division, Integer division, Remainder

```
x<-c(6, 7, 8)
y<-c(10, 11, 12)
```

Creating vectors 'x' & 'y'

```
print(x+y)
```

Performing arithmetic operation

```
## [1] 16 18 20
```

```
print(x-y)
```

```
## [1] -4 -4 -4
```

```
print(x*y)
```

```
## [1] 60 77 96
```

```
print(x/y)
```

```
## [1] 0.6000000 0.6363636 0.6666667
```

```
print(x%/%y)
```

```
## [1] 0 0 0
```

```
print(y%%x)
```

```
## [1] 4 4 4
```

```
x=seq(2,15,length=5)  
x
```

**2. Create integer vector(length =5),character vector(length=3)**

```
## [1] 2.00 5.25 8.50 11.75 15.00
```

```
cat("Length if x:",length(x))
```

```
## Length if x: 5
```

```
y=c("r","p","g")  
y
```

```
## [1] "r" "p" "g"
```

```
cat("Length if y:",length(y))
```

```
## Length if y: 3
```

**3. Different approaches to create vector(Usage of vector;seq)**

```
vector1<-c(23, 34, 'raghul')  
vector1
```

**Creating vectors using c() function**

```
## [1] "23" "34" "raghul"
```

```
vector2<- 1:5  
vector2
```

**Creating vectors using [colon:]**

```
## [1] 1 2 3 4 5
```

```
vector3<-rep(2, 4)
vector3
```

Creating vectors using rep() function

```
## [1] 2 2 2 2
```

```
vector4<- seq(1, 10, by=2)
vector4
```

Creating vector using seq() function

```
## [1] 1 3 5 7 9
```

```
vector5<-vector( "logical", 5)
vector5
```

Creating vector using vector() function

```
## [1] FALSE FALSE FALSE FALSE FALSE
```

```
x=1:5
y=c(9, 10, 11, 12, 13)
table(x,y)
```

4. Usage of table command (Demonstrate it in Character vector )

```
##      y
## x    9 10 11 12 13
## 1 1  0  0  0  0
## 2 0  1  0  0  0
## 3 0  0  1  0  0
## 4 0  0  0  1  0
## 5 0  0  0  0  1
```

```
x
```

5. Find the sum,mean, maximum, minimum, range of the values , variance,sin of the elements in a vector

```
## [1] 1 2 3 4 5
```

```
min(x)
```

```
## [1] 1
```

```
max(x)
```

```
## [1] 5
```

```
sum(x)
```

```
## [1] 15
```

```
mean(x)
```

```
## [1] 3
```

```
range(x)
```

```
## [1] 1 5
```

```
var(x)
```

```
## [1] 2.5
```

```
sin(x)
```

```
## [1] 0.8414710 0.9092974 0.1411200 -0.7568025 -0.9589243
```

```
vector1=c(NA,2,3,8,4,NA,NA,6)  
vector1
```

**6. Find the missing values in a vector**

```
## [1] NA 2 3 8 4 NA NA 6
```

```
is.na(vector1)
```

```
## [1] TRUE FALSE FALSE FALSE FALSE TRUE TRUE FALSE
```

```
vector1
```

**7. Demonstrate use of na.rm in calculating mean value.**

```
## [1] NA 2 3 8 4 NA NA 6
```

```
mean(vector1)
```

```
## [1] NA
```

```
mean(vector1,na.rm = TRUE)
```

```
## [1] 4.6
```

```
x=1:10  
sum(x)
```

8. Find the sum of all elements in the vector

```
## [1] 55
```

```
x=c(2, 3, 4, 5,6 ,7 ,8,56, 67)  
sum(x[2]+x[5])
```

9. Find the sum of second and 5th element in the vector

```
## [1] 9
```

```
x=c("c","I","D")  
x
```

10. Convert a character to integer

```
## [1] "c" "I" "D"
```

```
typeof(x)
```

```
## [1] "character"
```

```
y=as.integer(x)
```

```
## Warning: NAs introduced by coercion
```

```
typeof(y)
```

```
## [1] "integer"
```

```
sq<-seq(-100, 100, by=3)
sq
```

11. Generate a sequence of numbers from -100 to 100 with a gap of 3 elements.

```
## [1] -100 -97 -94 -91 -88 -85 -82 -79 -76 -73 -70 -67 -64 -61 -58
## [16] -55 -52 -49 -46 -43 -40 -37 -34 -31 -28 -25 -22 -19 -16 -13
## [31] -10 -7 -4 -1 2 5 8 11 14 17 20 23 26 29 32
## [46] 35 38 41 44 47 50 53 56 59 62 65 68 71 74 77
## [61] 80 83 86 89 92 95 98
```

```
rep1<- rep(seq(3:11), 3)
rep1
```

12. Create a repeated pattern 2 3 4 5...10 2 3 4 5 ...10 2 3 4 5...10

```
## [1] 1 2 3 4 5 6 7 8 9 1 2 3 4 5 6 7 8 9 1 2 3 4 5 6 7 8 9
```

```
pat<-rep(2:100, each = 3)
pat
```

13. create a pattern 2 2 2 3 3 3 .....100 100 100

```
## [1] 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7
## [19] 8 8 8 9 9 9 10 10 10 11 11 11 12 12 12 13 13 13
## [37] 14 14 14 15 15 15 16 16 16 17 17 17 18 18 18 19 19 19
## [55] 20 20 20 21 21 21 22 22 22 23 23 23 24 24 24 25 25 25
## [73] 26 26 26 27 27 27 28 28 28 29 29 29 30 30 30 31 31 31
## [91] 32 32 32 33 33 33 34 34 34 35 35 35 36 36 36 37 37 37
## [109] 38 38 38 39 39 39 40 40 40 41 41 41 42 42 42 43 43 43
## [127] 44 44 44 45 45 45 46 46 46 47 47 47 48 48 48 49 49 49
## [145] 50 50 50 51 51 51 52 52 52 53 53 53 54 54 54 55 55 55
## [163] 56 56 56 57 57 57 58 58 58 59 59 59 60 60 60 61 61 61
## [181] 62 62 62 63 63 63 64 64 64 65 65 65 66 66 66 67 67 67
## [199] 68 68 68 69 69 69 70 70 70 71 71 71 72 72 72 73 73 73
## [217] 74 74 74 75 75 75 76 76 76 77 77 77 78 78 78 79 79 79
## [235] 80 80 80 81 81 81 82 82 82 83 83 83 84 84 84 85 85 85
## [253] 86 86 86 87 87 87 88 88 88 89 89 89 90 90 90 91 91 91
## [271] 92 92 92 93 93 93 94 94 94 95 95 95 96 96 96 97 97 97
## [289] 98 98 98 99 99 99 100 100 100
```

```
rep2<- rep(seq(2:10),3)
rep2
```

14. Create a repeated pattern 2 3 4 5...10 2 3 4 5 ...10 2 3 4 5...10

```
## [1] 1 2 3 4 5 6 7 8 9 1 2 3 4 5 6 7 8 9 1 2 3 4 5 6 7 8 9
```

```
f = c(1:10)^2  
f
```

15. Create a vector with the square values of 1 to 10

```
## [1] 1 4 9 16 25 36 49 64 81 100
```

16. Create a pattern 1 2 3 11 12 13 21 22 23 31 32 33