1 creating vectors

```
v1 <- c(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20)
v2 <- c(20,19,18,17,16,15,14,13,12,11,10,9,8,7,6,5,4,3,2,1)
print(v1)
print(v2)
```

OUTPUT:
```
> print(v1)
 [1]  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20
> print(v2)
 [1] 20 19 18 17 16 15 14 13 12 11 10  9  8  7  6  5  4  3  2  1
```

2 Assigning

```
tmp <- c(4,6,3)
print(tmp)
```

OUTPUT: `[1]  4  6  3`

3 R Hello world

```
a <- "HELLO WORLD"
print(a)
```

OUTPUT: `[1]  "HELLO WORLD"`

4 ADDITION OF TWO VECTORS

```
v1 <- c(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20)
v2 <- c(20,19,18,17,16,15,14,13,12,11,10,9,8,7,6,5,4,3,2,1)
vadd <- v1 + v2
print(vadd)
```

OUTPUT:`[1] 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21`

5 SUM , MEAN and PRODUCT OF TWO VECTORS

```
V1 <- c(1,3,5,7)
V2 <- c(1,2,4,8)
vsum <- V1 + V2
print(vsum)

vpro <- V1 * V2
print(vpro)

vmean <- mean(V1)
print(vmean)
```

OUTPUT: [1]   2   5   9 15 #sum
[1]   1   6 20 56 #product
[1] 4 #mean

# 6. taking user input
my.name <- readline(prompt = "Enter your name : ")
my.t <- readline(prompt = "Enter your town : ")
print(paste("Hi",my.name,"are you came from",my.t))

OUTPUT:[1] "Hi VINAY are you came from TENALI"

# 7. Min and Maxvalues of vector
v.1 <- c(2,8,4,9,0,5,1)
m <- min(v.1)
M <- max(v.1)
print(paste("Minimum value of vector is",m))
print(paste("Maximum value of vector is",M))

OUTPUT:[1] "Minimum value of vector is 0"
         [1] "Maximum value of vector is 9"

# 8. sort vectors
v.2 <- c(9,81,72,63,54,45,36,27,18)
v.3 <- sort(v.2)
v.4 <- sort(v.2,decreasing = TRUE)
print(paste("before sorting"))
print(v.2)
print(paste("after sorting increasing order"))
print(v.3)
print(paste("after sorting decreasing order"))
print(v.4)

OUTPUT: "before sorting" --- [1]   9 81 72 63 54 45 36 27 18
           "after sorting increasing order" --- [1]   9 18 27 36 45 54 63 72 81
           "after sorting decreasing order" --- [1] 81 72 63 54 45 36 27 18   9

# 9. factorial of a number
number.1 <- readline(prompt = "Enter a number: ")
n.1 <- as.integer(number.1)
if(n.1 < 0){
  print(paste("invalid input, no factorial for negative numbers"))
}else{
  f.1 <- factorial(n.1)
  print(paste("Factorial of number",n.1,"is",f.1))
}

OUTPUT: Enter a number: 10
           [1] "Factorial of number 10 is 3628800"

```
# 10. Amstrong number
n.2 <- as.integer(readline(prompt = "Enter a number : "))
sum <- 0
temp = n.2
while(temp > 0) {
  digit = temp %% 10
  sum = sum + (digit ^ 3)
  temp = floor(temp / 10)
}
if(n.2 == sum) {
  print(paste(n.2, "is an Armstrong number"))
} else {
  print(paste(n.2, "is not an Armstrong number"))
}
```

OUTPUT: Enter a number : 12
            [1] "12 is not an Armstrong number"

```
# 11. multiplication of number
n.3 <- as.integer(readline(prompt = "Enter a numerical value : "))
for(i in 1:10)
{
  n.4 <- n.3*i
  print(paste(n.3 ,"*", i ,"=", n.4))
}
```

OUTPUT: Enter a numerical value : 11
[1] "11 * 1 = 11"
[1] "11 * 2 = 22"
[1] "11 * 3 = 33"
[1] "11 * 4 = 44"
[1] "11 * 5 = 55"
[1] "11 * 6 = 66"
[1] "11 * 7 = 77"
[1] "11 * 8 = 88"
[1] "11 * 9 = 99"
[1] "11 * 10 = 110"

```
# 12. odd or even
n.5 <- as.integer(readline(prompt = "Enter a numeric value : "))
if(n.5%%2 == 0){
  print(paste(n.5,"is even number"))
}else{
  print(paste(n.5,"is odd number"))
}
```

OUTPUT: Enter a numeric value : 99
            [1] "99 is odd number"

```
#13 Fibonacci sequence
nrange = as.integer(readline(prompt="Enter range of series : "))
n1 = 0
n2 = 1
count = 2

if(nrange <= 0) {
  print("Plese enter a positive integer")
} else {
  if(nrange == 1) {
    print("Fibonacci sequence:")
    print(n1)
  } else {
    print("Fibonacci sequence:")
    print(n1)
    print(n2)
    while(count < nrange) {
      nth = n1 + n2
      print(nth)
      # update values
      n1 = n2
      n2 = nth
      count = count + 1
    }
  }
}
```

OUTPUT: Enter range of series : 15
        [1] "Fibonacci sequence:"
[1] 0
[1] 1
[1] 1
[1] 2
[1] 3
[1] 5
[1] 8
[1] 13
[1] 21
[1] 34
[1] 55
[1] 89
[1] 144
[1] 233
[1] 377