

assessment day 1

Set I

1. Write a R program to create a vector of a specified type and length. Create vector of numeric, complex, logical and character types of length 6 with your own examples. print the vector, type, and length.

Syntax

```
x = vector("numeric", 5)
print("Numeric Type:")
print(x)
c = vector("complex", 5)
print("Complex Type:")
print(c)
l = vector("logical", 5)
print("Logical Type:")
print(l)
chr = vector("character", 5)
print("Character Type:")
print(chr)
```

O/P

```
[1] "Numeric Type:"
[1] 0 0 0 0 0
[1] "Complex Type:"
[1] 0+0i 0+0i 0+0i 0+0i 0+0i
[1] "Logical Type:"
[1] FALSE FALSE FALSE FALSE FALSE
[1] "Character Type:"
[1] "" "" "" "" ""
```

```
x = c(10, 20, 30)
```

2. Write a R program to find Sum, Mean and Product of a Vector.

Syntax

```
x = c(10, 20, 30)
print("Sum:")
print(sum(x))
print("Mean:")
print(mean(x))
print("Product:")
print(prod(x))
```

O/P

```
[1] "Sum:"
[1] 60
[1] "Mean:"
[1] 20
[1] "Product:"
[1] 6000
```



3. Write a R program to find the minimum and the maximum of a Vector

Syntax

```
x = c(10, 20, 30, 25, 9, 26)
print("Original Vectors:")
print(x)
print("Maximum value of the above Vector:")
print(max(x))
print("Minimum value of the above Vector:")
print(min(x))
```

O/P

```
[1] "Original Vectors:"
[1] 10 20 30 25 9 26
[1] "Maximum value of the above Vector:"
[1] 30
[1] "Minimum value of the above Vector:"
[1] 9
```

4. Write a R program to find second highest value in a given vector.

Syntax

```
x = c(10, 20, 30, 20, 20, 25, 9, 26)
print("Original Vectors:")
print(x)
print("Find second highest value in a given vector:")
l = length(x)
print(sort(x, partial = l-1)[l-1])
```

O/P

```
[1] "Original Vectors:"
[1] 10 20 30 20 20 25 9 26
[1] "Find second highest value in a given vector:"
[1] 26
```

5. Write a R program to add a new item g4 = "C++" to a given list.
Sample list: (g1 = 5:10, g2 = "R Programming", g3 = "HTML")

Syntax

```
list1 = list(g1 = 1:10, g2 = "R Programming", g3 = "HTML")
print("Original list:")
print(list1)
print("Add a new vector to the said list:")
list1$g4 = "c++"
print(list1)
```

O/P



```
[1] "Original list:"
$g1
[1] 1 2 3 4 5 6 7 8 9 10
```

```
$g2
[1] "R Programming"
```

```
$g3
[1] "HTML"
```

```
[1] "Add a new vector to the said list:"
$g1
[1] 1 2 3 4 5 6 7 8 9 10
```

```
$g2
[1] "R Programming"
```

```
$g3
[1] "HTML"
```

```
$g4
[1] "c++"
```

6. Write a R program to extract all elements except the third element of the first vector of a given list.
Sample list: (g1 = 5:10, g2 = "R Programming", g3 = "HTML")

Syntax

```
list1 = list(g1 = 1:10, g2 = "R Programming", g3 = "HTML")
print("Original list:")
print(list1)
print("First vector:")
print(list1$g1)
print("First vector without third element:")
list1$g1 = list1$g1[-3]
print(list1$g1)
```

O/P

```
[1] "Original list:"
$g1
[1] 1 2 3 4 5 6 7 8 9 10
```

```
$g2
[1] "R Programming"
```

```
$g3
[1] "HTML"
```

```
[1] "First vector:"
[1] 1 2 3 4 5 6 7 8 9 10
[1] "First vector without third element:"
[1] 1 2 4 5 6 7 8 9 10
```

7. Write a R program to create an ordered factor from data consisting of the names of months



```

mons_v = c("March", "April", "January", "November", "January",
"September", "October", "September", "November", "August", "February",
"January", "November", "November", "February", "May", "August", "February",
"July", "December", "August", "August", "September", "November", "September",
"February", "April")
print("Original vector:")
print(mons_v)
f = factor(mons_v)
print("Ordered factors of the said vector:")
print(f)
print(table(f))

```

Syntax

```

mons_v = c("March", "April", "January", "November", "January",
"September", "October", "September", "November", "August", "February",
"January", "November", "November", "February", "May", "August", "February",
"July", "December", "August", "August", "September", "November", "September",
"February", "April")
print("Original vector:")
print(mons_v)
f = factor(mons_v)
print("Ordered factors of the said vector:")
print(f)
print(table(f))

```

O/P

```

[1] "Original vector:"
[1] "March"      "April"      "January"    "November"   "January"    "September"
[7] "October"    "September"  "November"   "August"     "February"   "January"
[13] "November"   "November"   "February"   "May"        "August"     "February"
[19] "July"       "December"   "August"     "August"     "September"  "November"
[25] "September"  "February"   "April"
[1] "Ordered factors of the said vector:"
[1] March      April      January    November   January    September  October
[8] September  November   August     February   January    November   November
[15] February   May        August     February   July        December   August
[22] August     September  November   September  February    April
11 Levels: April August December February January July March May ... September
f
      April      August      December      February      January      July      March      May
      2          4          1          4          3          1          1          1
November      October      September
      5          1          4

```

