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R Lab

Program 1

Q1. Define the object "myobject" and assign the vector 1:10 in at least 3 different ways.

```
myobject <- 1:10
myobject

myobject <- c(1:10)
myobject

myobject <- seq(from=1, to=10, by=1)
myobject
```

```
> #Q1
>
> myobject <- 1:10
> myobject
[1] 1 2 3 4 5 6 7 8 9 10
>
> myobject <- c(1:10)
> myobject
[1] 1 2 3 4 5 6 7 8 9 10
>
> myobject <- seq(from=1, to=10, by=1)
> myobject
[1] 1 2 3 4 5 6 7 8 9 10
> |
```

Q2. Get the sum of your object.

```
sum(myobject)
```

```
> sum(myobject)
[1] 55
> |
```

Q3. Create the following vector by using the paste function:

[1] "R is great 4 and I will love it"

[2] "R is great 7 and I will love it"

[3] "R is great 45 and I will love it"

```
a <- paste("R is great", 4, "and I will love it")
a

b <- paste("R is great", 7, "and I will love it")
b

c <- paste("R is great", 45, "and I will love it")
c
```

```
> a <- paste("R is great", 4, "and I will love it")
> a
[1] "R is great 4 and I will love it"
>
> b <- paste("R is great", 7, "and I will love it")
> b
[1] "R is great 7 and I will love it"
>
> c <- paste("R is great", 45, "and I will love it")
> c
[1] "R is great 45 and I will love it"
> |
```

Q4. Vector of 1,2,3, repeat the vector to get 11 x 1, 10 x 2, and 10 x3.

```
a <- rep(c(1, 2, 3), times=c(11, 10, 10))
a
```

```
> a <- rep(c(1, 2, 3), times=c(11, 10, 10))
> a
[1] 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3
> a <- rep(c(1, 2, 3), times=c(11, 10, 10))
> a
[1] 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3
> a[7]
[1] 1
> |
```

Q5. What is the value of this vector on position 7?

```
a[7]
```

```
> a[7]  
[1] 1
```

Q6. Repeat the string "Hello R" thrice.

```
replicate(3, "Hello R")
```

```
> replicate(3, "Hello R")  
[1] "Hello R" "Hello R" "Hello R"  
> |
```

Q7. Repeat the first element of a vector twice and the second element of the vector thrice.

```
a <- rep(c('A', 'B'), times=c(2, 3))  
a
```

```
> a <- rep(c('A', 'B'), times=c(2, 3))  
> a  
[1] "A" "A" "B" "B" "B"  
> |
```

Q8. Create a matrix of two rows and three columns.

```
matrix(1:6, nrow=2, ncol=3)
```

```
> matrix(1:6, nrow=2, ncol=3)  
      [,1] [,2] [,3]  
[1,]    1    3    5  
[2,]    2    4    6  
> |
```

Q9. Create a matrix 3X3 by row-wise.

```
matrix(1:9, nrow=3, ncol=3, byrow=TRUE)
```

```
> matrix(1:9, nrow=3, ncol=3, byrow=TRUE)
      [,1] [,2] [,3]
[1,]    1    2    3
[2,]    4    5    6
[3,]    7    8    9
> |
```

Q10. Build a vectors of random values with the sample() function. Find the min(), max(), range(), length(), sum(), prod(), mean(), var().

```
randomvector <- sample(1:20, size = 15)
randomvector
```

```
min(randomvector)
max(randomvector)
range(randomvector)
length(randomvector)
sum(randomvector)
prod(randomvector)
mean(randomvector)
var(randomvector)
```

```
> randomvector <- sample(1:20, size = 15)
> randomvector
[1] 1 5 9 15 6 8 10 3 20 11 7 17 14 4 18
>
> min(randomvector)
[1] 1
> max(randomvector)
[1] 20
> range(randomvector)
[1] 1 20
> length(randomvector)
[1] 15
> sum(randomvector)
[1] 148
> prod(randomvector)
[1] 2.565054e+13
> mean(randomvector)
[1] 9.866667
> var(randomvector)
[1] 33.98095
> |
```