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LAB WEEK – 1 ASSESSMENT

Introduction to R language

Basic Arithmetic Operations:

"+" Addition

"-" Subtraction

"*" Multiplication

"/" Division

"**" or "^" Exponent

"%%" Modulus

"5%/%2" Integer Division

```
> 12+50
[1] 62
> a=9
> b=5
> c=a+b
> c
[1] 14
```

```
> 2**2
[1] 4
> 2^3
[1] 8
> 56%%5
[1] 1
> 5%/%2
```

Other various Operations:

“NaN” – Not a Number

“NA” – Not available

```
> 1:15
 [1]  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
> 1/0
[1] Inf
> Inf-Inf
[1] NaN
> sqrt(-1)
[1] NaN
Warning message:
In sqrt(-1) : NaNs produced
> sqrt(-1)
[1] NaN
Warning message:
In sqrt(-1) : NaNs produced
> 1+sin(NA)
[1] NA
```

Vector Operations:

- Creation of vector
- Sum of two vectors with uneven number of elements
- Vector Operations (including logical operations)
- Finding Sum
- Finding Mean
- Finding Median
- Finding Standard Deviation
- Finding Square root

```
> x<-c(1:10)
> x
 [1]  1  2  3  4  5  6  7  8  9 10
> c
[1] 14
> x<-c(1:10)
> x[(x>8)|(x<5)]
[1]  1  2  3  4  9 10
> u=c(1,2)
> v=c(1,2,3)
> u+v
[1] 2 4 4
Warning message:
In u + v : longer object length is not a multiple of shorter object length
```

```
> sum(u)
[1] 3
> mean(u)
[1] 1.5
> median(u)
[1] 1.5
> sd(u)
[1] 0.7071068
>
> sqrt(u)
[1] 1.000000 1.414214
```

Various ways of creating a Sequence:

```
> seq(1,5)
[1] 1 2 3 4 5
> seq(1:5)
[1] 1 2 3 4 5
> seq(1,5,2)
[1] 1 3 5
> seq(1,5,by=2.5)
[1] 1.0 3.5
```

Working with strings :

```
> x=as.character(7.81)
> x
[1] "7.81"
> paste("First","Second","Third")
[1] "First Second Third"
> paste("First","Second","Third",sep=":")
[1] "First:Second:Third"
> fname = "N"; lname = "Nim"
> paste(fname)
[1] "N"
> paste(fname,lname)
[1] "N Nim"
```

Data Frames (in script):

```
1  n=c(1,2,3)
2  s=c("a","b","c")
3  b = c(TRUE,FALSE,TRUE)
4  df=data.frame(n,s,b)
5  df
6
```

Output :

```
  n s     b
1 1 a  TRUE
2 2 b FALSE
3 3 c  TRUE
```

Importing excel sheet data values:

- Save the excel sheet with values as a csv file
- Then import the dataset from the environment window