Department of Information Technology

Practical File

Subject : Statistical Computing Techniques using R

[BTES 502-20]

B.Tech – V

Semester [Batch

2022-2026]

Chandigarh Engineering College- CGC Landran,
Mohali-140307

Submitted to:

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AI&ML (D2)

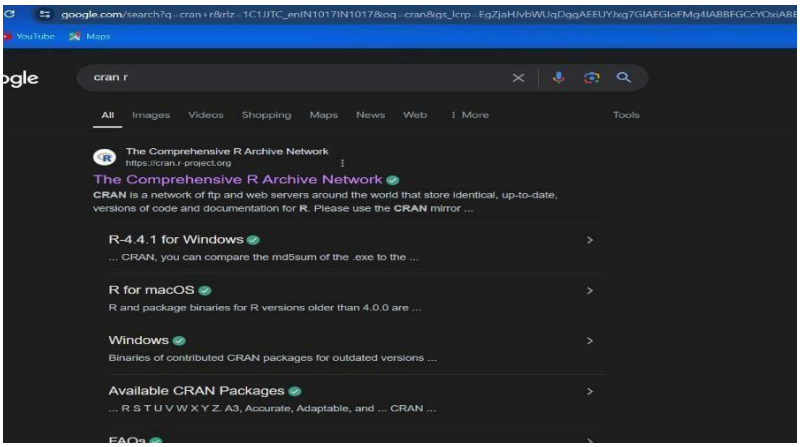
Experiment-

1 Aim: To install R and R studio in the windows.

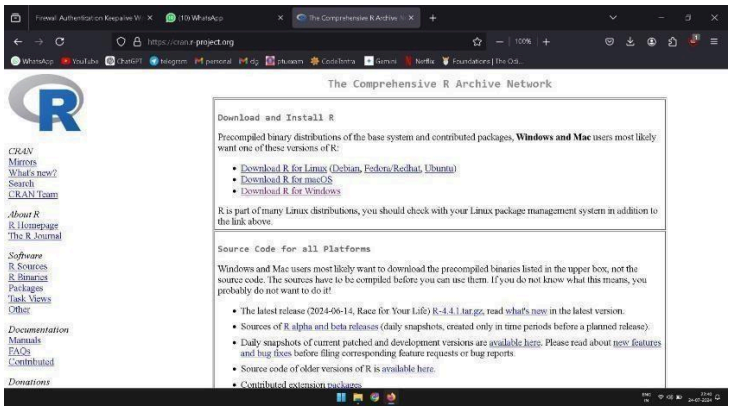
Theory:

Installation of R:

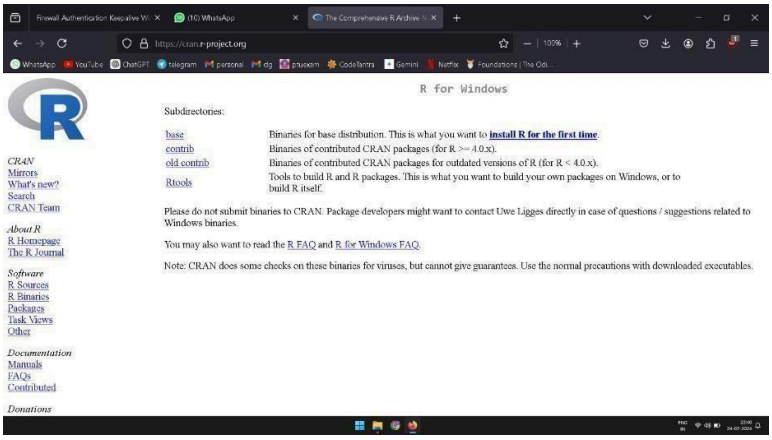
Step 1: Search CRAN on any search browser.



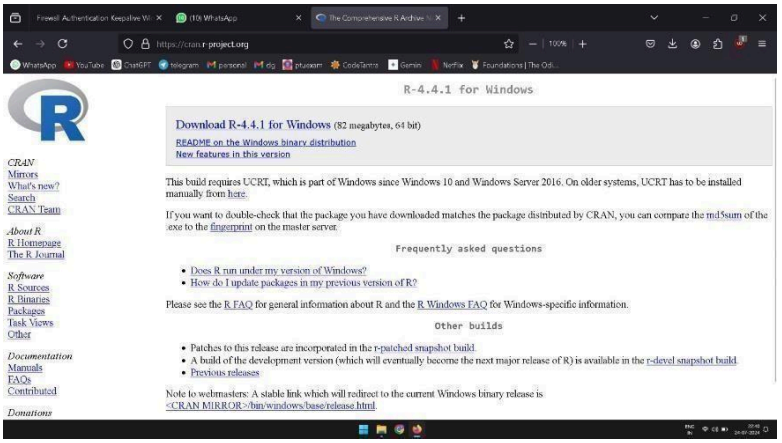
Step 2: Download R for windows.



Step 3: Install



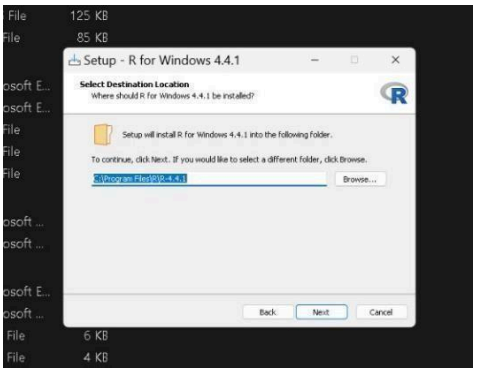
Step 4: Download the version



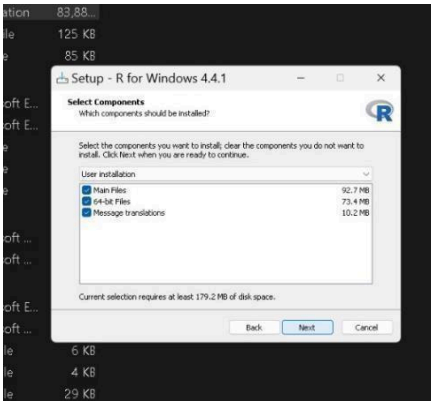
Step 5: Setup language

Step 6: Information

Step 7: Setup – R



Step 8:



Step 9:

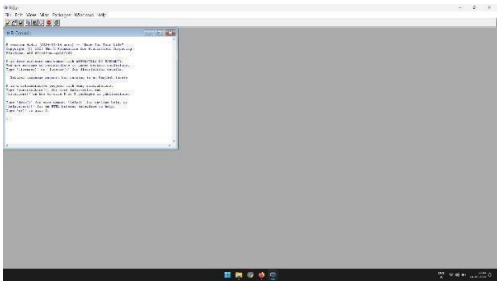
Step 10:

Step 11: Installing

Step 12:

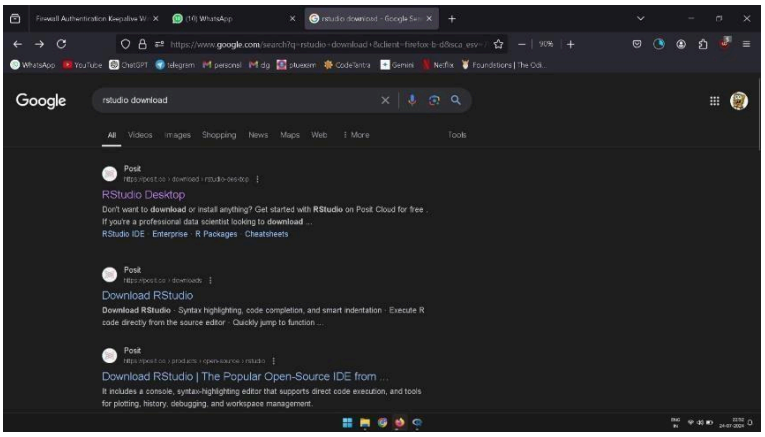
Step 13: R download in desktop.

Step 14:

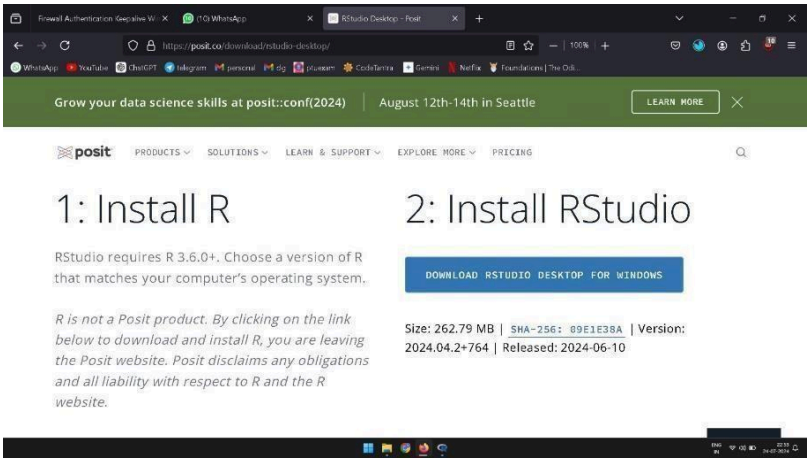


Installation of R studio:

Step 1: Search R studio in any search browser.

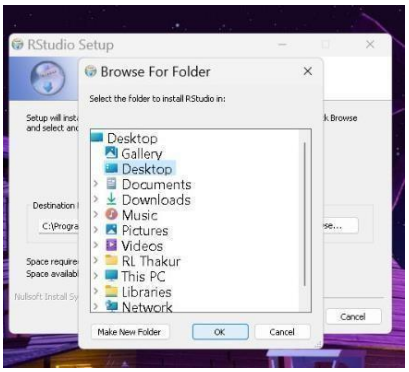


Step2: Install RStudio



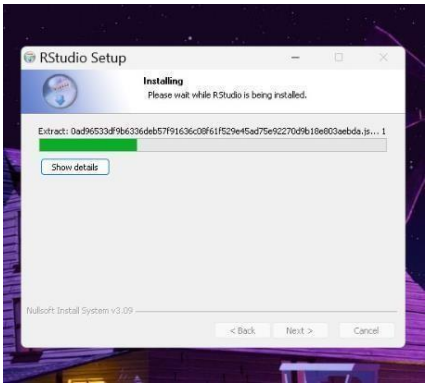
Step 3: Setup of RStudio

Step 4:

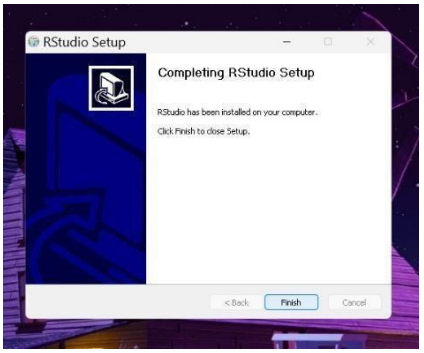


Step 5:

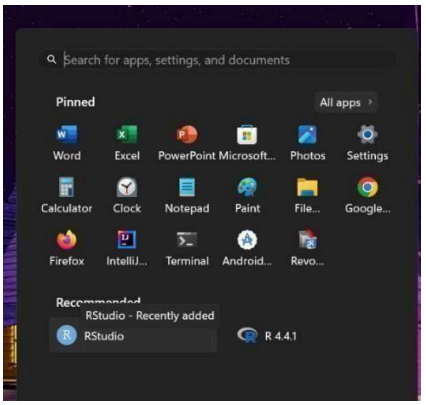
Step 6: Installing



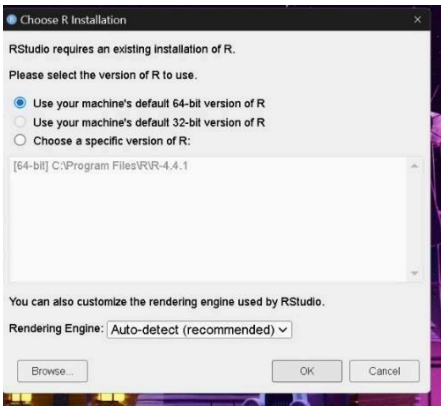
Step 7: Complete the Setup



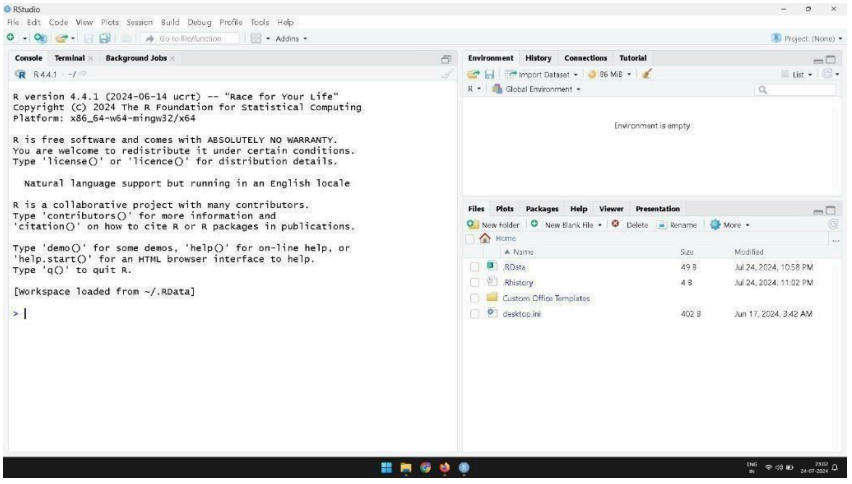
Step 8:



Step 9:



Step 10:



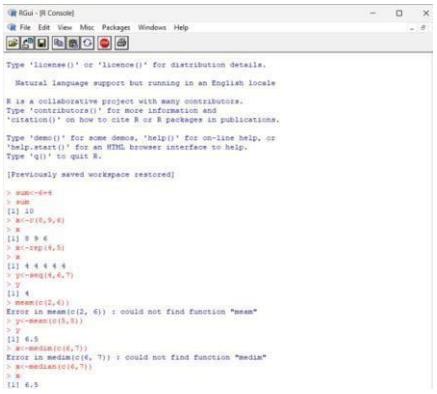
Experiment-2

Aim: Write Basic R commands.

Theory:

- **sum():** Add up all values in a vector.
- **c(), scan():**Enter data manually to a vector in R.
- **rep():** Make vector of repeated values.
- **seq():** Make vector of repeated values.
- **mean(),median():** Identify “centre” of distribution.

Outputs:



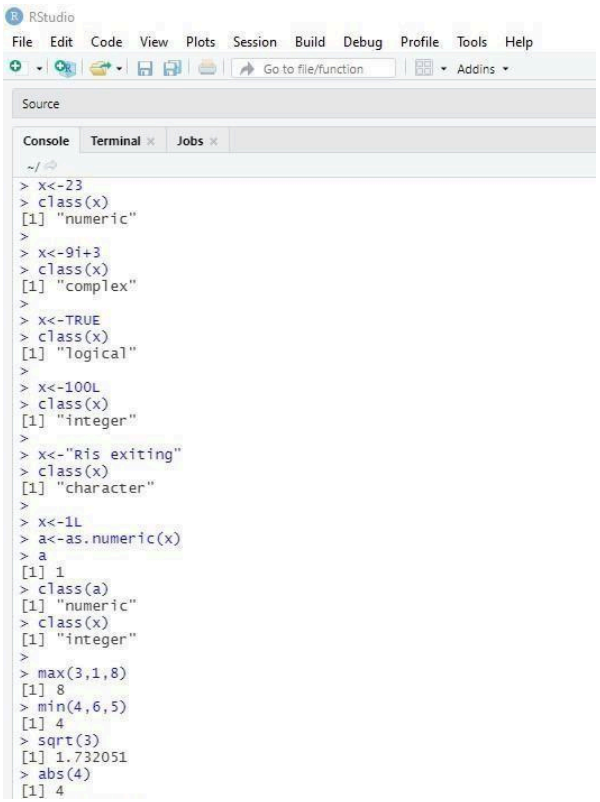
Program:

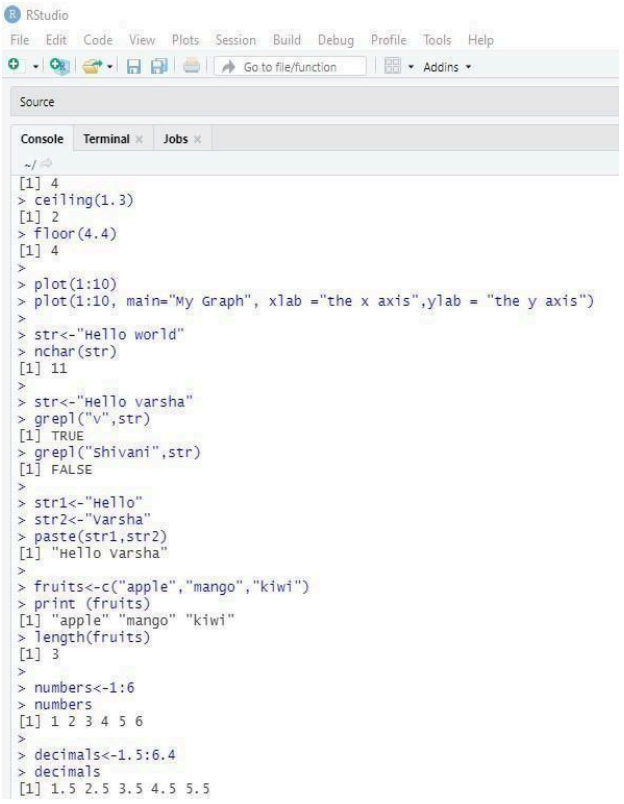
```
x<-23
class(x)

x<-9i+3
class(x)

x<-TRUE
class(x)

x<-100L
class(x)

x<-"Ris
exiting" class(x)

x<-1L
a<-as.numeric(x
) a
class(a)
class(x
)

max(3,1,8)
```

```
min(4,6,5)
sqrt(3)
abs(4)
ceiling(1.3
) floor(4.4)

plot(1:10)
plot(1:10, main="My Graph", xlab ="the x axis",ylab = "the y axis")

str<-"Hello
world" nchar(str)

str<-"Hello
varsha"
grepl("v",str)
grepl("Shivani",str
)

str1<-"Hello"
str2<-"Varsha"
paste(str1,str2
)

fruits<-c("apple","mango","kiwi"
) print (fruits)
length(fruits)

numbers<-1:
6 numbers

decimals<-1.5:6.
4 decimals

fruits<-c("apple","mango","kiwi"
) sort(fruits)

fruits<-c("apple","mango","kiwi"
) fruits[2]

fruits<-c("apple","mango","kiwi","banana"
) fruits[c(1,3)]
fruits[c(-4)]

repeat_each<-rep(c(1,2,3),each =
3) repeat_each

repeat_times<-rep(c(1,2,3),times =
3) repeat_times

numbers<-seq(from=0,to=100,by=20
) numbers

thislist<-list("apple","orange","mango"
) thislist<-"cherry"
thislist

thislist<-list("apple","orange","mango"
) length(thislist)
```

```
thislist<-list("apple","orange","mango"
) "apple"%in% thislist
"kiwi"%in% thislis
thislist<-list("apple","orange","mango") append(thislist,"kiwi",after=2)

thislist<-list(2,1,5,4,8,6,9
) thislist[2:5]

thislist<-list(8,6,9)
newlist<-thislist[-2
] newlist

thislist<-list("apple","kiwi","orange"
) for(x in thislist){
print(x)
}

i<-1
while(i<6)
{ print(i)
i<-i+1
}

i<-1
while(i<6)
{ print(i)
i<-i+1
if(i==4)
{ break
}
}
```

Output:

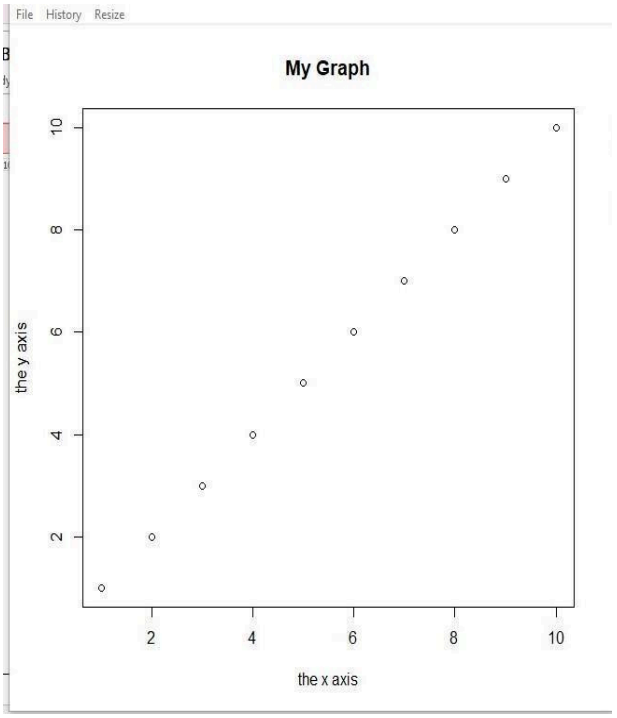




```
> sort(fruits)
[1] "apple" "kiwi"  "mango"
>
> fruits<-c("apple","mango","kiwi")
> fruits[2]
[1] "mango"
>
> fruits<-c("apple","mango","kiwi","banana")
> fruits[c(1,3)]
[1] "apple" "kiwi"
> fruits[c(-4)]
[1] "apple" "mango" "kiwi"
>
> repeat_each<-rep(c(1,2,3),each = 3)
> repeat_each
[1] 1 1 1 2 2 2 3 3 3
>
> repeat_times<-rep(c(1,2,3),times = 3)
> repeat_times
[1] 1 2 3 1 2 3 1 2 3
>
> numbers<-seq(from=0,to=100,by=20)
> numbers
[1]   0  20  40  60  80 100
>
> thislist<-list("apple","orange","mango")
> thislist<-"cherry"
> thislist
[1] "cherry"
>
> thislist<-list("apple","orange","mango")
> length(thislist)
[1] 3
>
> thislist<-list("apple","orange","mango")
> "apple"%in% thislist
[1] TRUE
```

```
> "kiwi"%in% thislist
[1] FALSE
>
> thislist<-list("apple","orange","mango")
> append(thislist,"kiwi",after=2)
[[1]]
[1] "apple"

[[2]]
[1] "orange"

[[3]]
[1] "kiwi"

[[4]]
[1] "mango"

>
> thislist<-list(2,1,5,4,8,6,9)
> thislist[2:5]
[[1]]
[1] 1

[[2]]
[1] 5

[[3]]
[1] 4

[[4]]
[1] 8

>
> thislist<-list(8,6,9)
> newlist<-thislist[-2]
> newlist
[[1]]
```

```
[1] 8

[[2]]
[1] 9

>
> thislist<-list("apple","kiwi","orange")
> for(x in thislist){
+   print(x)
+ }
[1] "apple"
[1] "kiwi"
[1] "orange"
>
> i<-1
> while(i<6){
+   print(i)
+   i<-i+1
+ }
[1] 1
[1] 2
[1] 3
[1] 4
[1] 5
>
> i<-1
> while(i<6){
+   print(i)
+   i<-i+1
+   if(i==4){
+     break
+   }
+ }
[1] 1
[1] 2
[1] 3
>
```



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