Task 1

```
# Write a R program to take input from the user (name and age) and display the values.
name <- readline("Enter your name: ")
age <- readline("Enter your age: ")
print(paste("Welcome",name, "! Your are",age, "years old."))
```

```
> # Write a R program to take input from the user (name and age) and display the values.
> name <- readline("Enter your name: ")
Enter your name: georgina
> age <- readline("Enter your age: ")
Enter your age: 29
> print(paste("Welcome",name, "! Your are",age, "years old."))
[1] "Welcome georgina ! Your are 29 years old."
```

Task 2

```
# Write a R program to get the details of the objects in memory
#Mixed datatypes
info <-list(name="Georgina", age=29, weight=56, female=TRUE)
length(info)
#Same datatype
day=c("Monday", "Tuesday", "Wednesday", "Thursday")
length(day)
```

```
> info <-list(name="Georgina", age=29, weight=56, female=TRUE)
> length(info)
[1] 4
> day=c("Monday", "Tuesday", "Wednesday", "Thursday")
> length(day)
[1] 4
>
```

Task 3

```
# Write a R program to create a sequence of numbers from 20 to 50 and find the mean of numbers from 20 to 60 and sum of numbers from 51 to 91.
print("Sequence of numbers from 20 to 50:")
print(seq(20,50))
print("Mean of numbers from 20 to 60:")
print(mean(20:60))
print("Sum of numbers from 51 to 91:")
print(sum(51:91))
```

```
> print("Sequence of numbers from 20 to 50:")
[1] "Sequence of numbers from 20 to 50:"
> print(seq(20,50))
 [1] 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50
> print("Mean of numbers from 20 to 60:")
[1] "Mean of numbers from 20 to 60:"
> print(mean(20:60))
[1] 40
> print("Sum of numbers from 51 to 91:")
[1] "Sum of numbers from 51 to 91:"
> print(sum(51:91))
[1] 2911
```

Task 4

```
# Write a R program to create a vector which contains 10 random integer values between -50 and +50
random = sample(-50:50, 10, replace=TRUE)
print("10 random integer values between -50 and 50:")
print(random)
```

```
> random = sample(-50:50, 10, replace=TRUE)
> print("10 random integer values between -50 and 50:")
[1] "10 random integer values between -50 and 50:"
> print(random)
 [1]   4  33  25  15  41  36 -50 -34  -9  27
>
```

Session 3

Task 1

```
# Write an R program to create three vectors a,
a<- c(73, 23, 85, 34, 87)
b<- c(74, 64, 64, 48, 99)
c<- c(31, 43, 60, 32, 11)
rbind(a, b, c)
```

```
> a<- c(73, 23, 85, 34, 87)
> b<- c(74, 64, 64, 48, 99)
> c<- c(31, 43, 60, 32, 11)
> rbind(a, b, c)
  [,1] [,2] [,3] [,4] [,5]
a   73   23   85   34   87
b   74   64   64   48   99
c   31   43   60   32   11
```

Task 2

```
#Write a R program to create a Data frames which contain details of 5 employees and display the details. (Name, Age, Gender, Role and
Name <- c("Georgina", "Sam", "John", "Sally", "Ruby")
Age <- c(29, 26, 54, 48, 34)
Gender <- c("Female", "Male", "Male", "Female", "Female")
Role <- c("Data Scientist", "Java Deloper", "Project Manager", "Data Analyst", "Buisness Analyst")
Years_of_Service <- c(1, 5, 15, 8, 10)
df <- data.frame(Name, Age, Gender, Role, Years_of_Service)
print(df)
```

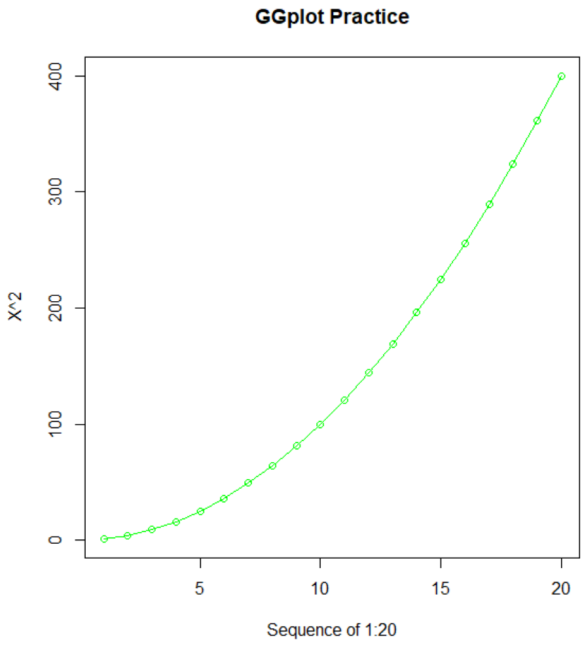
```
> Name <- c("Georgina", "Sam", "John", "Sally", "Ruby")
> Age <- c(29, 26, 54, 48, 34)
> Gender <- c("Female", "Male", "Male", "Female", "Female")
> Role <- c("Data Scientist", "Java Deloper", "Project Manager", "Data Analyst", "Buisness Analyst")
> Years_of_Service <- c(1, 5, 15, 8, 10)
> df <- data.frame(Name, Age, Gender, Role, Years_of_Service)
> Name <- c("Georgina", "Sam", "John", "Sally", "Ruby")
> Age <- c(29, 26, 54, 48, 34)
> Gender <- c("Female", "Male", "Male", "Female", "Female")
> Role <- c("Data Scientist", "Java Deloper", "Project Manager", "Data Analyst", "Buisness Analyst")
> Years_of_Service <- c(1, 5, 15, 8, 10)
> df <- data.frame(Name, Age, Gender, Role, Years_of_Service)
> print(df)
      Name Age Gender             Role Years_of_Service
1 Georgina  29 Female   Data Scientist                1
2      Sam  26   Male     Java Deloper                5
3     John  54   Male  Project Manager               15
4    Sally  48 Female     Data Analyst                8
5     Ruby  34 Female Buisness Analyst               10
> -
```

Task 3

```
# 3. Import the GGPLOT 2 library and plot a graph using the qplot function. X axis is the sequence of 1:20 and the y axis is the x ^ 2. Label the
install.packages("ggplot2")

library("ggplot2")
plot(x,y)
x <-1:20
y <- x^2
plot(x,y, type="o", col="green",xlab="Sequence of 1:20", ylab="X^2", main="GGplot Practice")
```

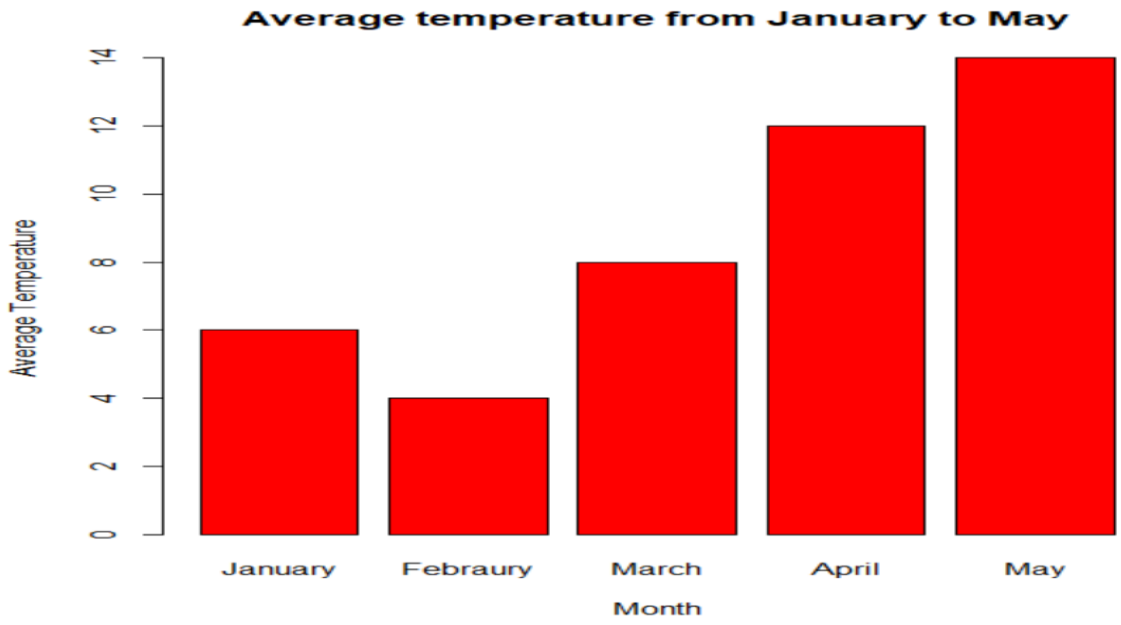
```
> library("ggplot2")
> plot(x,y)
> x <-1:20
> y <- x^2
> plot(x,y, type="o", col="green",xlab="Sequence of 1:20", ylab="X^2", main="GGplot Practice")
> -
```



Task 4

```
#Create a simple bar plot of five subjects
T<- c(6, 4, 8, 12, 14)
M<- c("January", "Febraury", "March", "April", "May")
barplot(T, names.arg=M, xlab="Month", ylab="Average Temperature", col="red", main="Average temperature from January to May")
```

```
> T<- c(6, 4, 8, 12, 14)
> M<- c("January", "Febraury", "March", "April", "May")
> barplot(T, names.arg=M, xlab="Month", ylab="Average Temperature", col="red", main="Average temperature from January to May")
```



Challenge

Fibonacci

```
# Write a R program to get the first 10 Fibonacci numbers.
Fibonacci <- numeric(10)
Fibonacci[1] <- Fibonacci[2] <- 1
for (i in 3:10) Fibonacci[i] <- Fibonacci[i - 2] + Fibonacci[i - 1]
print("First 10 Fibonacci numbers:")
print(Fibonacci)
```

```
> Fibonacci <- numeric(10)
> Fibonacci[1] <- Fibonacci[2] <- 1
> for (i in 3:10) Fibonacci[i] <- Fibonacci[i - 2] + Fibonacci[i - 1]
> print("First 10 Fibonacci numbers:")
[1] "First 10 Fibonacci numbers:"
> print(Fibonacci)
 [1]  1  1  2  3  5  8 13 21 34 55
```

Fizz buzz

```
#Write a R program to print the numbers from 1 to 100 and print "Fizz" for multiples of 3, print "Buzz" for multiples of 5, and print "FizzBuz
for (n in 1:50) {
  if (n %% 3 == 0 & n %% 5 == 0) {print("FizzBuzz")}
  else if (n %% 3 == 0) {print("Fizz")}
  else if (n %% 5 == 0) {print("Buzz")}
  else print(n)
}
```

```
[1] 1
[1] 2
[1] "Fizz"
[1] 4
[1] "Buzz"
[1] "Fizz"
[1] 7
[1] 8
[1] "Fizz"
[1] "Buzz"
[1] 11
[1] "Fizz"
[1] 13
[1] 14
[1] "FizzBuzz"
[1] 16
[1] 17
[1] "Fizz"
[1] 19
[1] "Buzz"
[1] "Fizz"
[1] 22
[1] 23
[1] "Fizz"
[1] "Buzz"
[1] 26
[1] "Fizz"
[1] 28
[1] 29
[1] "FizzBuzz"
[1] 31
[1] 32
[1] "Fizz"
[1] 34
[1] "Buzz"
[1] "Fizz"
[1] 37
[1] 38
[1] "Fizz"
[1] "Buzz"
[1] 41
[1] "Fizz"
[1] 43
[1] 44
[1] "FizzBuzz"
[1] 46
[1] 47
[1] "Fizz"
[1] 49
[1] "Buzz"
>
```

Analysis of built in data in R