2. Which function is used to concatenate text values in R. Write a script to concatenate text and numerical values in R

```
Text_1 = "Ram has scored"
Text_2 = 89
Text_3 = "marks"
Text_4 = "Mathematics"

print(paste(Text_1,Text_2,Text_3,Text_4))
```

3. Which function is used to construct a vector in R. Write a script to generate the following list of numerical values with spaces: 3 5 6 9 11 34

```
print(c(3,5,6,9,11,34))
```

4. Suppose you have two datasets A and B. Dataset A has the following data: 1 2 4 5. Dataset B has the following data: 6 7 8 9. Which function is used to combine the data from both datasets into dataset C. Demonstrate the function with the input values and write the output.

```
Dataset_A = c(1,2,4,5)
Dataset_B = c(6,7,8,9)

print(c(Dataset_A,Dataset_B))
```

5. Write the script to sort the values contained in the following vector in ascending order and descending order: (23, 45, 10, 34, 89, 20, 67, 99). Demonstrate the output.

```
tbsv = c(23, 45, 10, 34, 89, 20, 67, 99)
cat("Ascending Order: ", sort(tbsv),"\n")
cat("Descending Order: ", sort(tbsv, decreasing = TRUE))
```

6.

The data analyst of Argon technology Mr. John needs to enter the salaries of 10 employees in R. The salaries of the employees are given in the following table:

Sr. No.	Name of employees	Salaries
1	Vivek	21000
2	Karan	55000
3	James	67000
4	Soham	50000
5	Renu	54000
6	Farah	40000
7	Hetal	30000
8	Mary	70000
9	Ganesh	20000
10	Krish	15000

i. Which R command will Mr. John use to enter these values demonstrate the output
ii. Now Mr. John wants to add the salaries of 5 new employees in the existing table which command he will use to join datasets with new values in R. Demonstrate the output.

```
Employee_Data = data.frame(
names = c("John","Asad","Vishal"),
salary = c(10,20,30)
)

print(Employee_Data)

new_data = data.frame(
names = c("Shivam","Isshan"),
salary = c(40,50)
)

print(rbind(Employee_Data,new_data))
```

7.

7. Consider the following data frame given below

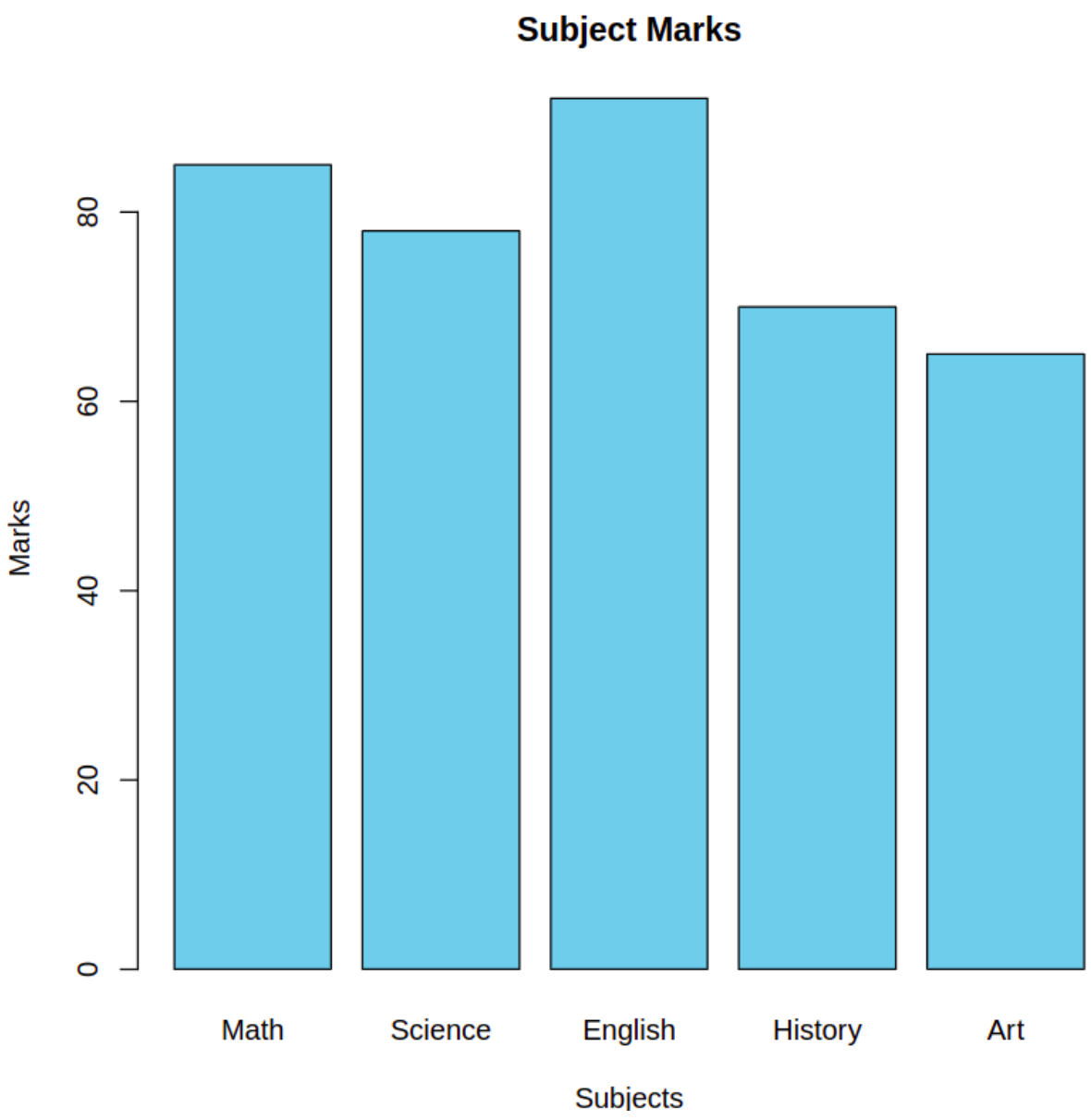
subject	class	marks
1	1	56
2	2	75
3	1	48
4	2	69
5	1	84
6	2	53

i. Create a subset of subjects less than 4 by using subset () function and demonstrate the output.
ii. Create a subset where the subject column is less than 3 and the class equals to 2 by using [ ] brackets and demonstrate the output.

```
marks = data.frame(
subject = c(1,2,3,4,5,6),
class = c(1,2,1,2,1,2),
marks = c(56,75,48,69,84,53)
)

print(marks)

print("subset: Subject less than 4")
print(subset(marks,subject<4))

print("subject column is less than 3 and the class equals to 2")
print(marks[marks$subject <3 & marks$class == 2,]) #idhar end main square
bracket ke pehle comma nahi dalega toh kaam nahi karega
```

8. Write a R program to create a simple bar plot of five subjects marks.

```
# ChatGPT ka Code

subjects = c("Math", "Science", "English", "History", "Art")
marks = c(85, 78, 92, 70, 65)

barplot(marks, names.arg = subjects, col = "skyblue", main = "Subject
Marks",
xlab = "Subjects", ylab = "Marks", border = "black")
```



9. 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.

```
cat("Sequence 20 to 50: ",20:50,"\n")
cat("the mean of numbers from 20 to 60 : ",mean(20:60),"\n")
cat("sum of numbers from 51 to 91 : ",sum(51:91),"\n")
```

10. Write a R program to create two 2x3 matrices and add, subtract, multiply and divide the matrices and print the results.

```
matrix1 <- matrix(1:6, nrow = 2, ncol = 3)
matrix2 <- matrix(7:12, nrow = 2, ncol = 3)

cat('Matrix 1 \n')
print(matrix1)

cat('Matrix 2 \n')
print(matrix2)

addition <- matrix1 + matrix2
subtraction <- matrix1 - matrix2
multiplication <- matrix1 * matrix2
division <- matrix1 / matrix2

print("Addition")
print(addition)
print("subtraction")
print(subtraction)
print("multiplication")
print(multiplication)
print("Division")
print(division)
```

11. Write a R program to rotate a given matrix 90 degree clockwise rotation.

```
print("Rotate a given matrix 90 degree clockwise rotation")
matrix1 <- matrix(1:6, nrow = 2, ncol = 3)
print("Original Matrix")
print(matrix1)
print("Rotated")
print(t(apply(matrix1, 2, rev)))
```

12. Write a R program to get the first 10 Fibonacci numbers

```
fib <- numeric(10)
fib[1] = 0
fib[2] = 1
for (i in 3:10) {
      fib[i] <- fib[i - 1] + fib[i - 2]
}

print(fib)
```

13. Write a R program to find the factors of a given number.

```
number <- 50
factors <- c()
for (i in 1:number) {
      if (number %% i == 0) {
            factors <- c(factors, i)
      }
}

print(factors)
```

14. Write a R program to find the maximum and the minimum value of a given vector.

```
vecte <- 1:60
print(vecte)
max <- 0
min <- vecte[1]
for (i in vecte){
      if(i>max){
            max <- i
      }
      else if (i<min) {
            min <-i
      }
}

cat(max,min,"\n")
```

Or use max and min inbuilt function