RWorksheet_Freires#4b

2024-10-29

Using Loop Function

for() loop

1. Using the for loop, create an R script that will display a 5x5 matrix as shown in Figure 1. It must contain vectorA = [1,2,3,4,5] and a 5 x 5 zero matrix. Hint Use abs() function to get the absolute value

```
vectorA <- c(1, 2, 3, 4, 5)
zero_matrix <- matrix(0, nrow = 5, ncol = 5)

for (i in 1:5) {
  for (j in 1:5) {
  zero_matrix[i, j] <- abs(vectorA[i] - vectorA[j])
  }
}
print(zero_matrix)
```

```
##      [,1] [,2] [,3] [,4] [,5]
## [1,]    0    1    2    3    4
## [2,]    1    0    1    2    3
## [3,]    2    1    0    1    2
## [4,]    3    2    1    0    1
## [5,]    4    3    2    1    0
```

2. Print the string "*" using for() function. The output should be the same as shown in Figure

```
for (i in 1:5) {
  cat(rep('"*"', i), "\n")
}
```

```
## "*"
## "*" "*"
## "*" "*" "*"
## "*" "*" "*" "*"
## "*" "*" "*" "*" "*"
```

3. Get an input from the user to print the Fibonacci sequence starting from the 1st input up to 500. Use repeat and break statements. Write the R Scripts and its output.

```
x <- 0
y <- 1

num <- readline(prompt = "Enter the starting number: ")
```

```
## Enter the starting number:
```

```
3
```

```
## [1] 3
```

```
repeat {
  num <- x + y
  if (num > 500) break
  x <- y
  y <- num
  print(num)
}
```

```
## [1] 1
## [1] 2
## [1] 3
## [1] 5
## [1] 8
## [1] 13
## [1] 21
## [1] 34
## [1] 55
## [1] 89
## [1] 144
## [1] 233
## [1] 377
```

Using Basic Graphics (plot(),barplot(),pie(),hist())

4. Import the dataset as shown in Figure 1 you have created previously.

a. What is the R script for importing an excel or a csv file? Display the first 6 rows of the dataset? Show your codes and its result

```
library(readxl)
data_table <- read_excel("/cloud/project/Worksheet#4/data_table.xlsx")
print(head(data_table))
```

```
## # A tibble: 6 x 3
##   shoe_size height gender
##       <dbl>  <dbl> <chr>
## 1       6.5   66   F
## 2       9     68   F
## 3       8.5   64.5 F
## 4       8.5   65   F
## 5      10.5   70   M
## 6       7     64   F
```

b. Create a subset for gender(female and male). How many observations are there in Male? How about in Female? Write the R scripts and its output.

```
males <- subset(data_table)
females <- subset(data_table)

n_males <- nrow(males)
n_females <- nrow(females)

cat("Number of Male observations: ", n_males, "\n")
```

```
## Number of Male observations:  28
```

```
cat("Number of Female observations: ", n_females, "\n")
```

```
## Number of Female observations:  28
```