RWorksheet_camasa#4b

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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.

```
vectorA <- c(1, 2, 3, 4, 5)

zmat <- matrix(0, nrow = 5, ncol = 5)
rmat <- zmat

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

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

2. Print the string "*" using for() function.

```
a <- 5

for (i in 1:a) {
  r_output <- paste(rep("*", i), collapse = " ")
  cat(r_output, "\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.

```
start <- as.numeric(readline(prompt = "Enter a number: "))

x <- 0
y <- 1

cat("Fibonacci sequence starting from", start, "up to 500:\n")

repeat {
  fib_seq <- x + y

  if (fib_seq > 500) {
    break
  }

  if (fib_seq >= start) {
    cat(fib_seq, "\n")
  }

  x <- y
  y <- fib_seq
}
```

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?

```
data <- read.csv("shoe_sizes.csv")

head(data)
```

```
##   Shoe.size Height Gender Shoe.size.1 Height.1 Gender.1
## 1       6.5   66.0      F        13.0       77        M
## 2       9.0   68.0      F        11.5       72        M
## 3       8.5   64.5      F         8.5       59        F
## 4       8.5   65.0      F         5.0       62        F
## 5      10.5   70.0      M        10.0       72        M
## 6       7.0   64.0      F         6.5       66        F
```

b. Create a subset for gender(female and male). How many observations are there in Male? How about in Female?

```
fdata <- subset(data, Gender == "F")
mdata <- subset(data, Gender == "M")
```

```r
num_female <- nrow(fdata)
num_male <- nrow(mdata)

num_female
```

```
## [1] 9
```

```r
num_male
```

```
## [1] 5
```

c.

```r
gender_count <- table(data$Gender)
barplot(gender_count,
        main = "Number of Males and Females in Household Data",
        col = c("blue", "purple"),
        legend = c("Female", "Male"),
        names.arg = c("Female, Male"),
        ylab = "Count",
        xlab = "Gender",
        beside = TRUE)
```