Worksheet 4b in R

Erl Syron R. Espadon

#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

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

# Create a 5x5 zero matrix
matrix <- matrix(0, nrow = 5, ncol = 5)

# Use for loop to populate the matrix
for (i in 1:5) {
  for (j in 1:5) {
    matrix[i, j] <- abs(i - j) * vectorA[i]
  }
}

# Display the matrix
print(matrix)
```

```
##      [,1] [,2] [,3] [,4] [,5]
## [1,]    0    1    2    3    4
## [2,]    2    0    2    4    6
## [3,]    6    3    0    3    6
## [4,]   12    8    4    0    4
## [5,]   20   15   10    5    0
```

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

```
# Loop for each row
for (i in 1:5) {
  for (j in 1:i) {
    cat("* ")
  }
  cat("\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.

```r
# Get user input for the starting number
start_num <- as.numeric(readline("Enter the starting number for the Fibonacci sequence: "))
```

```
## Enter the starting number for the Fibonacci sequence:
```

```r
a <- 0
b <- 1
repeat {
  cat(a, " ")

  c <- a + b

  a <- b
  b <- c
21
  if (c > 500) {
    break
  }
}
```

```
## 0  1  1  2  3  5  8  13  21  34  55  89  144  233
```