RWorksheet_Malayas#4b.Rmd

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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)
matrixT <- matrix(0, nrow = 5, ncol = 5)
for (i in 1:5) {
  matrixT[i, i] <- vectorA[i]
}
matrixT
```

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

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

```
n <- 5
for (i in 1:n) {
  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.

```
start <- as.integer(readline(prompt = "Enter the starting number: "))
```

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

```r
start <- 1
a <- start
b <- 1
cat(a, b, sep = " ")
```

```
## 1 1
```

```r
repeat {
  next_term <- a + b
  if (!is.na(next_term) && next_term > 500) {
    break
  }
 cat(next_term, " ")
  a <- b
  b <- next_term
  }
```

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

```r
cat("\n")
```