Assignment-6-Matrix-Arithmetic.R

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#1. Matrix Addition & Subtraction  
A <- matrix(c(2, 0, 1, 3), ncol = 2)  
B <- matrix(c(5, 2, 4, -1), ncol = 2)  
  
#A + B  
A\_plus\_B <- A + B  
A\_plus\_B

## [,1] [,2]  
## [1,] 7 5  
## [2,] 2 2

#A - B  
A\_minus\_B <- A - B  
A\_minus\_B

## [,1] [,2]  
## [1,] -3 -3  
## [2,] -2 4

#2. Create Diagonal Matrix  
D <- diag(c(4, 1, 2, 3))  
D

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

#3. Construct a Custom 5x5 Matrix  
##First column  
col1 <- c(3,2,2,2,2)  
  
#Add diagonal matrix with 3s  
diagonal3 <- diag(3,4)  
  
#Add row of ones on top  
newrow <-rbind(rep(1,4), diagonal3)  
  
#combine to make matrix  
new\_matrix <-cbind(col1,newrow)  
  
new\_matrix

## col1   
## [1,] 3 1 1 1 1  
## [2,] 2 3 0 0 0  
## [3,] 2 0 3 0 0  
## [4,] 2 0 0 3 0  
## [5,] 2 0 0 0 3