Matrices

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# All about matrices in R

# Grave Accent

A = matrix(1:10, nrow=5)  
B = matrix(21:30, nrow=5)  
C = matrix(21:40, nrow=2)  
  
A

## [,1] [,2]  
## [1,] 1 6  
## [2,] 2 7  
## [3,] 3 8  
## [4,] 4 9  
## [5,] 5 10

B

## [,1] [,2]  
## [1,] 21 26  
## [2,] 22 27  
## [3,] 23 28  
## [4,] 24 29  
## [5,] 25 30

C

## [,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,10]  
## [1,] 21 23 25 27 29 31 33 35 37 39  
## [2,] 22 24 26 28 30 32 34 36 38 40

dim(A)

## [1] 5 2

dim(C)

## [1] 2 10

A+B

## [,1] [,2]  
## [1,] 22 32  
## [2,] 24 34  
## [3,] 26 36  
## [4,] 28 38  
## [5,] 30 40

A\*B # Vector Multiplication

## [,1] [,2]  
## [1,] 21 156  
## [2,] 44 189  
## [3,] 69 224  
## [4,] 96 261  
## [5,] 125 300

#A\*C #Error in A \* C : non-conformable arrays  
A == B #Check if elements are equal

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

A %\*% t(B) #Matrix Multiplication

## [,1] [,2] [,3] [,4] [,5]  
## [1,] 177 184 191 198 205  
## [2,] 224 233 242 251 260  
## [3,] 271 282 293 304 315  
## [4,] 318 331 344 357 370  
## [5,] 365 380 395 410 425