R Matrices Exercices

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Create 2 vectors A and B where A is (1,2,3) and B is (4,5,6) and create a 2 by 3 matrix from the vectors such that each vector is a row

```
A <- 1:3
B <- 4:6
combined_data <- c(A,B)
mat1 <- matrix(data = combined_data, nrow = 2, byrow = T)
print(mat1)
```

```
##      [,1] [,2] [,3]
## [1,]    1    2    3
## [2,]    4    5    6
```

Create a 3 by 3 matrix consisting of the numbers 1 through 9 using 1:9 directly. Row 1 (1,2,3) Row 2 (4,5,6) Row 3 (7,8,9)

```
mat2 <- matrix(data = 1:9, nrow = 3, byrow = T)
print(mat2)
```

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

Confirm that mat2 is a matrix

```
is.matrix(mat2)
```

```
## [1] TRUE
```

Create a 5 by 5 matrix consisting of the numbers 1-25 and assign it to mat3. Top row should be 1-5

```r
mat3 <- matrix(data = 1:25, nrow = 5, byrow = T)
print(mat3)
```

```
##      [,1] [,2] [,3] [,4] [,5]
## [1,]    1    2    3    4    5
## [2,]    6    7    8    9   10
## [3,]   11   12   13   14   15
## [4,]   16   17   18   19   20
## [5,]   21   22   23   24   25
```

Select the submatrix [[7,8], [12,13]]

```r
mat3[2:3, 2:3]
```

```
##      [,1] [,2]
## [1,]    7    8
## [2,]   12   13
```

Select the submatrix [[19,20], [24,25]]

```r
mat3[4:5, 4:5]
```

```
##      [,1] [,2]
## [1,]   19   20
## [2,]   24   25
```

Find out how to use runif() to create a 4 by 5 matrix consisting of 20 random numbers

```r
help(runif)
```

```
## starting httpd help server ... done
```

```r
mat_random <- matrix(data = runif(20, 0, 100), nrow = 4)
print(mat_random)
```

```
##           [,1]     [,2]      [,3]     [,4]     [,5]
## [1,] 35.107916 63.69526 63.633521 82.00449 84.49707
## [2,] 91.753976 34.88532  7.797199 27.32089 44.71599
## [3,] 12.653232 22.29703  1.450674 44.36294 95.20111
## [4,]  4.480685 30.95262 13.221352 97.44632 41.00645
```