

R Matrices Exercices

Alex Monteil

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1) 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
```

2) 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
```

3) Confirm that mat2 is a matrix

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

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

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

```
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
```

5) Select the submatrix `[[7,8], [12,13]]`

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

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

6) Select the submatrix `[[19,20], [24,25]]`

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

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

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

```
help(runif)
```

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

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

```
##      [,1]      [,2]      [,3]      [,4]      [,5]
## [1,] 22.855904 53.85872 66.39942 70.39673 63.693783
## [2,] 21.778535 19.63904 52.18911 64.84885 17.333860
## [3,]  3.353887 68.88588 79.86053 27.36572  9.563437
## [4,] 55.874679 42.90388 39.68348 69.17401 20.729456
```