STATS 419 Survey of Multivariate Analysis

R Notebook Sandbox

Christopher Mims
(chirs24m@wsu.edu)
[]

Instructor: Monte J. Shaffer

'r format(Sys.time(),'%d %B %Y')'

```
library(devtools); # devtools is required for function source_url() to work
my.source = 'github';
github.path = "https://raw.githubusercontent.com/DataChris24/WSU_STATS419_FALL2020/";
source_url( paste0(github.path,"master/functions/libraries.R") );
source_url( paste0(github.path,"master/functions/functions-imdb.R") );
```

1 Matrix

Create the "rotate matrix" functions as described in lectures. Apply to the example "myMatrix".

```
source_url( paste0(github.path,"master/functions/functions-matrix.R") );
```

```
## SHA-1 hash of file is cd0894af39b148465cbc66fb4fdb77264b6f6e99
```

```
myMatrix = matrix ( c (
                      1, 0, 2,
                      0, 3, 0,
                      4, 0, 5
                      ), nrow = 3, byrow = T);
myMatrix
```

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

1.1 Transpose Matrix

```
transposeMatrix = function(matrix) {
  t(matrix);
}

transMatrix = transposeMatrix(myMatrix);
transMatrix
```

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

1.2 Rotate Matrix

```
rotateMatrix = function(matrix, clockwise = T) {
  if (clockwise) {
    t(apply(matrix, 2, rev));
  }
  else {
    apply(t(matrix), 2, rev);
  }
}

rotMatrix = rotateMatrix(myMatrix);
rotMatrix
```

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

1.3 Rotate Matrix 90 Degrees

```
rotateMatrix90= function(matrix, clockwise = T) {
  rotateMatrix(matrix, clockwise);
}

rot90Matrix = rotateMatrix90(myMatrix)
rot90Matrix
```

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

1.4 Rotate Matrix 180 Degrees

```
rotateMatrix180= function(matrix, clockwise = T) {
  rotateMatrix(
    rotateMatrix(
      matrix));
```

```
}

rot180Matrix = rotateMatrix180(myMatrix)
rot180Matrix
```

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

1.5 Rotate Matrix 270 Degrees

```
rotateMatrix270= function(matrix, clockwise = T) {
  rotateMatrix(
    rotateMatrix(
      rotateMatrix(
        matrix)));
}

rot270Matrix = rotateMatrix270(myMatrix)
rot270Matrix
```

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