Kouvaris_Karanja Q1

Alice Karanja & Peter Kouvaris

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Create the X matrix and print it from SAS, R, and Python:

$$\begin{bmatrix} 4 & 5 & 1 & 2 \\ 1 & 0 & 3 & 5 \\ 2 & 1 & 8 & 2 \end{bmatrix}$$

In SAS

```
proc iml;
X = {4, 5, 1, 2, 1, 0, 3, 5, 2, 1, 8, 2};
print X;
quit;
```

X			
4	5	1	2
1	0	3	5
2	1	8	2

Figure 1:

In R

```
x <- matrix(
  c(4, 1, 2, 5, 0, 1, 1, 3, 8, 2, 5, 2),
  nrow = 3,
  ncol = 4
)
x
```

```
##      [,1] [,2] [,3] [,4]
## [1,]    4    5    1    2
## [2,]    1    0    3    5
## [3,]    2    1    8    2
```

In Python

```
import numpy as np
X = np.matrix([[4,5,1,2],[1,0,3,5],[2,1,8,2]])
print(X)
```

```
## [[4 5 1 2]
##  [1 0 3 5]
##  [2 1 8 2]]
```