Assignment 2
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ECE 309
Feb. 7, 2018

Problem Set 3

Problem Set 3-1:
Enter the matrices:

$$A = \begin{bmatrix} 2 & 3 & 7 \\ 1 & 2 & 0 \\ 4 & 1 & 5 \end{bmatrix} \quad B = \begin{bmatrix} 1 & 0 & 9 \\ 2 & 1 & 4 \\ 3 & 1 & 2 \end{bmatrix}$$

```
% a. Define the row vector a as the first row of matrix A, by selecting
    the elements from A
a = A(1,:)

% b. Define the column vector b as the first column of matrix B, by
     selecting the elements from B
b = B(1,:)

% c. Define scalar c as the element in row 2, column 3 of matrix B,
     by selecting the element from B.
c = B(2,3)

% d. Define the submatrix C as the 2 x 2 upper-left submatrix of A, by
     selecting the elements from A.
C = A(1:2,1:2)

% e. Construct a row vector x, consisting of: 1, 1.08, 1.16, …, 1.88
x = [1:0.08:1.88]

% f. Construct a column vector y that is the transpose of vector x.
x'
```

Results

a)

```
  A =
     2     3     7
     1     2     0
     4     1     5
```

b)

```
  B =
     1     0     9
     2     1     4
     3     1     2
```

c)

```
   a =
      2     3     7
   b =
      1     0     9
   c =
      4
```

d)

```
   C =
       2     3
       1     2
```

e)

```
   x =
  Columns 1 through 6
    1.0000    1.0800    1.1600    1.2400    1.3200    1.4000
  Columns 7 through 12
    1.4800    1.5600    1.6400    1.7200    1.8000    1.8800
```

f)

```
  ans =
    1.0000
    1.0800
    1.1600
    1.2400
    1.3200
    1.4000
    1.4800
    1.5600
    1.6400
    1.7200
    1.8000
    1.8800
```

Problem Set 3-2:

Enter the vectors:

$$x = \begin{bmatrix} 1 \\ 2 \end{bmatrix} \quad y = \begin{bmatrix} 3 \\ 4 \end{bmatrix}$$

```
% a. concatenate x and y so that y is to the left of x
[y,x]

% b. concatenate x and y so that y is underneath x
[x;y]
```

Results

a)

```
ans =
     3     1
     4     2
```

b)

```
ans =
     1
     2
     3
     4
```

Problem Set 3-3:

Create a new matrix, A_new, containing only the 1st and 2nd rows of the given matrix A (from problem 1), by deleting row 3 of A.

```
A = [2,3,7;1,2,0;4,1,5]
A(3,:) = [];

A_new = A
```

Results

```
A =

     2     3     7

     1     2     0

     4     1     5

A_new =

     2     3     7

     1     2     0
```