INAIBO E. ISAIAH/16/ENG04/026   ELECTRICAL/ELECTRONICS ENGINEERING   November 11, 2017
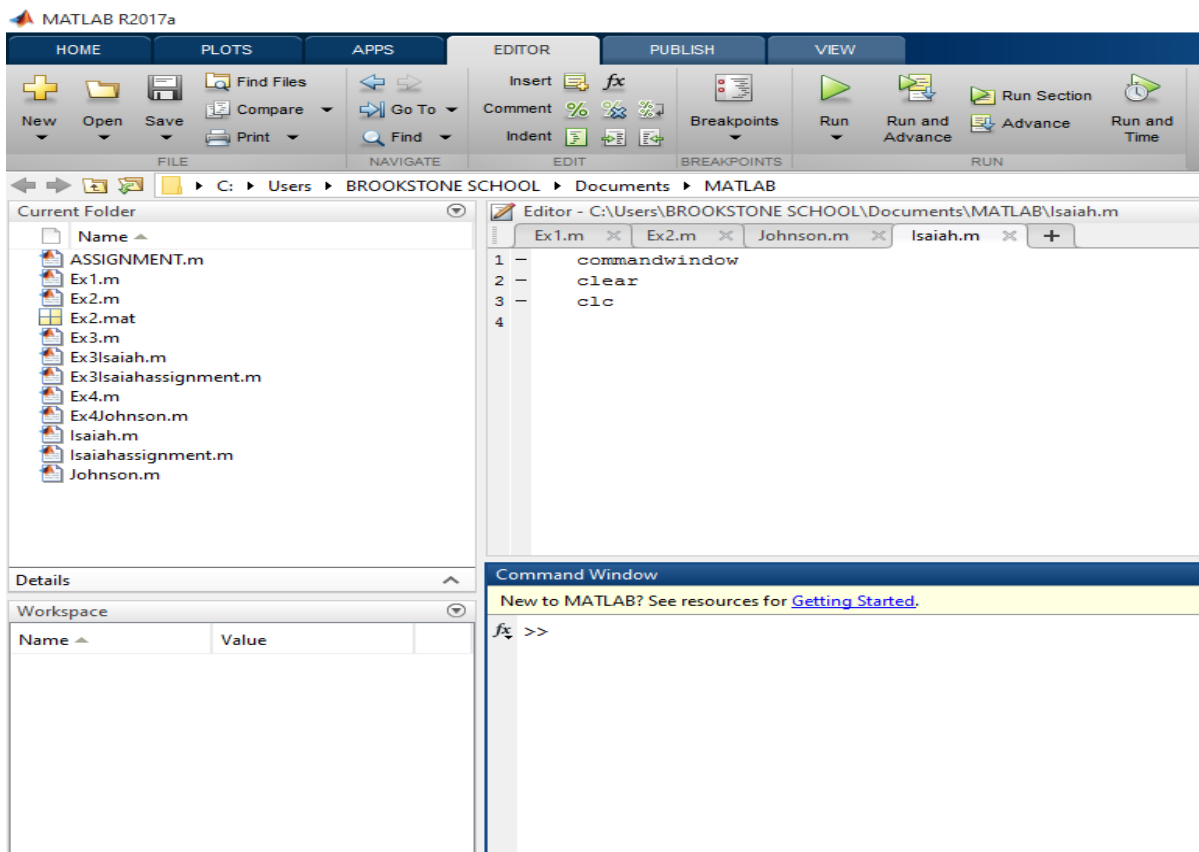
QUESTION 1

There are some variables in the workspace and the command window of MATLAB, and it is desired to clear all of them from the two places. Write the commands that can be used to execute this operation(s).

ANSWER

QUESTION 2

With the aid of MATLAB mfile, find:

  i.   the determinant
 ii.   the transpose
iii.   the inverse(expressed in both decimal and fractional forms) of the matrix given below:

$$A =$$

2	3	7	9	4
3	7	9	12	5
4	8	5	6	9
5	9	2	4	5
6	2	3	7	8

ANSWER

MATLAB R2017a

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Editor - C:\Users\BROOKSTONE SCHOOL\Documents\MATLAB\Isaiah.m

Ex1.m | Ex2.m | Johnson.m | Isaiah.m | Ex3Isaiahassignment.m | +

```matlab
1    commandwindow
2    clear
3    clc
4    A = [2 3 7 9 4; 3 7 9 12 5; 4 8 5 6 9; 5 9 2 4 5; 6 2 3 7 8]
5    ID = det(A);
6    IT = A';
7    I = inv(A);
8    A=sym([2 3 7 9 4; 3 7 9 12 5; 4 8 5 6 9; 5 9 2 4 5; 6 2 3 7 8]);inv(A)
```

Command Window

New to MATLAB? See resources for Getting Started.

```
A =

     2     3     7     9     4
     3     7     9    12     5
     4     8     5     6     9
     5     9     2     4     5
     6     2     3     7     8


ans =

[  1447/765, -1073/765, -239/765,   40/51, -53/255]
[   -67/153,    50/153,    8/153,   -2/51,   -1/51]
[   656/255,  -469/255,  -22/255,   13/17,  -44/85]
[ -1444/765,  1121/765,    8/765,  -31/51, 101/255]
[    -28/45,     17/45,    11/45,    -1/3,    2/15]
```

Current Folder

- ASSIGNMENT.m
- Ex1.m
- Ex2.m
- Ex2.mat
- Ex3.m
- Ex3Isaiah.m
- Ex3Isaiahassignment.m
- Ex4.m
- Ex4Johnson.m
- Isaiah.asv
- Isaiah.m
- Isaiahassignment.m
- Johnson.m

Ex3.m (Script)

Workspace

Name	Value
A	5x5 sym
ans	5x5 sym
I	5x5 double
ID	-765.0000
IT	5x5 double

Command Window

New to MATLAB? See resources for Getting Started.

```
>> ID

ID =

  -765.0000

>> IT

IT =

     2     3     4     5     6
     3     7     8     9     2
     7     9     5     2     3
     9    12     6     4     7
     4     5     9     5     8

>> I

I =

    1.8915   -1.4026   -0.3124    0.7843   -0.2078
   -0.4379    0.3268    0.0523   -0.0392   -0.0196
    2.5725   -1.8392   -0.0863    0.7647   -0.5176
   -1.8876    1.4654    0.0105   -0.6078    0.3961
   -0.6222    0.3778    0.2444   -0.3333    0.1333
```

QUESTION 3

Solve the set of algebraic equations given below using MATLAB mfile.

10x + 4y – 2z = -4

-3w – 17x + y + 2z = 2

W + x + y = 6

8w – 34x + 16y – 10z = 4

ANSWER

```
 9 -      M = [0 10 4 -2; -3 -17 1 2; 1 1 1 0; 8 -34 16 -10]
10 -      B = [-4; 2; 6; 4]
11 -      IM = inv(M);
12 -      S = IM * B;
```

Command Window

New to MATLAB? See resources for Getting Started.

```
    M =

         0     10      4     -2
        -3    -17      1      2
         1      1      1      0
         8    -34     16    -10


    B =

        -4
         2
         6
         4
```

Ex4Johnson.m
Isaiah.m
Isaiahassignment.m
Johnson.m

Ex3.m (Script)

Workspace

Name ▲	Value
A	5x5 double
B	[-4;2;6;4]
I	5x5 double
ID	-765.0000
IM	4x4 double
IT	5x5 double
M	4x4 double
S	[4;-9.7145e-17;2.0000;...]

Command Window

New to MATLAB? See resources for Getting Started.

```
>> IM

IM =

   -0.1786   -0.1020    0.5714    0.0153
    0.0357   -0.0153    0.0357   -0.0102
    0.1429    0.1173    0.3929   -0.0051
   -0.0357    0.1582    0.9643   -0.0612

>> S

S =

    4.0000
   -0.0000
    2.0000
    6.0000
```