CLASS TEST - 2

INTRODUCTION TO COMPUTING

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Question 1:

CODE:

Editor - C:\Users\saman\Documents\ques1.m

unique_element.m | ques1.m | classtest2.m

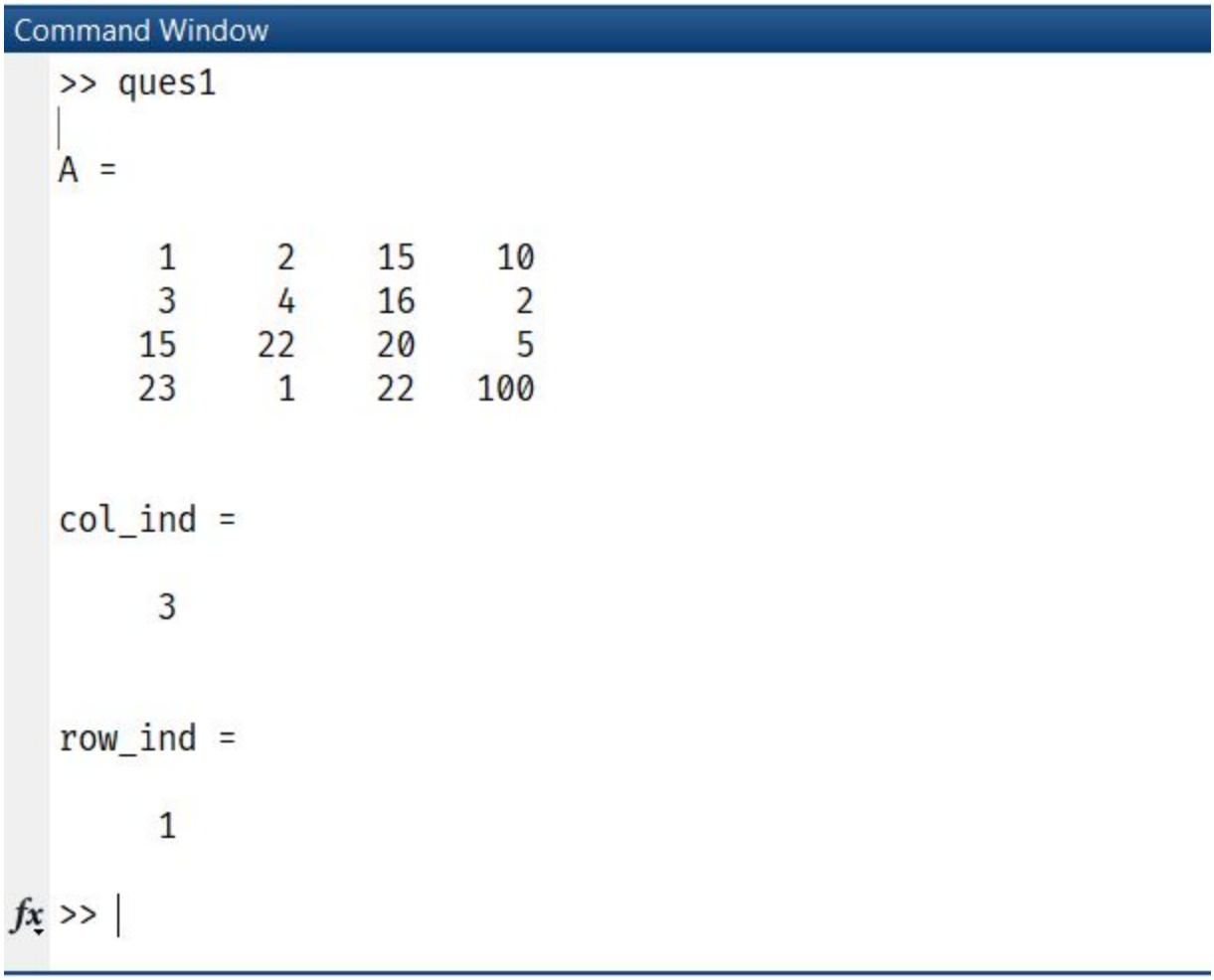
```
A = [1  2  15 10;
     3  4  16  2;
     15 22 20  5;
     23 1  22 100]

[row_ind, col_ind] = unique_element(A)
```

Editor - C:\Users\saman\Documents\unique_element.m

unique_element.m | ques1.m | classtest2.m

```
function [row_ind,col_ind] = unique_element(A)
[col_min,j] = min(A);
[row_max, i] = max(col_min);
row_ind = i;
col_ind = j(1);
end
```

OUTPUT:


Command Window
>> ques1
A =
1 2 15 10
3 4 16 2
15 22 20 5
23 1 22 100
col_ind =
3
row_ind =
1
>>

Question 2:

CODE:

Editor - C:\Users\saman\Documents\ques2.m

classtest2.m | ques2.m

```
n = input('Enter dimension of matrix: ')
A = zeros(n);
A(1,:) = 1;
A(:,1) = 1;

for i=2:1:n
    for j=2:1:n
        if (A(i-1,j) + A(i,j-1) < 40)
            A(i,j) = A(i-1,j) + A(i,j-1);
        else
            A(i,j) = max(A(i-1,j),A(i,j-1));
        end
    end
end
A

```

OUTPUT

Command Window

```
n =

    10


A =

     1     1     1     1     1     1     1     1     1     1
     1     2     3     4     5     6     7     8     9    10
     1     3     6    10    15    21    28    36    36    36
     1     4    10    20    35    35    35    36    36    36
     1     5    15    35    35    35    35    36    36    36
     1     6    21    35    35    35    35    36    36    36
     1     7    28    35    35    35    35    36    36    36
     1     8    36    36    36    36    36    36    36    36
     1     9    36    36    36    36    36    36    36    36
     1    10    36    36    36    36    36    36    36    36

fx >>
```

Question 3:

CODE:

Editor - C:\Users\saman\Documents\ques3.m

classtest2.m | ques3.m

```
1 -   n=1; d=0;
2 -   for t=0:.01:4
3 -       x=5*t-10;
4 -       y=25*t^2-120*t+144;
5 -       d(n)=sqrt(x^2+y^2);
6 -       n=n+1;
7 -   end
8 -   t=0:.01:4;
9 -   [a,b]=min(d);
10 -  disp(['The time at which the object is closest to the origin is ',num2str(t(b)), ' sec'])
11 -  disp(['and the min. distance is ',num2str(a)])
```

OUTPUT:

Command Window

```
>> ques3
The time at which the object is closest to the origin is 2.23 sec
and the min. distance is 1.3581
fx >>
```