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CS 3rd YEAR ; SECTION : "I" ; ROLL NO.: 01
ENROLLMENT NO.: 12019009001127
MODULE : MATLAB [IT WORKSHOP]
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Q1. Evaluate an expression using 'eval' function.

```
>> x = 10;
>> y = 10;
>> eval ('x+y')
ans = 20
>> eval ('x-y')
ans = 0
>> eval('sin(x)')
ans = -0.5440
```

Q2. Evaluate an expression using 'feval' function.

```
>> feval ('sin',[0,1])
ans =

         0    0.8415

>> feval ('sin',[x+y])
ans = 0.9129
>> feval ('sin',[1 : 4])
ans =

    0.8415    0.9093    0.1411   -0.7568
```

Q3. Write a MATLAB script to convert the temperature from Fahrenheit to Kelvin.

```
temp_f = input('Enter the temperature in degree F : ');
temp_k = (5/9) * (temp_f - 32) + 273.15;
fprintf('%6.2f degree F = %6.2f kelvin. \n',temp_f, temp_k);
```

Output :

```
>> assignment

Enter the temperature in degree F : 42
 42.00 degree F = 278.71 kelvin.
```

Q4. Calculate the net force on a ball by the corresponding acceleration.

```
% script file : calculate the force on the ball
% fapp = Applied force
% fg = Force due to gravity
% fnet = Net force
% fnet_mag = Magnitude of net force
% g = acc due to gravity
% m = mass of the ball

% decribing the constants
g = [0 0 -9.81];
m = 2.0;
```

```
% getting the force applied on the ball
fapp = [10 20 5];
fg = m .* g;

% calculating the net force
fnet = fapp + fg;

disp (['The net force on the ball is ' num2str(fnet) ' N.']);

fnet_mag = sqrt(fnet(1)^2 + fnet(2)^2 + fnet(3)^2);
disp (['Magnitude of the net force is ' num2str(fnet_mag) ' N.']);

% Get the acc
a = fnet ./ m;
disp (['The acc of the ball is ' num2str(a) ' m/s^2.']);
```

Output :

```
The net force on the ball is 10           20       -14.62 N.
Magnitude of the net force is 26.716 N.
The acc of the ball is 5           10        -7.31 m/s^2.
```

Q5. Determine if the pattern is in the string using 'contain' function.

```
str1 = ["greater Kolkata1444","University 404D", "B.Tech CSE12019001127 3d"];
pat=digitsPattern(1);
B=count(str1,pat)
% Finding how many digits are there in the string

pat1 = lettersPattern(1);
C=count(str1,pat1)
% Finding how many letters are there in the string

pat2 = digitsPattern + lettersPattern(1);
D = count(str1,pat2)
% finding the digits and letters in a combined manner where only 1 digit is
% combined with the letter
```

Output :

```
B =


     4     3    12



C =


    14    11     9



D =


     0     1     1
```

Q6. Count the occurrence of the pattern.

```
str = ["red green red red blue blue green";
    "green red blue green green blue"];
count (str, "red")
% Counting the occurance of the "red" in the given string
```

Output :

```
ans =


     3
     1
```

--- O ---