LAB #14

**Objective:** **To learn Control Flow in MATLAB**

**Exercise:** **Show the output of all the given Tasks:**

### TASK#01(while loop):

**Source code:**

```
% script M-file example1.m
count = 0;
i = 1;
while count < 10
if isprime(i)
disp(i);
count = count + 1;
end;
i = i + 1;
end;
```

**Output:**

Lab14t1

```
   2

   3

   5

   7

  11

  13

  17

  19

  23

  29
```

### TASK#02(for loop):

**Source Code:**

```
% script M-file example2.m
for i = 1:5
x(i) = i;
sprintf('x(i)=%d',x(i))
y(i) = x(i)^2;
sprintf('y(i)=%d',y(i))
end;
```

**Output:**
Lab14t2

| :: Name | :: Value | :: Size | :: Class |
|---------|----------|---------|----------|
| i | 5 | 1×1 | double |
| x | [1,2,3,4,5] | 1×5 | double |
| y | [1,4,9,16,25] | 1×5 | double |

**Task#03(Switch case);**

**Source Code:**

question = 'Are you Sure you want to Quit?';
button = questdlg(question,'Exit Request','Yes','No','No');
switch button
case 'No'
quit cancel; % how to cancel quitting!
case 'Yes'
disp('Exiting MATLAB');
save
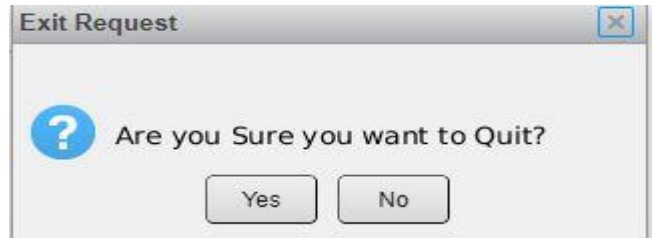quit force;    % 'Yes' lets script and MATLAB end.
end

**Output:**

Lab14t3

Exiting MATLAB

Saving to: /MATLAB Drive/matlab.mat

**Exit Request**

Are you Sure you want to Quit?

Yes   No

**Task#04:**

- **Write a program that generate table of any number using for loop and while loop.**

**Example: 2*1=2**

**Source Code:**

```
display('Tables of user input numbers:');
no=input('Enter the number for which the table you want to display:');
display('By for loop');
for i = 1:10
display(no*i);
end

display('Tables of user input numbers:');
no=input('Enter the number for which the table you want to display:');
display('By while loop');
j=1;
while j< 11
display(no*j);
j=j+1;
end
```

**Output:**

| lab14t4 | lab14t4a |
|---|---|
| Tables of user input numbers: | Tables of user input numbers: |
| Enter the number for which the table you want to display: | Enter the number for which the table you want to display: |
| 3 | 4 |
| By for loop | By while loop |
|     3 |     4 |
|     6 |     8 |
|     9 |    12 |
|    12 |    16 |
|    15 |    20 |
|    18 |    24 |
|    21 |    28 |
|    24 |    32 |
|    27 |    36 |
|    30 |    40 |

- **Write a program that generate a factorial of any number using for loop and while loop.**
  **Example: 5! = 120**
  **Souce code:**

```
display('Factorial of user input number:');
no=input('Enter the number:');
display('By while loop');
factorial =1;
i=1;
while i < (no+1)
factorial=factorial*i;
i=i+1;
end
display('Factorial is:');
display(factorial);

display('Factorial of user input number:');
no=input('Enter the number:');
display('By for loop');
factorial =1;
for i=1:no
factorial=factorial*i;
end
display('Factorial is:');
display(factorial);
```

**Output:**

| Lab14t4c | Lab14t4d |
|---|---|
| Factorial of user input number: | Factorial of user input number: |
| Enter the number: | Enter the number: |
| 5 | 5 |
| By while loop | By for loop |
| Factorial is: | Factorial is: |
| factorial = | factorial = |
| 120 | 120 |
|  |  |