```
%For Loop examples
```

```
%1:Basic loop
for i=1:10
    disp(i)
end
```

```
     1

     2

     3

     4

     5

     6

     7

     8

     9

    10
```

```
%2:loop with custom value
for i=randi([1,100],3,3)
    disp(i)
end
```

```
    97
    16
    98

    96
    49
    81

    15
    43
    92
```

```
%3:Loop over a vector
Places={'Dhaka', 'Khulna','Rajshahi', 'Sylhet'};
for i=1:length(Places)
    disp(Places{i})
end
```

```
Dhaka
Khulna
Rajshahi
Sylhet
```

```
%Loop with Enumerate
Name = {'Sakib', 'Zarin','Tahseen','Mahfuz'};
for i = 1:length(Name)
   disp(['roll', num2str(i),':',Name{i}]);
end
```

```
roll1:Sakib
roll2:Zarin
roll3:Tahseen
roll4:Mahfuz
```

```
%5:Nested Loop
for i = 1:4
    for j = 1:2
        disp(['Semester','(', num2str(i), '-', num2str(j), ')']);
    end
    end
```

```
Semester(1-1)
Semester(1-2)
Semester(2-1)
Semester(2-2)
Semester(3-1)
Semester(3-2)
Semester(4-1)
Semester(4-2)
```

```
%6:loop using break
    for i = 1:10
    if i == 5
        break;
    end
    disp(i);
end
```

```
     1

     2

     3

     4
```

```
%7:calculating the mean value
A=randi([1,10],1,10)
```

```
A = 1×10
     5     7     7     3     5     1    10     2     2     4
```

```
sum=0;
for i=1:length(A)
    sum=sum+A(i);
    mean=sum/length(A);
```

```
end
disp(mean)
```

```
    4.6000
```

```
%8 Sinx
n=10
```

```
n = 10
```

```
x=90
```

```
x = 90
```

```
a=x*(pi/180);
result=0
```

```
result = 0
```

```
for i=0:n-1
    sum=(((-1)^i)/(factorial(2*i+1)))*(a^(2*i+1));
    result=result+sum;
end
disp(result)
```

```
    1
```

```
%9Fibonacci series
n=10
```

```
n = 10
```

```
a=0
```

```
a = 0
```

```
b=1
```

```
b = 1
```

```
for i=1:n
    c=a+b
    a=b;
    b=c;
end
```

```
c = 1
c = 2
c = 3
c = 5
c = 8
c = 13
c = 21
c = 34
c = 55
c = 89
```

```
disp(c)
```

```
    89
```

```

```

```
%10Compound Interest
p=1000
```

```
p = 1000
```

```
r=100
```

```
r = 100
```

```
t=5
```

```
t = 5
```

```
for i=1:t
    CI=(p+(p*r));
    p=CI;
end
disp(CI);
```

```
   1.0510e+13
```

```

```