MATLAB - THE NESTED LOOPS

MATLAB allows to use one loop inside another loop. Following section shows few examples to illustrate the concept.

Syntax

The syntax for a nested for loop statement in MATLAB is as follows —

```
for m = 1:j
   for n = 1:k
      <statements>;
   end
end
```

The syntax for a nested while loop statement in MATLAB is as follows —

```
while <expression1>
   while <expression2>
      <statements>
   end
end
```

Example

Let us use a nested for loop to display all the prime numbers from 1 to 100. Create a script file and type the following code —

```
for i=2:100
   for j=2:100
      if(~mod(i,j))
         break; % if factor found, not prime
      end
   end
   if(j > (i/j))
      fprintf('%d is prime\n', i);
   end
end
```

When you run the file, it displays the following result —

```
2 is prime
3 is prime
5 is prime
7 is prime
11 is prime
13 is prime
17 is prime
19 is prime
23 is prime
29 is prime
31 is prime
37 is prime
41 is prime
43 is prime
47 is prime
53 is prime
59 is prime
61 is prime
67 is prime
71 is prime
73 is prime
```

```
79 is prime
83 is prime
89 is prime
97 is prime
```