

TUTORIALS – 8

(MODULE – 2)

TOPIC: NESTED LOOP

1.Floyd's triangle

Enter the number of rows for Floyd's Triangle: 4

Floyd's Triangle with 4 rows:

1

2 3

4 5 6

7 8 9 10

main.c



Save

Run

Output

```
1 //MODULE - 2, TUTORIALS - 8
2 //1.Floyd's triangle
3 //Enter the number of rows for Floyd's Triangle: 4
4 //Floyd's Triangle with 4 rows:
5 //1
6 //2 3
7 //4 5 6
8 //7 8 9 10
9
10 #include <stdio.h>
11 int main()
12 {
13     int rows, num=1;
14     printf("Enter the no.of rows:");
15     scanf("%d", &rows);
16
17     for(int i=0;i<rows;i++){
18         for(int j=0;j<=i; j++){
19             printf("%d",num);
20             num++;
21         }
22         printf("\n");
23     }
24     return 0;
25 }
```

/tmp/aot40POXTs.o
Enter the no.of rows:4
1
23
456
78910

=== Code Execution Successful ===

2.Create this pattern

Enter the number of rows: 5

Pattern:

**

*

main.c



Save

Run

Output

```
1 //MODULE - 2, TUTORIALS - 8
2 //2.Create this pattern
3 //*****
4 //****
5 //***
6 //**
7 //*
8 #include <stdio.h>
9 int main() {
10     int rows;
11
12     printf("Enter the no.of rows:");
13     scanf("%d", &rows);
14
15     for(int i=0; i<rows; i++) {
16         for(int j=0; j<rows-i; j++) {
17             printf("*");
18         }
19         printf("\n");
20     }
21     return 0;
22 }
23
24
```

/tmp/1srUYroTbY.o

Enter the no.of rows:5

**

*

=== Code Execution Successful ===

3. Use Nested for loops for checking prime numbers within a certain range.

main.c	Output
<pre>1 #include <stdio.h> 2 int main() 3 { 4 int lower, upper; 5 6 printf("Enter the Lower and Upper Limit:"); 7 scanf("%d %d", &lower, &upper); 8 9 printf("Prime numbers b/w %d and %d are:", lower, upper); 10 11 for(int i=lower; i<=upper; i++){ 12 int factor=0; 13 //check if i is PRIME 14 for(int j=1; j<=i; j++){ 15 if(i%j==0){ 16 factor++; 17 } 18 } 19 20 if(factor==2){ 21 printf("%d ", i); 22 } 23 } 24 printf("\n"); 25 return 0; 26 } 27</pre>	<pre>/tmp/NzrTM2VsE6.o Enter the Lower and Upper Limit:2 10 Prime numbers b/w 2 and 10 are:2 3 5 7 === Code Execution Successful ===</pre>

4. Print the following diamond pattern

```
*
***
*****
*****
*****
*****
***
*
```

main.c

```
1  #include <stdio.h>
2  int main()
3  {
4      int i,j,spaces,rows;
5      printf("Enter the number of rows:");
6      scanf("%d", &rows);
7
8      //Upper Half
9      spaces = rows - 1;
10     for(i=1; i<=rows; i++) {
11         for (j=1; j<=spaces; j++) {
12             printf(" ");
13         }
14         spaces--;
15         for(j=1; j<=2*i-1; j++) {
16             printf("*");
17         }
18         printf("\n");
19     }
20 }
```

```
21     //Lower Half
22     spaces=1;
23     for(i=1; i <= rows - 1; i++) {
24         for(j=1; j <= spaces; j++) {
25             printf(" ");
26         }
27         spaces++;
28         for(j=1; j<=2*(rows-i)-1; j++) {
29             printf("*");
30         }
31         printf("\n");
32     }
33
34     return 0;
35 }
36
```

Output

```
Enter the number of rows:10
```

```
=== Code Execution Successful ===
```