



National University of Sciences & Technology (NUST)
Baluchistan Campus (NBC), Quetta

Academic Year 2022

Department: Computer Science

Instructor: Sir Rozi Khan

Name of Assignment: Nested Loops

Full Name: Muhammad

Subject: Fundamental of programming (Lab)

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Section: 2021

CMS ID: 391855

Date of Submission: 24/02/2022

Submitted to Sir Rozi Khan.

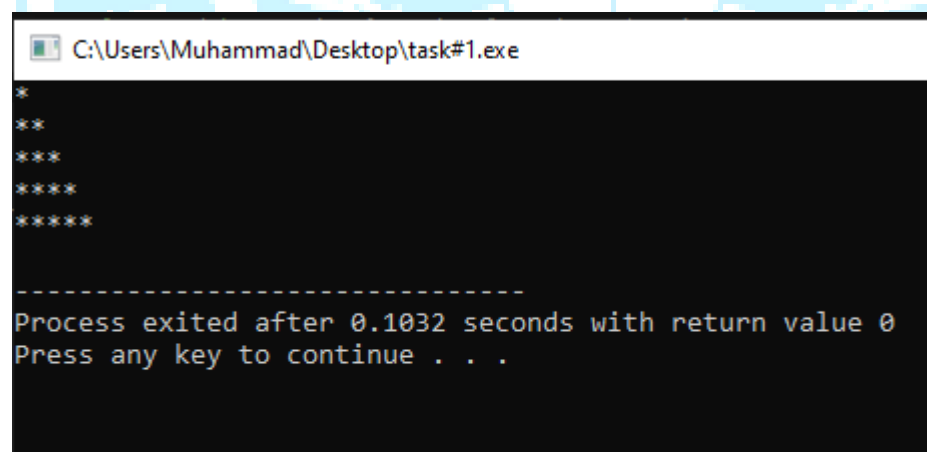
Task#1: Print the following patterns using loop:

*
**

Source Code's screenshot:

```
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      for (int i=0; i<5; i++) {
6          for (int j=0; j<=i; j++) {
7              cout << " * ";
8          }
9          cout << endl;
10     }
11 }
```

Output:



```
C:\Users\Muhammad\Desktop\task#1.exe
*
**
***
****
*****

-----
Process exited after 0.1032 seconds with return value 0
Press any key to continue . . .
```

Task#2 Write a Program to print the following pattern.

*



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*

Source Code's Screenshot and output:

```
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int i = 0;
6     while(i < 9) {
7         for (int j = 0; j <= i; j++) {
8             cout << " * ";
9         }
10        i += 2;
11        cout << endl;
12    }
13    for (int i = 1; i <= 9; i += 2) {
14        for (int j = i; j <= 9; j++) {
15            cout << " * ";
16        }
17        cout << endl;
18    }
19 }
```

Select C:\Users\Muhammad\Desktop\task#2.exe

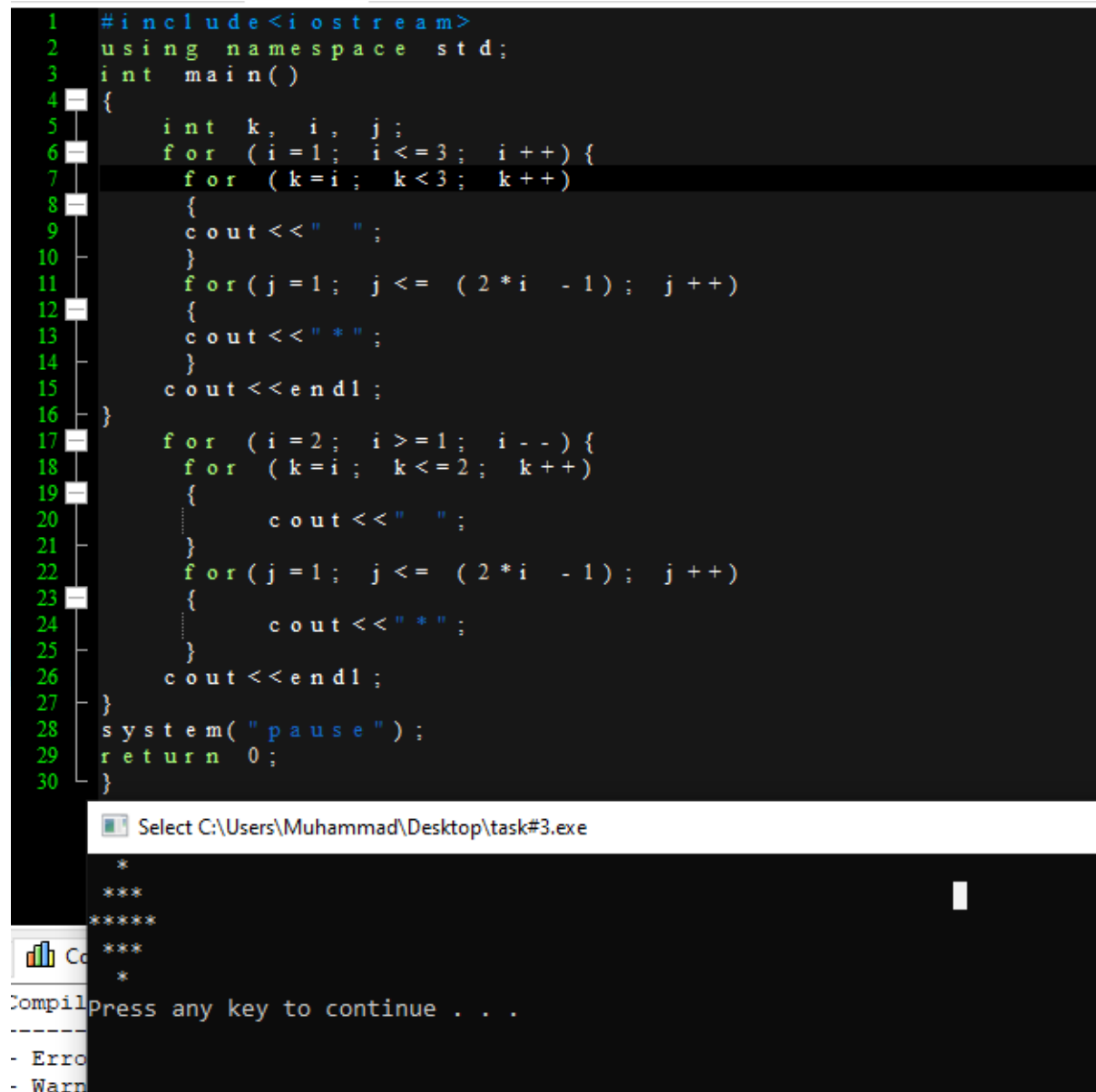
```
*
***
*****
*****
*****
*****
*****
*****
***
*
```

Task#3 Write a program to print the following pattern using nested loop.

*

*

Source Code's Screenshot and output:



The screenshot shows a C++ IDE with a dark theme. The source code is as follows:

```
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int k, i, j;
6     for (i = 1; i <= 3; i++) {
7         for (k = i; k < 3; k++)
8         {
9             cout << " ";
10        }
11        for (j = 1; j <= (2 * i - 1); j++)
12        {
13            cout << " * ";
14        }
15        cout << endl;
16    }
17    for (i = 2; i >= 1; i--) {
18        for (k = i; k <= 2; k++)
19        {
20            cout << " ";
21        }
22        for (j = 1; j <= (2 * i - 1); j++)
23        {
24            cout << " * ";
25        }
26        cout << endl;
27    }
28    system("pause");
29    return 0;
30 }
```

The output window shows the following pattern:

```

*
***
*****
***
*
Press any key to continue . . .
```

Task # 4 Write a program to print the given pattern.

1010101

10101

101

1

Source Code's Screenshot and output:



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```
1  #include<iostream>
2  #include<string>
3  using namespace std;
4  int main()
5  {
6      int i, j;
7      for (i = 4; i >= 1; i--) {
8          for (j = 4 - i; j > 0; j--) {
9              cout << " ";
10         }
11         for (j = 0; j < 2 * i - 1; j++) {
12             if (j % 2 == 1) {
13                 cout << "0 ";
14             } else {
15                 cout << "1 ";
16             }
17         }
18         cout << "\n";
19     }
20 }
```

C:\Users\Muhammad\Desktop\task#4.exe

```
1010101
10101
101
1
```

Process exited after 0.09762 seconds with return value 0
Press any key to continue . . .

PAKISTAN

```

1  #include<iostream>
2  #include<string>
3  using namespace std;
4  int main()
5  {
6      int i, j;
7      for (i = 4; i >= 1; i --) {
8          for (j = 4 - i; j > 0; j --) {
9              cout << " ";
10         }
11         for (j = 0; j < 2 * i - 1; j++) {
12             if (j % 2 == 1) {
13                 cout << "0 ";
14             } else {
15                 cout << "1 ";
16             }
17         }
18         cout << "\n";
19     }
20 }

```

C:\Users\Muhammad\Desktop\task#4.exe

```

1010101
10101
101
1

```

 Process exited after 0.09762 seconds with return value 0
 Press any key to continue . . .

