



C++ Assignment Solutions | Pattern Printing - 1 | Week 3

1. Print the following pattern

```
1 1 1 1
2 2 2 2
3 3 3 3
4 4 4 4
```

Solution:

```
#include <iostream>
using namespace std;

int main() {

    int n;
    cin >> n;

    for(int i = 1; i <= n; ++i) {
        for(int j = 1; j <= n; ++j) {
            cout << i << " ";
        }
        cout << endl;
    }

    return 0;
}
```

2. Print the following pattern

Input: n = 4

Output:

```
1 2 3 4
1 2 3
1 2
1
```

Solution:

```
#include <iostream>
using namespace std;

int main() {

    int n;
    cin >> n;

    for(int i = 1; i <= n; ++i) {
        for(int j = 1; j <= n-i+1; ++j) {
            cout << j << " ";
        }
        cout << endl;
    }

    return 0;
}
```

3. Print the following pattern

Input: n = 4

Output:

A

A B

A B C

A B C D

Solution:

```
#include <iostream>
using namespace std;

int main() {

    int n;
    cin >> n;

    for(int i = 1; i <= n; ++i) {
        for(int j = 1; j <= i; ++j) {
            cout << (char)('A'+j-1) << " ";
        }
        cout << endl;
    }

    return 0;
}
```

4. Print the following pattern

Input: n = 4

Output:

1

A B

1 2 3

A B C D

1 2 3 4 5

Solution:

```

#include <bits/stdc++.h>

int main() {

    int n;
    cin >> n;

    for(int i = 1; i <= n; ++i) {
        if(i % 2 == 1)
            for(int j = 1; j <= i; ++j) {
                cout << j << " ";
            }
        else
            for(int j = 1; j <= i; ++j) {
                cout << (char) ('A' + j - 1) << " ";
            }
        cout << endl;
    }

    return 0;
}

```

5. Print the following pattern

Input n = 4

Output:

```

*
**
***
****
***
**
*

```

Solution:

```
#include <bits/stdc++.h>

int main() {

    int n;
    cin >> n;

    // Printing upper triangle
    for(int i = 0; i < n; ++i) {
        for(int j = 0; j <= i; ++j) {
            cout << "* ";
        }
        cout << endl;
    }

    // Printing lower triangle
    for(int i = 0; i < n-1; ++i) {
        for(int j = 0; j < n - i - 1; ++j) {
            cout << "* ";
        }
        cout << endl;
    }
}
```

6. Print the following pattern

Sample Input : m = 4, n = 6

Sample Output :

* *

* *

Solution:

```

#include <iostream>
using namespace std;

int main() {

    int m, n;
    cin >> m >> n;

    for(int i = 0; i < m; ++i) {
        for(int j = 0; j < n; ++j) {
            if(i == 0 || j == 0 || i == m-1 || j == n-1) {
                cout << "* ";
            } else {
                cout << " ";
            }
        }
        cout << endl;
    }

    return 0;
}

```

7. Print the following pattern

Sample Input : n = 4

Output :

```

****
****
****
****

```

Solution:

```

#include <iostream>
using namespace std;

int main() {

    int n;
    cin >> n;

    for(int i = 0; i < n; ++i) {
        for(int j = 0; j < n-i-1; ++j) {
            cout << " ";
        }
        for(int j = 0; j < n; ++j) {
            cout << "* ";
        }
        cout << endl;
    }

    return 0;
}

```

8. Print the following pattern

Sample Input : n= 4

Output :

1

1 2

1 2 3

1 2 3 4

Solution:

```

#include <iostream>
using namespace std;

int main() {

    int n;
    cin >> n;

    for(int i = 0; i < n; ++i) {
        for(int j = 0; j < n-i-1; ++j) {
            cout << " ";
        }
        for(int j = 1; j <= i+1; ++j) {
            cout << j << " ";
        }
        cout << endl;
    }

    return 0;
}

```

9. Print the following pattern

Input : n = 4

Output :

A

A B

A B C

A B C D

Solution:


```

#include <iostream>
using namespace std;

int main() {

    int n;
    cin >> n;

    for(int i = 0; i < n; ++i) {
        for(int j = 0; j < n-i-1; ++j) {
            cout << " ";
        }
        for(int j = 1; j <= i+1; ++j) {
            cout << (char)('A' + j - 1) << " ";
        }
        cout << endl;
    }

    return 0;
}

```

10. Print the following pattern

Input: n = 4

Output:

1

2 1

3 2 1

4 3 2 1

Solution:

```

#include <iostream>
using namespace std;

int main() {

    int n;
    cin >> n;

    for(int i = 0; i < n; ++i) {
        for(int j = 0; j < n-i-1; ++j) {
            cout << " ";
        }
        for(int j = i+1; j >= 1; --j) {
            cout << j << " ";
        }
        cout << endl;
    }

    return 0;
}

```

11. Print the following pattern

Input: n = 4

Output:

```

    *
  **
 ***
****
 ***
  **
    *

```

Solution:

```
#include <bits/stdc++.h>

int main() {

    int n;
    cin >> n;

    // Printing upper triangle
    for(int i = 0; i < n; ++i) {
        for(int j = 0; j < n-i-1; ++j) {
            cout << " ";
        }
        for(int j = 0; j <= i; ++j) {
            cout << "* ";
        }
        cout << endl;
    }

    // Printing lower triangle
    for(int i = 0; i < n-1; ++i) {
        for(int j = 0; j <= i; ++j) {
            cout << " ";
        }
    }
}
```

Note:- Please try to invest time doing the assignments which are necessary to build a strong foundation. Do not directly Copy Paste using Google or ChatGPT. Please use your brain 😊.
