SELFLESS(Freshers job) imp amcat coading quetions..very importnt for cgi.

Notebook:	<Inbox>		
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```
N : 5
1*2*3*4*5
11*12*13*14*15
21*22*23*24*25
16*17*18*19*20
6*7*8*9*10
```

```
import java.util.Scanner;

public class TestClass{

	public static void main(String[] args) {
		TestClass testClass = new TestClass();

		int n;
		System.out.println("Enter the value of N :");
		Scanner in = new Scanner(System.in);
		n = in.nextInt();
		System.out.println("N : "+n);

		testClass.printPattern(n);
	}

	private void printPattern(int num) {

		int row=1,i=1,count =1;

		String s ="";


		for(row=1,count=1;(row>0)|(num>=count);) {

			if(count<=num) {
				s=s+i+"*";
				i++;
				count++;
				continue;
			}

			s=s.substring(0, s.length()-1);


			if(row%2==0 && row<=num && num>0) {
				System.out.println(s);
				s ="";
				count=1;
				row = row-2;
				i=((row-1)*num)+1;
				continue;
			}
```

```
                else if(row%2!=0 && row<=num-2) {
                        System.out.println(s);
                        s ="";
                        count=1;
                        row = row+2;
                        i=((row-1)*num)+1;
                        continue;
                }

                System.out.println(s);
                s ="";
                count=1;
                row = row+((num%row)*2)-1;
                i=((row-1)*num)+1;


            }

        }

}
```

Sort elements by frequency

```
Input:-1,2,2,3,3,3,4,4,5,5,5,5,6,6,6,7,8,9,10
output:-5 5 5 5 3 3 3 6 6 6 2 2 4 4 1 7 8 9 10
import java.util.*;

public class GFG {

    // Driver Code
    public static void main(String[] args)
     {

        // Declare and Initialize an array
        int[] array = {1,2,2,3,3,3,4,4,5,5,5,5,6,6,6,7,8,9,10};

         Map<Integer, Integer> map = new HashMap<>();
         List<Integer> outputArray = new ArrayList<>();

        // Assign elements and their count in the list and map
        for (int current : array) {
            int count = map.getOrDefault(current, 0);
            map.put(current, count + 1);
            outputArray.add(current);
         }

        // Compare the map by value
         SortComparator comp = new SortComparator(map);

        // Sort the map using Collections CLass
         Collections.sort(outputArray, comp);

        // Final Output
        for (Integer i : outputArray) {
             System.out.print(i + " ");
         }
     }
}
```

```
class SortComparator implements Comparator<Integer> {
    private final Map<Integer, Integer> freqMap;


     SortComparator(Map<Integer, Integer> tFreqMap)
     {
         this.freqMap = tFreqMap;
     }


    @Override
    public int compare(Integer k1, Integer k2)
     {


         int freqCompare = freqMap.get(k2).compareTo(freqMap.get(k1);

         int valueCompare = k1.compareTo(k2);

         if (freqCompare == 0)
             return valueCompare;
         else
             return freqCompare;
     }
}
```

==========

```
1
2*3
4*5*6
7*8*9*10
7*8*9*10
4*5*6
2*3
1
```

---

code:-

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

using namespace std;

int main()
{
int rows,i,j,cnt=1;
cin>>rows;
//make 2d array
int arr[2*rows][rows];

int n = (2*rows)-1;

for(i=0;i<rows;i++)
{
for(j=0;j<=i;j++)
{
//here we will be assigning first and corresponding last row simultaneously
arr[i][j] = cnt;
arr[n][j] = cnt;
cnt++;
}
n= n-1;
```

```
        }

        int col = 2*rows-1;

        for(i=0;i<2*rows;i++)
        {
        for(j=0;j<=i;j++)
        {
        if(i<rows){
        if(i==j)
        cout<<arr[i][j];
        else
        cout<<arr[i][j]<<"*";
        }

        else if(j<=col){
        if(col==j)
        cout<<arr[i][j];
        else
        cout<<arr[i][j]<<"*";
        }
        }
        col--;
        cout<<endl;
        }
        return 0;
}
```

==========

```
3
44
555
6666
6666
555
44
3
```

---

sol

```
#include<iostream>
using namespace std;
int main()
{
    int h,s,i,j,k,val;
    cout<<"Enter height of first half and starting element:\n";
    cin>>h>>s;
    for(i=0;i<2*h;i++)
    {
        if(i<h)
        {
            for(j=0;j<=i;j++)
            {
                cout<<s;
            }
            cout<<endl;
            s++;
            val=s-1;
```

```
        }
        else
        {
            for(k=i;k<2*h;k++)
            {
                cout<<val;
            }
            cout<<endl;
            val--;
        }
    }
    return 0;
}
```

==========

```
1
3*2
4*5*6
10*9*8*7
11*12*13*14*15
```

==========

```
#include<iostream>
using namespace std;
int main()
{
    int i,j,n,k=0;
    cin>>n;//input-height of the pattern
    for(i=1;i<=n;i++)
    {
        if(i%2!=0)
            k=k+i;
        else
            k=k+i-1;
        for(j=1;j<=2*i-1;j++)//loop for printing the pattern
        {
            if(j%2==0)
                cout<<"*";
            else
            {
                if(i%2==0)
                    cout<<k--;
                else
                    cout<<k++;
            }
        }
        cout<<endl;//move to next line after printing each row
    }
    return 0;
}
```

==========

```
1112
```

```
3222
3334
5444
```

==========

```
#include<bits/stdc++.h>
using namespace std;
int main()
{
    int n,a=0;
    cin>>n;
    for(int i=1;i<=n;i++)
    {
        if(i%2)
        {
            ++a;
            for(int j=1;j<n;j++)
                cout<<a;
            cout<<++a;
        }
        else{
            cout<<++a;
            --a;
            for(int j=1;j<n;j++)
                cout<<a;
        }
        cout<<endl;
    }
    return 0;
}
```

==========