



CSE3032 - Competitive Programming

WIN SEM (2022-2023) AMR

Class Number: AP2022236001007

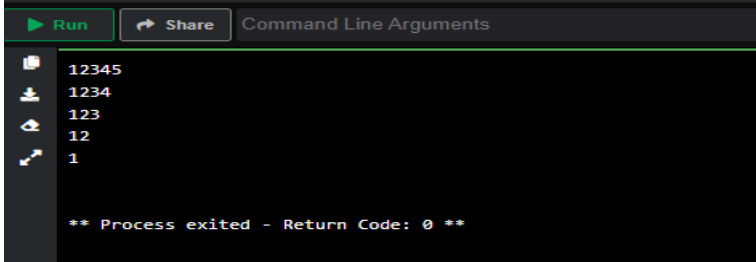
Slot: L11+L12+L19+L20 ASSIGNMENT - I

Last Date for Submission: Wednesday (18-01-2023)

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Reg No: 20BCI7076

Write the program using (C / C++ / Java / Python) to print the following patterns.

S.No	Pattern
1	<div><div>12345 1234 123 12 1</div><div><b>Code:</b><pre>public class Main{     public static void main(String [] args){         int num=5;         for(int i=5;i&gt;=1;--i){             for(int j=1;j&lt;=i;++j){                 System.out.print(j);             }             System.out.println();         }     } }</pre></div><div><b>Output:</b></div></div>

2

```

      ☆
    ☆ ☆ ☆
  ☆ ☆ ☆ ☆ ☆
☆ ☆ ☆ ☆ ☆ ☆ ☆
☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

```

Code:

```
import java.util.*;

public class Main{

    public static void main(String [] args){

        int n=5,k=0;
        for(int i=1;i<=n;++i,k=0){
            for(int j=1;j<=n-i;++j){
                System.out.print(" ");
            }
            while(k!=2*i-1){
                System.out.print("*");
                ++k;
            }
            System.out.println();
        }
    }
}
```

Output:

```

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

...Program finished with exit code 0
Press ENTER to exit console.

```

---

3

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

Code:

```
import java.util.*;
public class Main{
    public static void main(String [] args){
        int n=5,temp=1;
        for(int i=1;i<=n;i++){
```

Output:

```
...Program finished with exit code 0
Press ENTER to exit console.
```

```

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

```

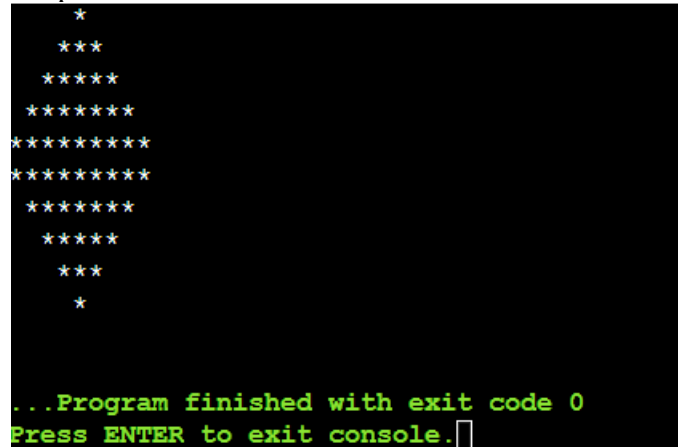
```
import java.util.*;
public class Main{
    public static void main(String[] args) {
        int n=5;
        for (int i=1;i<=n;i++){
            for (int j=n;j>i;j--){
                System.out.print(" ");
            }
            for (int k=0;k<i*2-1;k++){
                System.out.print("*");
            }
            System.out.println();
        }
        for (int i=1;i<=n;i++){
            for (int j=0;j<i-1;j++){
                System.out.print(" ");
            }
            for (int k=i;k<=n;k++){
                System.out.print(" ");
            }
            for (int j=0;j<i-1;j++){
                System.out.print(" ");
            }
            for (int k=i;k<=n;k++){
                System.out.print("*");
            }
            System.out.println();
        }
    }
}
```

```

    }
    for (int k=(n-i)*2+1;k>0;k--){
        System.out.print("*");
    }
    System.out.println();
}
}
}

```

Output:



```

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

...Program finished with exit code 0
Press ENTER to exit console.

```

5

```

    1
   0 1
  1 0 1
 0 1 0 1
1 0 1 0 1

```

Code:

```

import java.util.Scanner;
public class Main{
    public static void main(String [] args){
        Scanner sc=new Scanner(System.in);
        System.out.println();
        int n=sc.nextInt();
        for(int i=1;i<=n;i++){
            for(int j=1;j<=i;j++){
                if(j%2==0){
                    System.out.print(0);
                }
                else{
                    System.out.print(1);
                }
            }
        }
    }
}

```

```

    }
    }
    System.out.println();
}
}
}

```

Output:

```

5
1
10
101
1010
10101
...Program finished with exit code 0
Press ENTER to exit console.

```

6

```

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

```

Code:

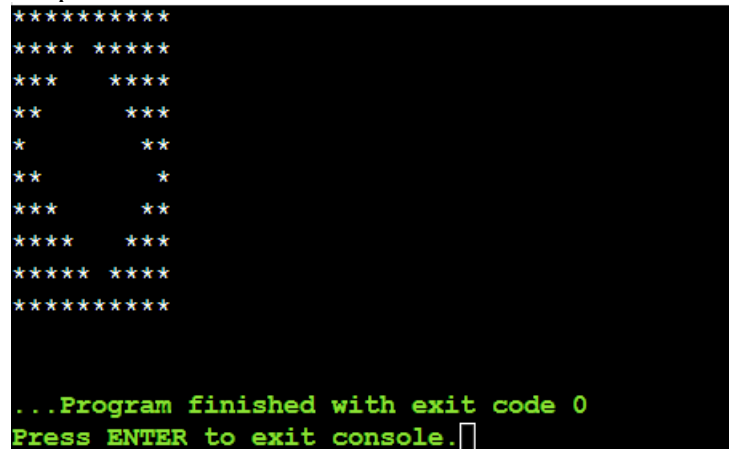
```

import java.util.*;
public class Main{
    public static void main(String [] args){
        int n=10;
        int a=(n-1)/2;
        int b=3*n/2-1;
        for(int i=0;i<n;i++){
            for(int j=0;j<n;j++){
                if(i+j<=a || i-j>=a || j-i>=a || i+j>=b){
                    System.out.print("*");
                }
                else{
                    System.out.print(" ");
                }
            }
            System.out.println();
        }
    }
}

```

}

Output:



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

...Program finished with exit code 0
Press ENTER to exit console.
```

7

Code:

```
public class Main{
    public static void
        int n=5;
        for(int i=0;i<5;++i){
            for(int j=0;j<=i;++j){
                System.out.print("*");
            }
            for(int j=0;j<4-i;++j){
                System.out.print(" ");
            }
            for(int j=0;j<=i;++j){
                System.out.print("*");
            }
            System.out.println();
        }
        for(int i=3;i>=0;--i){
            for(int j=0;j<=i;++j){
                System.out.print("*");
            }
            for(int j=0;j<4-i;++j){
                System.out.print(" ");
            }
        }
    }
}
```

```

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

main(String[]args){

```

for(int j=0;j<=i;++j){
    System.out.print("*");
}
System.out.println();

```

```

}
}
}

```

Output:

```

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

...Program finished with exit code 0
Press ENTER to exit console.

```

8

```

1      1
12     21
123    321
12344321

```

Code:

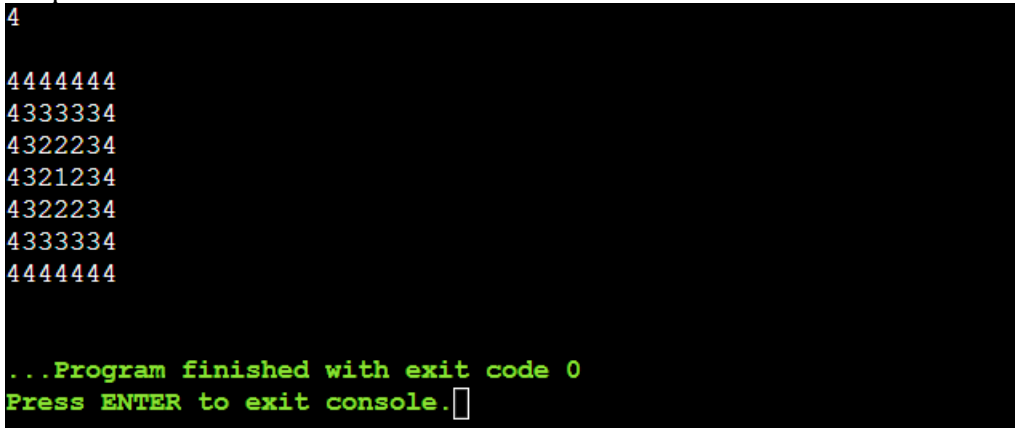
```

import java.util.*;
public class Main{
    public static void main(String [] args){
        int n=4;
        for(int i=1;i<=n;i++){
            for(int j=1;j<=n*2;j++){
                if(j<=i){
                    System.out.print(j);
                }
                else if(j>n*2-i){
                    System.out.print((n*2-j+1));
                }
                else{
                    System.out.print(" ");
                }
            }
        }
        System.out.println();
    }
}

```

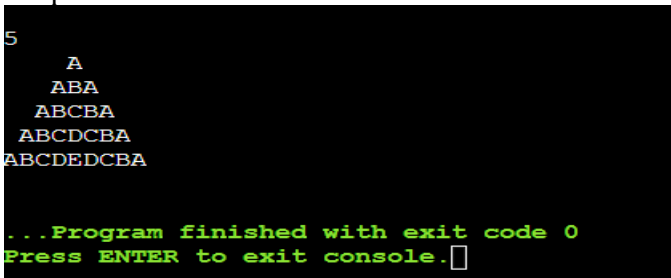
	<pre>     } } } Output: 1      1 12     21 123    321 12344321  ...Program finished with exit code 0 Press ENTER to exit console. </pre>
9	<pre> 4 4 4 4 4 4 4 4 3 3 3 3 3 4 4 3 2 2 2 3 4 4 3 2 1 2 3 4 4 3 2 2 2 3 4 4 3 3 3 3 3 4 4 4 4 4 4 4 4  import java.util.Scanner; public class Main{     public static void main(String [] args){         int min;         Scanner sc=new Scanner(System.in);         int n=sc.nextInt();         System.out.println();         for(int i=1;i&lt;=n;i++){             for(int j=1;j&lt;=n;j++){                 min=i&lt;j?i:j;                 System.out.print(n-min+1+"");             }             for(int j=n-1;j&gt;=1;j--){                 min=i&lt;j?i:j;                 System.out.print(n-min+1+"");             }             System.out.println();         }         for(int i=n-1;i&gt;=1;i--){             for(int j=1;j&lt;=n;j++){                 min=i&lt;j?i:j;                 System.out.print(n-min+1+"");             } </pre>



	<pre>         for(int j=n-1;j&gt;=1;j--){             min=i&lt;j?i:j;             System.out.print(n-min+1+"");         }         System.out.println();     } } </pre> <p>Output:</p>  <pre> 4 44444444 43333334 4322234 4321234 4322234 43333334 44444444  ...Program finished with exit code 0 Press ENTER to exit console. </pre>
10	<div style="display: flex; justify-content: space-between;"> <div> <p>Code:</p> <pre> import java.util.*;  public class Main {     public static void main(String args[])     {         int i,j,n;         Scanner sc = new Scanner(System.in);         System.out.println("");         n=sc.nextInt();         for(i=1;i&lt;=n;i++)         {             for(j=1;j&lt;=n-i;j++)             {                 System.out.printf(" ");             }             for(j=1;j&lt;=i;j++)             { </pre> </div> <div style="text-align: center;"> <p><b>A</b></p> <p><b>ABA</b></p> <p><b>ABCBA</b></p> <p><b>ABCD CBA</b></p> <hr style="width: 20%; margin: 10px auto;"/> </div> </div>

```
        System.out.printf("%c", (char)(j+64));
    }
    for(j=i-1; j>=1; j--)
    {
        System.out.printf("%c", (char)(j+64));
    }
    System.out.println();
}
}
```

Output:



```
5
  A
 ABA
ABCBA
ABCDCA
ABCDEDCBA

...Program finished with exit code 0
Press ENTER to exit console. □
```

Note:

- If Code similarity is found, assignment will not be considered and Zero (0) Marks will be awarded.
- You have to upload a single document consisting of all the above programs and corresponding Output.