package patterns;

```
import java.util.Scanner;

class abc {
public void pattern1(int n) {
for (int i = 1; i <= n; i++) {
for (int j = 1; j <= i; j++) {
System.out.print(i + " ");
}
System.out.println(" ");
}
}
```

```
public void pattern2(int n) {
    for (int i = 0; i < n; i++) {
        for (int j = 0; j < n - i - 1; j++) {
            System.out.print(" ");
        }


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


public void pattern3(int n) {
    for (int i = 0; i < n; i++) {
        for (int j = 0; j < i; j++) {
            System.out.print(" ");
        }
        for (int k = 0; k < (2 \* n) - (2 \* i + 1); k++) {
            System.out.print("\*");
        }
        System.out.println("");
    }
}


public void pattern4(int n) {
    for (int i = 1; i <= 2 \* n - 1; i++) {
        int stars = i;
        if (i >= n)
```

```
            stars = 2 \* n - i;
        for (int j = 1; j <= stars; j++) {
            System.out.print("\*");
        }
        System.out.println("");
    }
}


int stars = 1;


public void pattern5(int n) {
    for (int i = 0; i < n; i++) {
        if (i % 2 == 0)
            stars = 1;
        else
            stars = 0;
        for (int j = 0; j <= i; j++) {
            System.out.print(stars);
            stars = 1 - stars;
        }
        System.out.println("");


    }
}


int nu = 1;


public void pattern6(int n) {
    for (int i = 0; i < n; i++) {
        for (int j = 0; j <= i; j++) {
            System.out.print(nu + " ");
            nu = nu + 1;
        }
        System.out.println("");
    }
}


public void pattern7(int n) {

    for (int i = 0; i < n; i++) {


        for (char ch = 'A'; ch <= 'A'+i; ch++) {
            System.out.print(ch + " ");

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

```
}


public void pattern8(int n) {
    int space = 2 \*(n-1);
    for (int i = 1; i <= n; i++) {
        for (int j = 1; j <= i; j++) {
            System.out.print(j);
        }
        for(int j=1;j<space;j++){
            System.out.print(" ");
        }

        for(int k=i;k>0;k--){
            System.out.print(k);
        }


        System.out.println("");
        space = space -2;
    }


}


public void pattern9(int n) {

    for (int i = 0; i < n; i++) {
        char s = 'A';
        for (int j = 0; j <+ n-i; j++) {
            System.out.print(s + " ");
            s++;
        }
        System.out.println("");
    }


}


public void pattern10(int n) {
    char ch = 'A';
    for (int i = 0; i < n; i++) {

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

        }
        ch++;
        System.out.println("");
    }


}
```

```
public void pattern11(int n) {

    for (int i = 1; i <= n; i++) {

        for (int j = 1; j <= n-i; j++) {
            System.out.print("\*");
        }

        char ch = 'A';
        int breakPoint = (2\*i)/2;
        for (int k =1; k <= 2\*i-1; k++) {
            System.out.print(ch);
            if(k<breakPoint) ch++;
            else ch--;
        }
        for (int j = 1; j <= n-i; j++) {
            System.out.print("\*");
        }



        System.out.println("");
    }


}





public void pattern12(int n) {

    for (int i = 1; i <= n; i++) {

        //char ch = (char) ('F' - i);
        for (char ch = (char)('E' - i +1); ch <= 'E'; ch++) {
            System.out.print(ch);
        }


        System.out.println("");
    }


}



public void pattern13(int n) {
    int spaces = 2\*n-2;
    for (int i = 1; i <= 2\*n-1; i++) {
        int star = i;
        if(i>n) star = 2 \* n - i;
```

```
          for(int j=1; j<=star;j++){
              System.out.print("\*");
          }

          for(int j=1;j<=spaces;j++){
              System.out.print("A");
          }

          for(int j=1; j<=star;j++){
              System.out.print("\*");
          }
          if(i<n) spaces = spaces-2;
          else spaces = spaces +2;


            System.out.println("");

      }


  }
```

}

public class pattern {
public static void main(String[] args) {
Scanner sc = new Scanner(System.in);
System.out.println("Enter the value of n : ");
int n = sc.nextInt();
abc obj = new abc();

```
      obj.pattern13(n);


  }
```

}
output for all

Got it ▯
You want me to explain and **show the outputs of all the** `pattern1` → `pattern13` **methods** in your `abc` class for a given input `n`.

Let’s assume `n = 5` (most common test case).
I’ll walk through each pattern with its **expected console output**.

✅ Pattern 1

```
for (int i = 1; i <= n; i++) {
    for (int j = 1; j <= i; j++) {
        System.out.print(i + " ");
    }
    System.out.println();
}
```

Output (`n=5`):

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

✅ Pattern 2 (Pyramid)

Output:

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

✅ Pattern 3 (Inverted Pyramid)

Output:

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

✅ Pattern 4 (Diamond-ish upper+lower triangle)

Output:

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

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

✅ Pattern 5 (Binary Triangle / 0-1 pattern)

Output:

```
1
0 1
1 0 1
0 1 0 1
1 0 1 0 1
```

✅ Pattern 6 (Floyd’s Triangle)

Output:

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

✅ Pattern 7 (Character Triangle)

Output:

```
A
A B
A B C
A B C D
A B C D E
```

✅ Pattern 8 ("Number + Spaces + Reverse Number")

Output:

```
1        1
12      21
123    321
1234  4321
1234554321
```

✅ Pattern 9 (Decreasing letters per row)

⚠ Your code has `for (int j = 0; j <+ n-i; j++)` → actually `j < n-i`.
Output (`n=5`):

```
A B C D E
A B C D
A B C
A B
A
```

✅ Pattern 10 (Triangle with repeated letters per row)

Output:

```
A
B B
C C C
D D D D
E E E E E
```

✅ Pattern 11 (Letter pyramid with `*` padding)

Output:

```
****A****
***ABA***
**ABCBA**
*ABCDCBA*
ABCDEDCBA
```

✅ Pattern 12 (Character increasing from E ↓ E)

Output:

```
E
D E
C D E
B C D E
A B C D E
```

✅ Pattern 13 (Hourglass of `*` with “A” filling middle space)

Output:

```
*AAAAAAAAAA*
**AAAAAAAA**
***AAAAAA***
****AAAA****
*****AA*****
****AAAA****
***AAAAAA***
**AAAAAAAA**
*AAAAAAAAAA*
```

Summary

If you run `main` with `n=5` and call each function in order, the outputs above are what you’ll see.

Do you want me to **fix pattern9 small bug (`<+` instead of `<`)** and also adjust pattern12 to print clean with spaces between letters like the others?