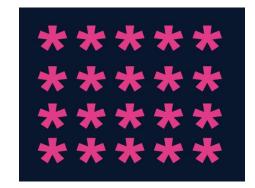
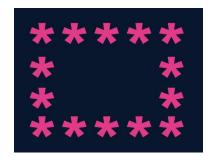
Java - Introduction to Programming Lecture 5

Patterns - Part 1

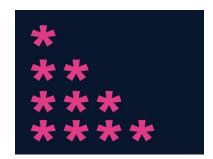


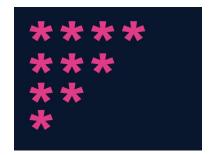
```
import java.util.*;

public class Patterns {
    public static void main(String args[]) {
        int n = 5;
        int m = 4;
        for(int i=0; i<n; i++) {
            for(int j=0; j<m; j++) {
                System.out.print("*");
            }
            System.out.println();
        }
}</pre>
```



```
public class Patterns {
  public static void main(String args[]) {
    int n = 5;
    int m = 4;
    for(int i=0; i<n; i++) {
        for(int j=0; j<m; j++) {
            if(i == 0 || i == n-1 || j == 0 || j == m-1) {
                System.out.print("*");
        } else {
                System.out.print(" ");
        }
        System.out.println();
    }
}</pre>
```







```
import java.util.*;

public class Patterns {
    public static void main(String args[]) {
        int n = 4;

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

        for(int j=0; j<=n-i; j++) {
                System.out.print("*");
        }
        System.out.println();
    }
}</pre>
```

```
import java.util.*;

public class Patterns {
    public static void main(String args[]) {
        int n = 5;

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

```
import java.util.*;

public class Patterns {
    public static void main(String args[]) {
        int n = 5;

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

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

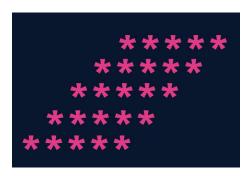
```
import java.util.*;

public class Patterns {
    public static void main(String args[]) {
        int n = 5;
        int number = 1;

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

Homework Problems (Solutions in next Lecture's Video)

1. Print a solid rhombus.



2. Print a number pyramid.



3. Print a palindromic number pyramid.

```
1
212
32123
4321234
543212345
```

Homework Solution (Lecture 4)

1. Print all even numbers till n.

```
public class Solutions {

public static void main(String args[]) {

int n = 25;

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

if(i % 2 == 0) {

System.out.println(i);

}

}

}

}

10. }

11. }
</pre>
```

3. Make a menu driven program. The user can enter 2 numbers, either 1 or 0. If the user enters 1 then keep taking input from the user for a student's marks(out of 100).

If they enter 0 then stop.

If he/ she scores:

```
Marks >=90 -> print "This is Good"

89 >= Marks >= 60 -> print "This is also Good"

59 >= Marks >= 0 -> print "This is Good as well"
```

Because marks don't matter but our effort does.

(Hint: use do-while loop but think & understand why)

```
import java.util.*;
public class Solutions {
  public static void main(String args[]) {
       Scanner sc = new Scanner(System.in);
      int input;
       do {
           int marks = sc.nextInt();
           if(marks >= 90 && marks <= 100) {
               System.out.println("This is Good");
           } else if(marks >= 60 && marks <= 89) {</pre>
               System.out.println("This is also Good");
           } else if(marks >= 0 && marks <= 59) {</pre>
               System.out.println("This is Good as well");
           } else {
               System.out.println("Invalid");
           System.out.println("Want to continue ? (yes(1) or no(0))");
           input = sc.nextInt();
       } while(input == 1);
```

Qs. Print if a number n is prime or not (Input n from the user).

[In this problem you will learn how to check if a number is prime or not]

```
import java.util.*;

public class Solutions {
   public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();

        boolean isPrime = true;
        for(int i=2; i<=n/2; i++) {</pre>
```

```
if(n % i == 0) {
        isPrime = false;
        break;
}

if(isPrime) {
    if(n == 1) {
        System.out.println("This is neither prime not composite");
    } else {
        System.out.println("This is a prime number");
    }
} else {
    System.out.println("This is not a prime number");
}
}
```