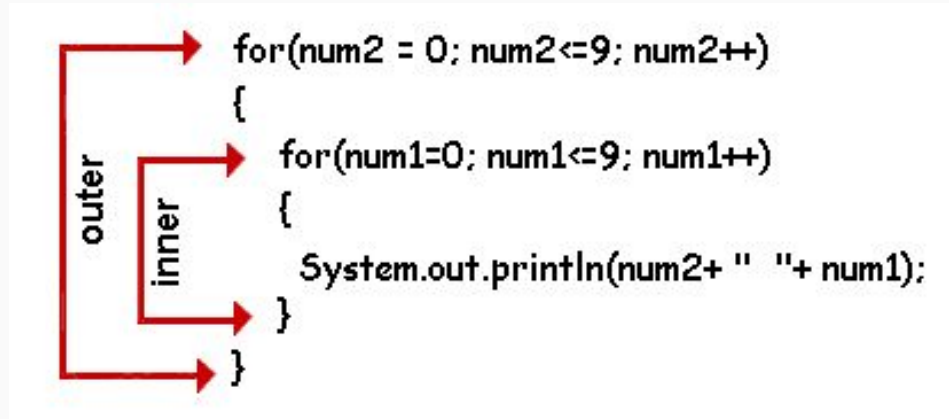# JAVA

Class 9

Agenda

Nested Loops in Java
Practice on Loops
Arrays in JAVA

Nested Loops

- Placing one loop inside the body of another loop is called nesting.
- When we "nest" two loops, the outer loop takes control of the number of complete repetitions of the inner loop.
- While all types of loops may be nested, the most commonly nested loops are for loops.

```
for(num2 = 0; num2<=9; num2++)
{
    for(num1=0; num1<=9; num1++)
    {
        System.out.println(num2+ "  "+ num1);
    }
}
```
outer
inner

Nested Loops

```java
for (int i=1; i<=3; i++) {

             for (int j=1; j<=3; j++) {

                      System.out.println(i+" "+j);
             }
 }
```

Output:
1 1
1 2
1 3
2 1
2 2
2 3
3 1
3 2
3 3

Task

1. Write a program that reads a range of integers (start and end point), provided by a user and then from that range prints the sum of the even and odd integers.

2. Ask user to enter the item they want to buy and the price for the item. Then ask user to pay for it. Every time user enters money accumulate the amount and tell user how much is left to pay off the amount. Whenever user done with payments tell them "Thank you for shopping!"

Task

1. Print the following pattern:

```
1
12
123
1234
12345
```

2. Print the following pattern:

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

Task

1. Write a guessing game where the user has to guess a secret number between 1 and 20. After every guess input, the program tells the user whether their number was too large or too small. The program will keep asking the user to enter the number until he finds the correct number. When the correct answer is found the system should display "Congratulations!!. You got it!".

2. Ask a user to input a leap year. Give the user 10 chances to enter a correct leap year. As soon as the user enters the correct leap year exit the loop.