

Object-Oriented Programming Lab#2

Today's Topics

- Tool Demo
- Flow Controls: If, While, For, Do-While
- Recursion
- User Input
- Array

Code to read user input using Scanner:(need to import java.util.Scanner)

```
Scanner scan = new Scanner (System . in ) ;  
int inputNum = scan.nextInt();  
double input = scan.nextDouble();
```

Code to read user input using JOptionPane: (need to import javax.swing.JOptionPane)

```
static String showInputDialog(Component parentComponent, Object message)
```

```
String name = JOptionPane.showInputDialog(null, "enter name");
```

Problems/Assignments

1. Write a java program to determine whether **a given number is even or odd.**

Sample Input	Expected Output
7	Odd
8	Even
11	Odd

2. Write a java program to determine whether **a given number is prime or not.**

Sample Input	Expected Output
7	Prime
9	Not Prime
11	Prime

3. Write a program that will take **n integer numbers**, and then **sum** up all the **even integers**.

Sample input	Sample output
1 2 3 4 5	6
2 8 3 9 0 1	10

4. Write a program that will take an **integer numbers**, and print the day of the week depending on the number. To find the day of the week, you need to divide the number by 7 and find the remainder. The day will have the following value depending on the remainder.

Remainder	Day of the Week
0	Saturday
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday

Sample Input	Expected Output	Explanation
9	Monday	As $9\%7 = 2$, the output is Monday
14	Saturday	As $14\%7 = 0$, the output is Saturday according to the above table.
27	Friday	As $27\%7 = 6$, the output is Friday according to the above table.

5. Write a program in java to find the factorial of n. Use **recursion**.

Sample Input	Expected Output
2	2
3	6
0	1
-2 (any negative number)	NA

6. Write a program in java to display the **summation** of the individual digits of a number.

Sample Input	Expected Output	Explanation
172	10	$1+7+2 = 10$
90357	24	$9+0+3+5+7=24$
110	2	$1+1+0=2$

7. Write a Java program to show the upside-down number pyramid. The program will prompt the user to enter an integer number as input. If the **user input is 9 or less**, **display that many lines** of the pyramid. If **user input is 10 or above**, **display only 9 lines**. Don't hard code the values, use logic.

Sample Input	Expected Output
5	1 2 3 4 5 4 3 2 1 1 2 3 4 3 2 1 1 2 3 2 1 1 2 1 1
12	1 2 3 4 5 6 7 8 9 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 6 5 4 3 2 1 1 2 3 4 5 6 5 4 3 2 1 1 2 3 4 5 4 3 2 1 1 2 3 4 3 2 1 1 2 3 2 1 1 2 1 1