



Object Oriented Analysis and Design using Java

Prof: Mahitha G

Department of Computer Science and Engineering

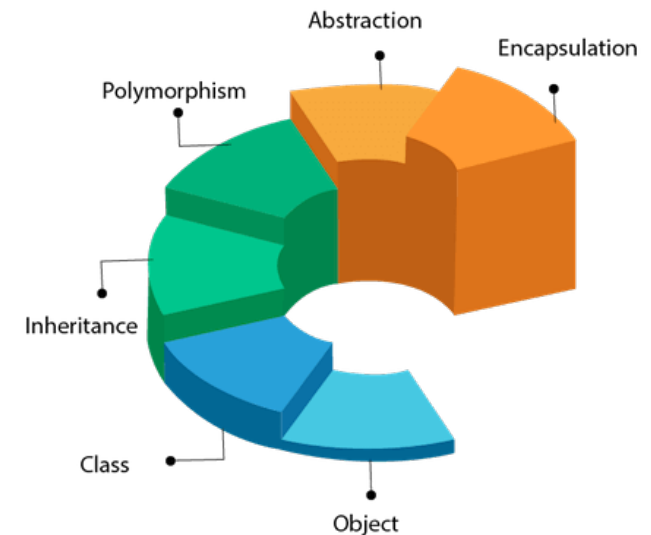
Object Oriented Analysis and Design using Java

Introduction to OO Programming

Mahitha G

Department of Computer Science and Engineering

OOPs (Object-Oriented Programming System)



Object Oriented Analysis and Design using Java

Unit-01 : Object Oriented Programming



- ~~1: Introduction to course, Introduction to object-oriented concepts, Object Based Programming: JVM~~
- ~~2: Abstraction, Encapsulation, Composition~~
- ~~3: Class Attributes, Behaviour, Objects, and Methods~~
- ~~4: Interface and Implementation: Role of Constructors and Destructors, Garbage Collector~~
- ~~5: Parameter Passing, Value Type and Reference Type~~
- ~~6: Overloading of Methods Model~~
- 7: Java Recursion
- 8: Class Attributes and Behaviour: Difference between Class Methods and Instance Methods
- 9: Inheritance: Concepts of Single Rooted Hierarchy and Interface
- 10: Abstract Class in Programming Languages, Object Class in Java

T1 : Chapter 6: Introducing Classes

Recursion is the process in which a method gives call to itself.

- Recursion has two steps
 1. recursive call on a problem of smaller size
 2. Base cases or escape hatch for which the solution is directly available

StarDraw.java

Factorial.java

One more simple example.

How to find the sum of the digits of a given number?

Can we say that if the number is 0, then the sum is 0? Can we say that if the number has some digits, then the result is given by the unit digit + the sum of the digits of the number with that unit digit removed? If we keep removing the digits, ultimately the number has to become zero.

[Client.java](#) and [MyNum.java](#)

```
import java.util.*;
public class Client
{
    public static void main(String[] args)
    {
        Scanner scanner = new Scanner(System.in);
        System.out.println("Enter the number");
        int n = scanner.nextInt();
        MyNum mynum1 = new MyNum(n);
        int sum = mynum1.findSum();
        System.out.println("sum : " + sum);
        scanner.close();
    }
}
```




THANK YOU

Mahitha G

Department of Computer Science and Engineering

mahithag@pes.edu