SNS COLLEGE OF TECHNOLOGY

Coimbatore-35.
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

COURSE CODE & NAME : 23CST205 - Object Oriented Programming Using Java

II YEAR/ III SEMESTER

UNIT – I INTRODUCTION TO OOP

Topic:Inheritance

Inheritance

1. Inheritance is an important pillar of OOP (Object Oriented Programming).
2. It is the mechanism in Java by which one class is allowed to inherit the features (fields and methods) of another class.
3. We are achieving inheritance by using **extends** keyword.
4. Inheritance is also known as "**is-a**" relationship.

- **Important terminologies:**

- **Superclass:**
- The class whose features are inherited is known as superclass (also known as base or parent class).

- **Subclass:**
- he class that inherits the other class is known as subclass (also known as derived or extended or child class).
- The subclass can add its own fields and methods in addition to the superclass fields and methods.

Inheritance

- **Reusability:**

  Inheritance supports the concept of “reusability”.

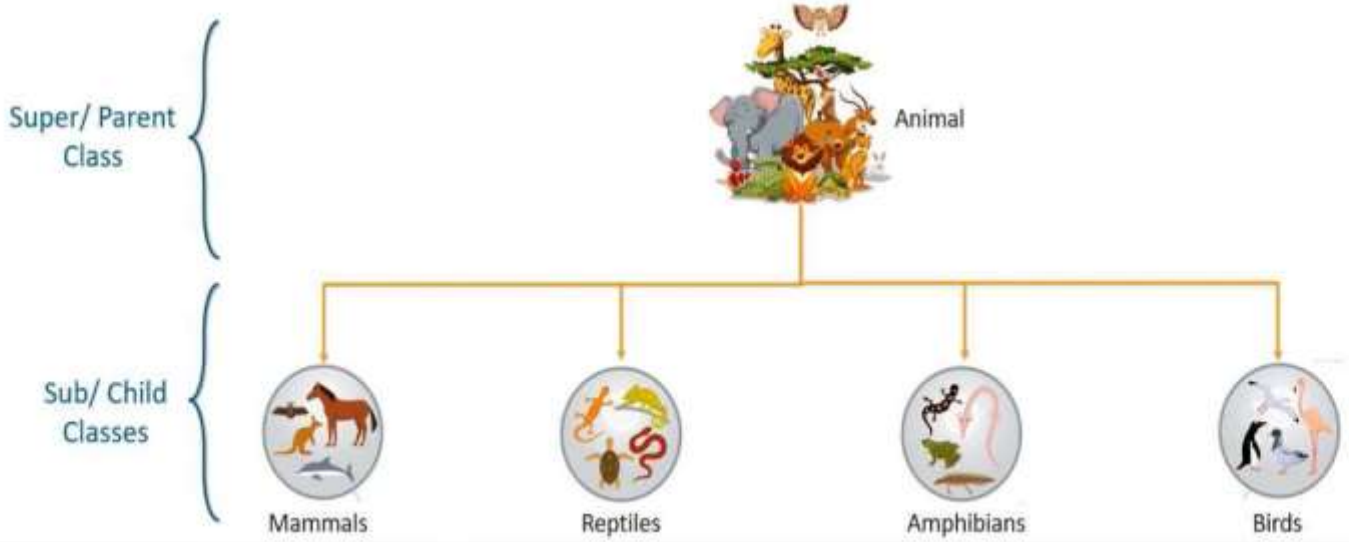
  when we want to create a new class and there is already a class that includes some of the code that we want, we can derive our new class from the existing class.

  By doing this, we are reusing the fields and methods of the existing class.

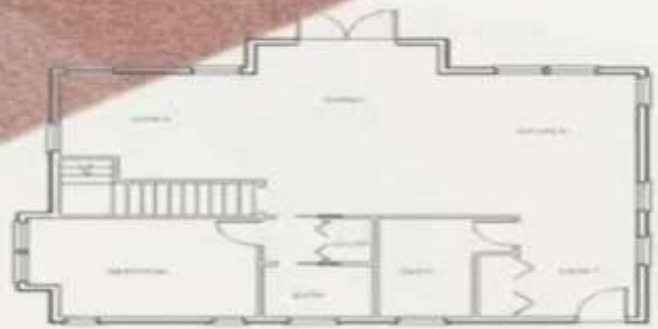
Inheritance | Polymorphism | Abstraction | Encapsulation

Inheritance is the property of an object to acquire all the properties and behavior of its parent object

Inheritance represents the **IS-A** relationship which is also known as a parent-child relationship



Class



Blueprint

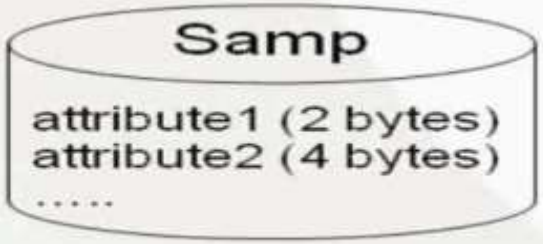
Real house

Class

Sample(class name)
attribute1 attribute2 ....
method1() method2() .....

Object

Heap



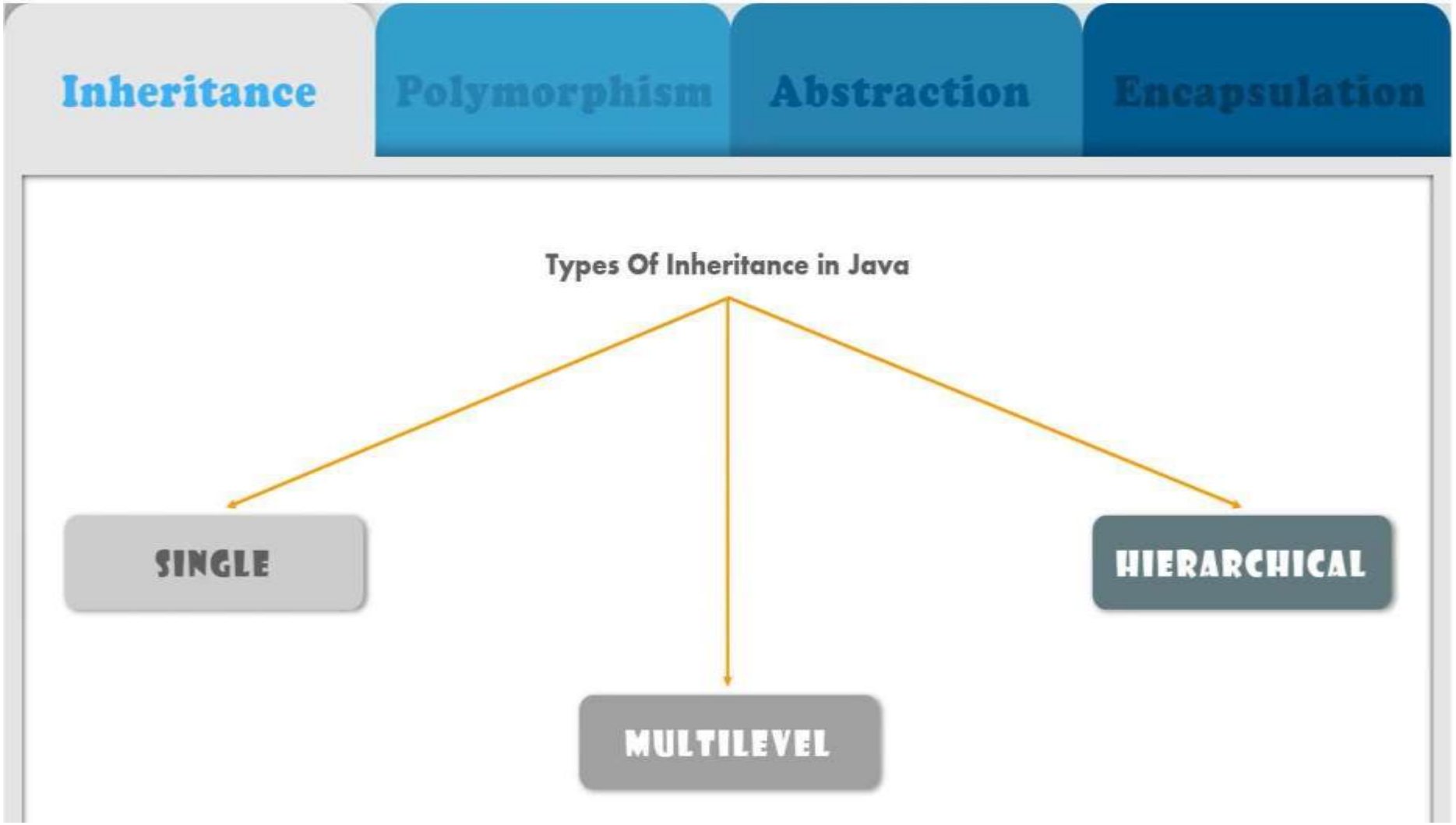
Inheritance | Polymorphism | Abstraction | Encapsulation

Syntax

```
class Subclass extends Superclass
{
    //methods and fields
}
```

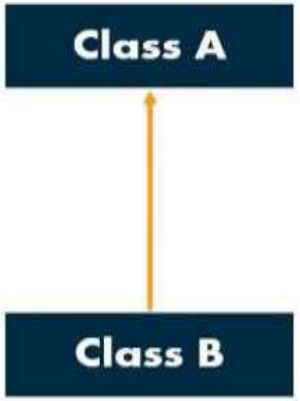
Advantages

Code Reusability | Extensibility | Overriding | Data Hiding


Inheritance
Polymorphism
Abstraction
Encapsulation
Types Of Inheritance in Java
SINGLE
MULTILEVEL
HIERARCHICAL

Inheritance | Polymorphism | Abstraction | Encapsulation

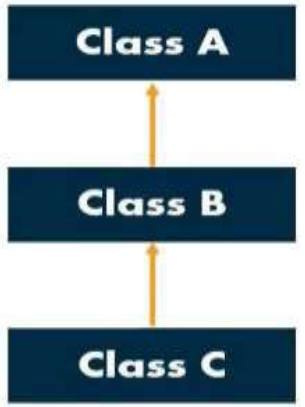
Single level inheritance enables a derived class to **inherit** properties and behaviour from a **single** parent class

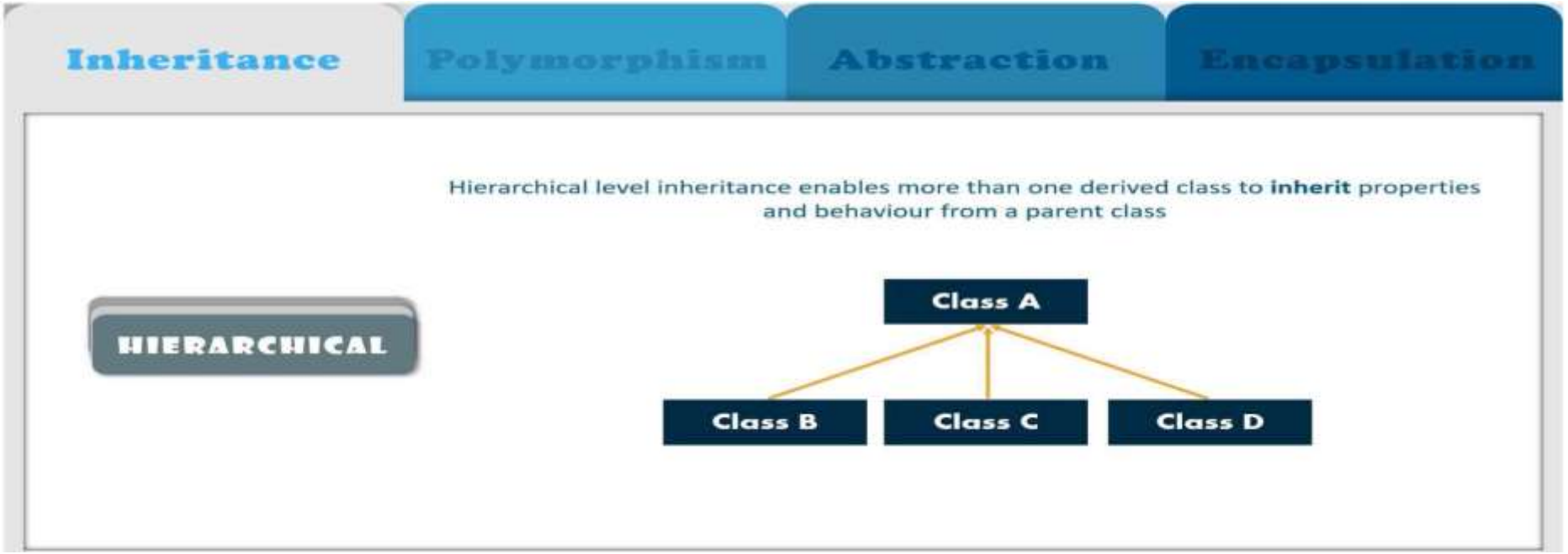


Inheritance | Polymorphism | Abstraction | Encapsulation

Multi level inheritance enables a derived class to **inherit** properties and behaviour from a parent class which is also derived from another class

MULTILEVEL

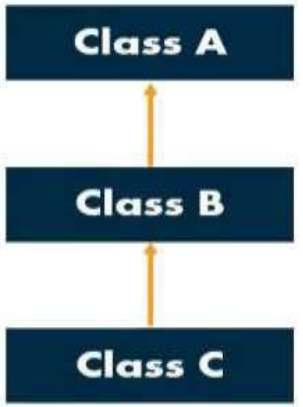



Inheritance
Polymorphism
Abstraction
Encapsulation
Hierarchical level inheritance enables more than one derived class to inherit properties and behaviour from a parent class
HIERARCHICAL
Class A
Class B
Class C
Class D

Inheritance | Polymorphism | Abstraction | Encapsulation

Multi level inheritance enables a derived class to **inherit** properties and behaviour from a parent class which is also derived from another class

MULTILEVEL




THANK
YOU!