Inheritance in Java is a mechanism in which one object acquires all the properties and behaviors of a parent object. When you inherit from an existing class, you can reuse methods and fields of the parent class. Moreover, you can add new methods and fields in your current class also.

Why use inheritance in java
- o   For Method Overriding (so runtime polymorphism can be achieved).
- o   For Code Reusability.

Terms used in Inheritance
- o   **Class:** A class is a group of objects which have common properties. It is a template or blueprint from which objects are created.
- o   **Sub Class/Child Class:** Subclass is a class which inherits the other class. It is also called a derived class, extended class, or child class.
- o   **Super Class/Parent Class:** Superclass is the class from where a subclass inherits the features. It is also called a base class or a parent class.
- o   **Reusability:** As the name specifies, reusability is a mechanism which facilitates you to reuse the fields and methods of the existing class when you create a new class. You can use the same fields and methods already defined in the previous class.

The syntax of Java Inheritance

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

The **extends keyword** indicates that you are making a new class that derives from an existing class. The meaning of "extends" is to increase the functionality. In the terminology of Java, a class which is inherited is called a parent or superclass, and the new class is called child or subclass.

Example Code:

```java
class Teacher {
    String designation = "Faculty";
    String collegeName = "XIE";
    String Address="Mahim West,   Pin: 400016";
    void JobType(){
        System.out.println("Teaching");
    }
}
class EXTCTeacher extends Teacher{
    String subject,Name;
    int JoinYear;

    String Department="EXTC";
    EXTCTeacher (String n,String s, int y){
        this.Name=n;
        this.subject=s;
        this.JoinYear=y;
    }}
```

```
public class InhTest {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        EXTCTeacher T1 = new EXTCTeacher("SP","Programming", 2005);
        EXTCTeacher T2 = new EXTCTeacher("NH","SysDes", 2008);
        System.out.println(T1.Name+",  "+T1.designation+", "+T1.collegeName+",
"+T1.Department+", "+T1.subject+", "+T1.JoinYear);
        System.out.println(T2.Name+",  "+T2.designation+", "+T2.collegeName+",
"+T2.Department+", "+T2.subject+", "+T2.JoinYear);

    }
```

Assignment:

1.Classification of Mango (B1):

Genus: Mangifera, Species:Indica, Commonname: Mango

Sub classes	Area	Colour	Cultivation Time
Alphonsos	Ratanagiri, Maharashtra	Greenish Yellow	May to June
Chausa	Bihar	Green	July to August
Dasheri	Malihabad, Uttar Pradesh	Orange Yellow	June to July

2. Classification of Library Books (B2):

Category: Reference
Sub Category: Engineering

Branch	Publisher	Tag Number
Electronics	Wiley	122.056.01
Computer	TMH	123.05.02

3. Bank Customer fact sheet(B3):

Name of the bank: SBI
Type of account: Savings
Interest rate: 6.5%

Name of the customer	DOB	Acc. Number	Balance
C1	12/04/2001	1000534789	289004/-
C2			
C3			