

# ASSIGNMENT INHERITANCE

## 1. Single Inheritance Example

### Scenario: Employee Management System

**Description:** A **Person** class stores basic details like `name` and `age`. A **Employee** class extends it by adding properties like `employeeId` and `salary`.

#### ♦ Classes to Create:

- `Person` (Base Class)
- `Employee` (Derived Class)

#### ♦ Functionality:

- `Person` class contains a method `displayPersonalDetails()`.
- `Employee` class extends `Person` and adds `displayEmployeeDetails()`.

## 2. Multilevel Inheritance Example

### Scenario: SmartPhone Manufacturing

**Description:** A **Device** class contains general properties like `brand` and `price`. A **Phone** class extends it with `phoneNumber` and `networkType`. Further, a **SmartPhone** class extends `Phone` by adding features like `operatingSystem` and `cameraQuality`.

#### ♦ Classes to Create:

- `Device` (Base Class)
- `Phone` (Intermediate Class)
- `SmartPhone` (Derived Class)

#### ♦ Functionality:

- `Device` class contains `displayDeviceDetails()`.
- `Phone` extends `Device` and adds `displayPhoneDetails()`.
- `SmartPhone` extends `Phone` and adds `displaySmartPhoneDetails()`.

### 3. Hierarchical Inheritance Example

#### Scenario: Animal Kingdom Classification

**Description:** A `Animal` class serves as a base class. It has two subclasses: `Mammal` and `Bird`. Both classes inherit from `Animal` but have their unique characteristics.

♦ **Classes to Create:**

- `Animal` (Base Class)
- `Mammal` (Derived Class 1)
- `Bird` (Derived Class 2)

♦ **Functionality:**

- `Animal` contains a method `displayAnimalInfo()`.
- `Mammal` extends `Animal` with `giveBirth()`.
- `Bird` extends `Animal` with `layEggs()`.