

# Real-Life Python Programs Using Inheritance

## 1. Employee Management System

Base Class: Employee (Attributes: name, id, salary | Functions: display\_details)

Subclasses: Manager (department), Developer (programming\_language), Intern (duration)

## 2. Vehicle Management System

Base Class: Vehicle (make, model, year | start, stop)

Subclasses: Car (num\_doors), Bike (type), Truck (capacity)

## 3. Online Shopping Platform

Base Class: Product (name, price, sku | display\_product)

Subclasses: Electronics (warranty), Clothing (size), Grocery (expiry\_date)

## 4. Banking System

Base Class: Account (account\_number, balance | deposit, withdraw)

Subclasses: SavingsAccount (interest\_rate), CurrentAccount (overdraft\_limit), LoanAccount (loan\_amount)

## 5. Hospital Management System

Base Class: Person (name, age, gender | show\_info)

Subclasses: Doctor (specialization), Patient (ailment), Nurse (shift)

## 6. University System

Base Class: Person (name, id, contact | get\_details)

Subclasses: Student (course), Faculty (department), Staff (role)

## 7. Restaurant Billing System

Base Class: MenuItem (name, price | get\_price)

Subclasses: Beverage (volume), FoodItem (ingredients), Dessert (calories)

## 8. Smart Home Devices

Base Class: SmartDevice (device\_id, status | turn\_on, turn\_off)

Subclasses: SmartLight (brightness), SmartThermostat (temperature), SmartLock (lock\_status)

## 9. Zoo Animal Classification

Base Class: Animal (name, species | sound)

Subclasses: Mammal (fur\_color), Bird (wing\_span), Reptile (is\_venomous)

## 10. Library Management System

Base Class: Item (title, id | display\_info)

Subclasses: Book (author), Magazine (issue\_number), DVD (duration)