

| **Branch/Semester** | BSc. IT (Cloud & Application Development) / II |
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| **Subject Name:** | Advance of Application Programming |
| **Subject Code:** | 05CA0203 |
| **Assignment:** | Assignment No. 3 (Inheritance & Polymorphism) |
| **Date:** | 5th February 2025 |
| **Faculty Name:** | Prof. Abhishek Chauhan |

| **1.** | Create an animal kingdom simulation where each animal type (e.g., mammal, bird, reptile) is represented by a class hierarchy. Define a base class Animal with virtual functions like eat () and make Sound (), and then create derived classes such as Dog, Cat, Eagle, and Snake with their specific implementations of these functions. |
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| **2.** | Make a base class Account with virtual functions like deposit (), withdraw (), and display Balance (). Create derived classes such as Savings Account and Checking Account that inherit from Account and provide their own implementations of these functions based on account type. |
| **3.** | Define a base class Employee with virtual functions like calculate Salary () and display Details (), and then create derived classes for each type of employee with their own implementations of these functions. |
| **4.** | Create a base class called Shape with methods to calculate area and perimeter. Derive classes like Circle, Rectangle, and Triangle from Shape and implement the area and perimeter calculation methods for each derived class. |
| **5.** | Design a base class Employee with attributes like name, employee ID, and salary. Derive classes like Manager, Engineer, and Technician from Employee and implement methods to calculate salary based on different criteria (e.g., bonus for managers, overtime for technicians) |
| **6.** | Create a base class Vehicle with attributes like make, model, and year. Derive classes like Car, Truck, and Motorcycle from Vehicle and implement methods to display vehicle details and calculate fuel efficiency. |