**Task 1: Implement an Association Relationship**

Create two classes, "Student" and "Course." The student class should have attributes like name, age, and roll number. The Course class should have attributes like course name and duration. Now, establish an association between the two classes, where a student can enroll in multiple courses.

**Task 2: Implement an Aggregation Relationship**

Create two classes, "University" and "Department." The University class should contain a container (list of Departments) of Department objects. Each Department should have attributes like department name, location, and head of the department. Implement functions to add departments to the university and display the list of departments along with their details.

**Task 3: Implement a Composition Relationship**

Create three classes, "Country," "State," and "City." The Country class should contain a list of State objects, and each State object should contain a list of City objects. Add appropriate attributes to each class (e.g., country name, state name, city name). Implement functions to add states to the country and cities to each state.

**Task 4: Implement an Inheritance Hierarchy for Vehicles**

Create a base class called "Vehicle" with the following attributes: brand, model, and year. Provide member functions to set and get these attributes.

Then, create two derived classes: "Car" and "Motorcycle."

The Car class should inherit from Vehicle and have an additional attribute for the number of doors. Implement member functions to set and get the number of doors.

The Motorcycle class should also be inherited from Vehicle and have an additional attribute for the type of motorcycle (e.g., sport, cruiser, dirt bike). Implement member functions to set and get the type of motorcycle.