**Program on Inheritance**

1. Create a base class **Shape** with a method to calculate the area. Create a sub-class **Rectangle** that inherits from the base class and overrides the area() method to calculate the area of a rectangle.

* Instantiate an object for the sub-class and calculate its area

1. Create a base classes **Student and Employee** with attributes name, and age and have a method to display the information.. Derive a subclass person
   1. Get the student information and display it in the subclass **Person**
   2. Calculate the annual salary of the employee from the given salary and display the annual salary and the employee details in the **Person** class
2. Create a base class **Department** with methods like \_\_init\_\_() ,display\_info() and courses() .Create two or more departments from the base class.
   1. Initialize the values for each class using \_\_init\_\_() and display the information.
   2. Assign different courses for different departments and display the information
3. Design a class hierarchy for a transportation system. Add the relevant attributes and methods for the classes
   1. Create a base class **vehicle**  with attributes **speed** and **fuel\_type.**
   2. Derive a subclass **Car** from **Vehicle**
   3. further derive as **ElectricCar** from **Car .**
4. Design a class hierarchy for a library system
   1. Derive a subclasses **book, DVD, item.** Add the relevant attributes and methods for the same
   2. Create a class **Library** that inherits from the **book** and **DVD** .