**Q1. Create a class named Car**

* The class should have the following attributes: brand, model, and year.
* Include a method display\_details() that prints all the attribute values in a readable format.
* Create an object of the class and demonstrate the method.

**Q2. Extend the Car class**

* Add a method car\_age(current\_year) that calculates and returns the age of the car.
* Create a car object and show how the method works for the year 2025.

**Q3. Create a class Student**

* Attributes: name, roll\_number, and marks.
* Method is\_passed() should return True if marks are greater than or equal to 40, else False.
* Create at least two student objects and test the method.

**Q4. Create a class Rectangle**

* Attributes: length and breadth
* Methods:
  + area() – returns the area of the rectangle.
  + perimeter() – returns the perimeter.
* Create an object and display both area and perimeter.

**Q5. Create a base class Person**

* Attributes: name, age
* Method: show\_info() that prints the person's name and age.

**Create a subclass Employee that inherits from Person**

* Add a new attribute salary.
* Include a method show\_salary() to print the salary.
* Create an object of Employee and display all details.

**Q6. Create a base class Shape with a method area()**

* area() should print: “This is a shape”

Create two subclasses:

* Circle with attribute radius and overridden method area() that calculates the circle’s area.
* Square with attribute side and overridden method area() that calculates the square’s area.

Create objects of both subclasses and call their area() methods.

**Q7. Create a class Animal**

* Method: make\_sound() prints: "Animal makes a sound"

Create a subclass Dog:

* Override make\_sound() to print: "Dog barks"

Demonstrate method overriding by calling make\_sound() from both classes.

**Q8. Create a base class Vehicle**

* Constructor should accept and store one attribute: brand.

Create a subclass Bike:

* Constructor should accept brand and engine\_cc.
* Use super() to call the base class constructor.
* Add a method to display all attributes.

Create a Bike object and display its details.