**1.** Write a Python program to create a class representing a Circle. Include methods to calculate its area and perimeter.

**2.** Write a Python program to create a person class. Include attributes like name, country and date of birth. Implement a method to determine the person's age.

**3.** Write a Python program to create a calculator class. Include methods for basic arithmetic operations.

**4.** Write a Python program to create a class that represents a shape. Include methods to calculate its area and perimeter. Implement subclasses for different shapes like circle, triangle, and square.

**5.** Write a Python program to create a class representing a binary search tree. Include methods for inserting and searching for elements in the binary tree.

**6.** Write a Python program to create a class representing a stack data structure. Include methods for pushing and popping elements.

**7.** Write a Python program to create a class representing a linked list data structure. Include methods for displaying linked list data, inserting and deleting nodes.

**8.** Write a Python program to create a class representing a shopping cart. Include methods for adding and removing items, and calculating the total quantity.

**9.** Write a Python program to create a class representing a stack data structure. Include methods for pushing, popping and displaying elements.

**10.** Write a Python program to create a class representing a queue data structure. Include methods for enqueueing and dequeuing elements

**11.** Write a python program to create a class representing a bank. Include methods for managing customer accounts and transactions.

### 12. Create a Class with instance attributes. Write a Python program to create a Vehicle class with max\_speed and mileage instance attributes.

### 13. Create a child class Bus that will inherit all of the variables and methods of the Vehicle class.

### 14. Class Inheritance

**Given**:

Create a **Bus** class that inherits from the **Vehicle** class. Give the capacity argument of Bus.seating\_capacity() a **default** value of 50.

Use the following code for your parent Vehicle class.

