10. Create a Rectangle class with attributes length and breadth and methods to find area and perimeter. Compare two Rectangle objects by their area.

```
class Rectangle:
    def area(self, length, breadth):
        return length * breadth

    def perimeter(self, length, breadth):
        return 2 * (length + breadth)

    def compare_area(self, area1, area2):
        if area1 > area2:
            return "Rectangle 1 has a greater area."
        elif area1 < area2:
            return "Rectangle 2 has a greater area."
        else:
            return "Both rectangles have the same area."


# Taking input
length1 = float(input("Enter length of Rectangle 1: "))
breadth1 = float(input("Enter breadth of Rectangle 1: "))

length2 = float(input("Enter length of Rectangle 2: "))
breadth2 = float(input("Enter breadth of Rectangle 2: "))

# Creating object
rectangle = Rectangle()

# Calculations
area_rect1 = rectangle.area(length1, breadth1)
area_rect2 = rectangle.area(length2, breadth2)

perimeter_rect1 = rectangle.perimeter(length1, breadth1)
perimeter_rect2 = rectangle.perimeter(length2, breadth2)

# Output
print("\nRectangle 1:")
print("Area:", area_rect1)
print("Perimeter:", perimeter_rect1)

print("\nRectangle 2:")
print("Area:", area_rect2)
print("Perimeter:", perimeter_rect2)
```

```
# Comparison
area_comparison = rectangle.compare_area(area_rect1, area_rect2)
print("\n" + area_comparison)
```

11. **Create a Bank account with members account number, name, type of account and balance. Write constructor and methods to deposit at the bank and withdraw an amount from the bank.**

```
class BankAccount:
    def __init__(self, acc_no, name, acc_type, balance):
        self.account_number = acc_no
        self.name = name
        self.account_type = acc_type
        self.balance = balance

    def deposit(self, amount):
        # Deposit the specified amount into the account.
        if amount <= 0:
            print("Deposit amount must be positive!")
        else:
            self.balance += amount
            print(f"Deposited: {amount}")
            print(f"Updated Balance: {self.balance}")

    def withdraw(self, amount):
        # Withdraw the specified amount if sufficient balance exists.
        if amount <= 0:
            print("Withdrawal amount must be positive!")
        elif self.balance < amount:
            print("Insufficient balance!")
        else:
            self.balance -= amount
            print(f"Withdrew: {amount}")
            print(f"Updated Balance: {self.balance}")

    def display(self):
        # Display account details.
        print("\nAccount Details:")
        print(f"Account Number: {self.account_number}")
```

```
        print(f"Account Holder: {self.name}")
        print(f"Account Type: {self.account_type}")
        print(f"Account Balance: {self.balance}")


# Main program
acc_no = int(input("Enter account number: "))
name = input("Enter account holder name: ")
acc_type = input("Enter account type (Savings/Current): ")
balance = int(input("Enter initial balance: "))

# Create a BankAccount object
account = BankAccount(acc_no, name, acc_type, balance)

# Display account details
account.display()

# Perform deposit
deposit_amount = int(input("\nEnter the amount to deposit: "))
account.deposit(deposit_amount)

# Perform withdrawal
withdraw_amount = int(input("\nEnter the amount to withdraw: "))
account.withdraw(withdraw_amount)
```

12. **Create a class Rectangle with private attributes length and width. Overload '<' operator to compare the area of 2 rectangles.**

```
class Rectangle:
    def __init__(self, length, breadth):
        # Private attributes using single underscore (convention)
        self._length = length
        self._breadth = breadth

    def area(self):
        # Calculate and return the area of the rectangle
        return self._length * self._breadth
```

```
    def __lt__(self, other):
        # Overloading '<' operator to compare areas of two rectangles
        return self.area() < other.area()


# Input for Rectangle 1
print("RECTANGLE 1")
length1 = int(input("Enter the length of Rectangle 1: "))
breadth1 = int(input("Enter the breadth of Rectangle 1: "))
rect1 = Rectangle(length1, breadth1)
print(f"The area of Rectangle 1 is: {rect1.area()}")

# Input for Rectangle 2
print("\nRECTANGLE 2")
length2 = int(input("Enter the length of Rectangle 2: "))
breadth2 = int(input("Enter the breadth of Rectangle 2: "))
rect2 = Rectangle(length2, breadth2)
print(f"The area of Rectangle 2 is: {rect2.area()}")

# Compare Rectangles
print("\nNow Comparing The Rectangles")
if rect1 < rect2:
    print("The area of Rectangle 1 is less than Rectangle 2.")
elif rect2 < rect1:
    print("The area of Rectangle 2 is less than Rectangle 1.")
else:
    print("Both rectangles have the same area.")
```