UNIT 2

Challenge - 1

Implement a class called Bank Account that represents a bank account. The class should have private attributes for account number, account holder name, and account balance. Include methods to deposit money, withdraw money, and display the account balance Ensure that the account balance cannot be accessed directly from outside the class. Write a program to create an instance of the BankAccount class and test the deposit and withdrawal functionality.

PROGRAM:

```
class BankAccount:
    def __init__(self, account_number, account_holder_name, initial_balance=0.0):
        self.__account_number = account_number
        self.__account_holder_name = account_holder_name
        self.__account_balance = initial_balance


    def deposit(self, amount):
        if amount > 0:
            self.__account_balance += amount
            return f"Deposited ${amount}. New balance: ${self.__account_balance}"
        else:
            return "Invalid deposit amount. Amount must be greater than 0."


    def withdraw(self, amount):
        if amount > 0 and amount <= self.__account_balance:
            self.__account_balance -= amount
            return f"Withdrew ${amount}. New balance: ${self.__account_balance}"
        else:
            return "Invalid withdrawal amount or insufficient balance."
    def display_balance(self):
        return f"Account Balance for {self.__account_holder_name}: ${self.__account_balance}"



# Creating an instance of BankAccount
account = BankAccount("1234567890", "John Doe", 1000.0)


# Testing deposit and withdrawal functionality
print(account.display_balance())
print(account.deposit(500))
print(account.withdraw(200))
print(account.withdraw(1500))  # This should result in an error message
```

Challenge -2

- Implement a class called Player that represents a cricket player. The Player class should have a method called play() which prints “The player Is playing cricket” . Derive two classes, Batsman and Bowler, from the Player class. Override the play() method In each derived class to print “The batsman is batting” and “The bowler is bowling”, respectively, Write a program to create objects of both the Batsman and Bowler classes and call the play() method for each object.

PROGRAM:

```
class Player:
    def play(self):
        print("The player is playing cricket")
```

```
class Batsman(Player):
    def play(self):
        print("The batsman is batting")

class Bowler(Player):
    def play(self):
        print("The bowler is bowling")

# Create objects of Batsman and Bowler classes
batsman = Batsman()
bowler = Bowler()

# Call the play() method for each object
batsman.play()  # Output: The batsman is batting
bowler.play()   # Output: The bowler is bowling
```