Unit 2

Challenge 1 Q

Implement a class called BankAccount 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.

```
class BankAccount:
    def __init__(self, account_number, account_holder_name, initial_balance=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"${amount} deposited successfully."
        else:
            return "Invalid deposit amount. Please enter a positive amount."

    def withdraw(self, amount):
        if amount > 0 and amount <= self.__account_balance:
            self.__account_balance -= amount
            return f"${amount} withdrawn successfully."
        else:
            return "Invalid withdrawal amount or insufficient balance."
```

```
    def display_balance(self):
        return f"Account Holder:
{self.__account_holder_name}\nAccount
Number: {self.__account_number}\nAccount
Balance: ${self.__account_balance}"

# Example usage:
if __name__ == "__main__":
    # Creating a bank account
    my_account = BankAccount("123456",
"Archana", 1000)

    # Depositing money
    print(my_account.deposit(500))  # Output:
$500 deposited successfully.

    # Withdrawing money
    print(my_account.withdraw(300))  # Output:
$300 withdrawn successfully.
    print(my_account.withdraw(1200))  #
Output: Invalid withdrawal amount or
insufficient balance.

    # Displaying the account balance
    print(my_account.display_balance())
```

Output:

```
$500 deposited successfully.
$300 withdrawn successfully.
Invalid withdrawal amount or insufficient
balance.
Account Holder: Archana
Account Number: 123456
Account Balance: $200
```

Challenge 2 Q:

- 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.

```
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 and call the play() method for each
object.
if __name__ == "__main__":
    batsman = Batsman()
    bowler = Bowler()

    batsman.play()  # Output: The batsman is
batting.
    bowler.play()   # Output: The bowler is
bowling.
```

Output:

The batsman is batting.

The bowler is bowling.