**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