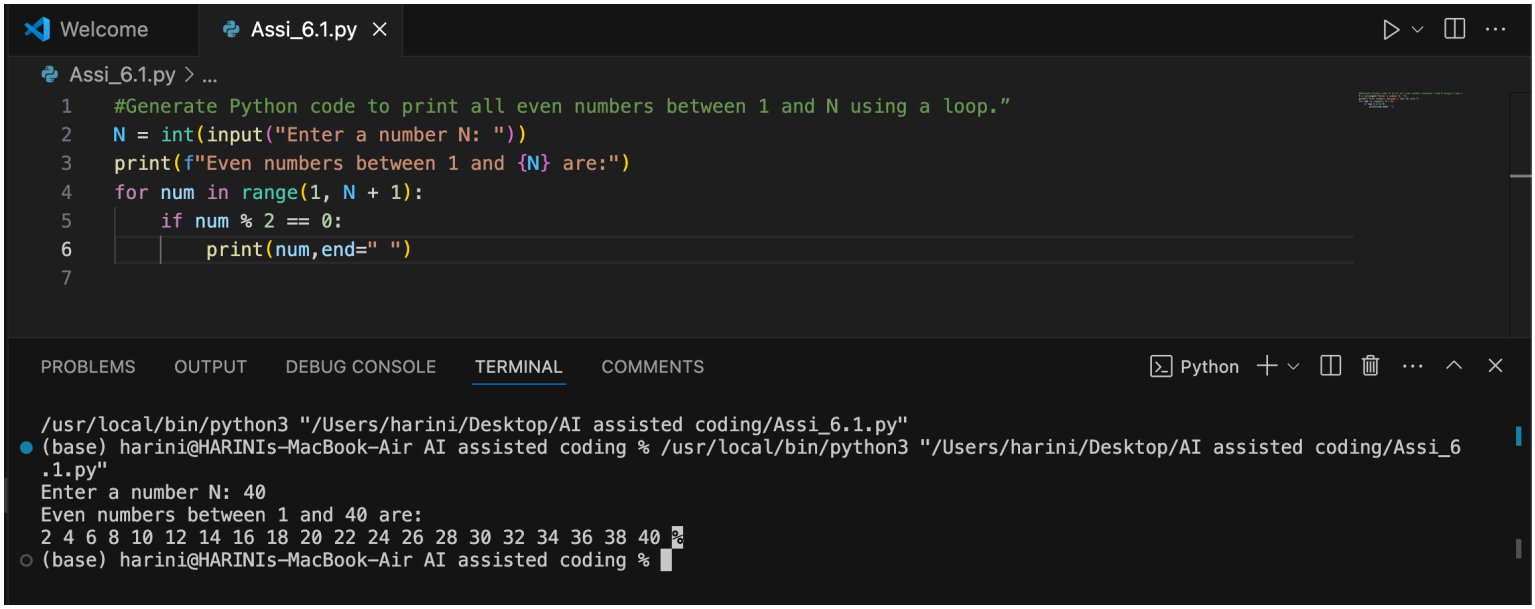
2303A510B7 (Harini)
Batch - 14
AI - Assisted Coding
Assignment - 6.1

Experiment 6: AI-Based Code Completion: Working with suggestions for classes, loops, conditionals

Task: Use an AI code completion tool to generate a loop-based
program.

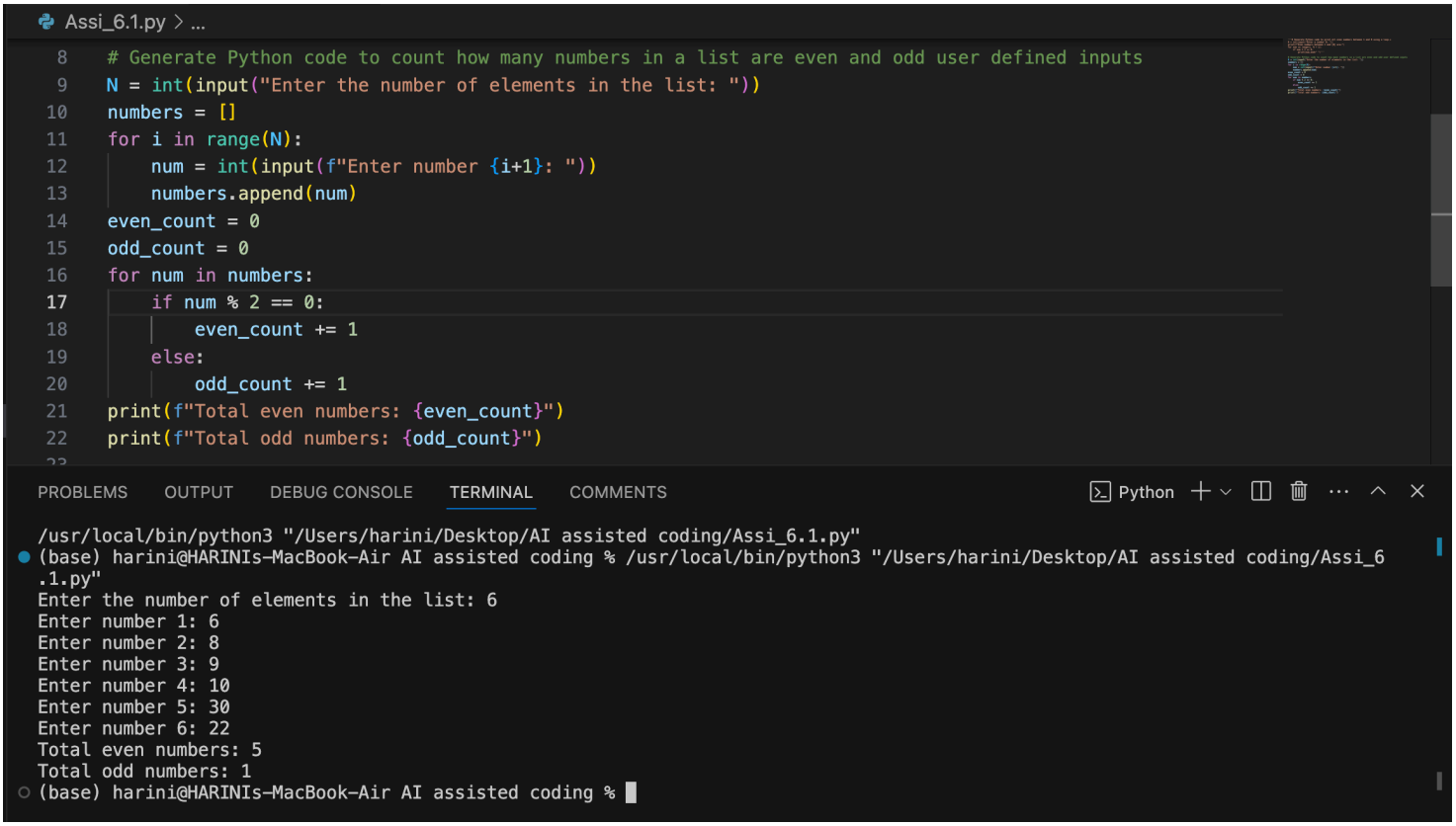
Prompt 1 : # Generate Python code to print all even numbers between 1 and N using a loop.”

Code & OutPut:



Prompt 2 : # Generate Python code to count how many numbers in a list are even and odd user defined inputs

Code & OutPut:



Prompt 3 : Generate a Python class User that validates age and email using conditional statements.

Code :

Assi_6.1.py > ...

```python
# Generate a Python class User that validates age and email using conditional statements
class User:
    def __init__(self, name, age, email):
        self.name = name
        self.age = age
        self.email = email

    def validate_age(self):
        if 0 < self.age < 120:
            return True
        else:
            return False

    def validate_email(self):
        if "@" in self.email and "." in self.email.split("@")[-1]:
            return True
        else:
            return False
# Example usage
n=int(input("Enter number of users to validate: "))
for i in range(n):
    name = input(f"Enter name of user {i+1}: ")
    age = int(input(f"Enter age of user {i+1}: "))
    email = input(f"Enter email of user {i+1}: ")
    user = User(name, age, email)
    if user.validate_age():
        print(f"{name}'s age is valid.")
    else:
        print(f"{name}'s age is invalid.")
    if user.validate_email():
        print(f"{name}'s email is valid.")
    else:
        print(f"{name}'s email is invalid.")
```

OutPut :

TERMINAL

```
/usr/local/bin/python3 "/Users/harini/Desktop/AI assisted cod
ing/Assi_6.1.py"
(base) harini@HARINIs-MacBook-Air AI assisted coding % /usr/l
ocal/bin/python3 "/Users/harini/Desktop/AI assisted coding/As
si_6
.1.py"
Enter number of users to validate: 2
Enter name of user 1: Harini
Enter age of user 1: 21
Enter email of user 1: hani@gmail.com
Harini's age is valid.
Harini's email is valid.
Enter name of user 2: Vishnu
Enter age of user 2: 21
Enter email of user 2: vishnu@gmail.com
Vishnu's age is valid.
Vishnu's email is valid.
```

Prompt 4: # Generate a Python class Student with attributes (name, roll number, marks) and methods to calculate total and average marks

Code:

```python
# Generate a Python class Student with attributes (name, roll number, marks) and methods
# to calculate total and average marks.”
class Student:
    def __init__(self, name, roll_number, marks):
        self.name = name
        self.roll_number = roll_number
        self.marks = marks  # marks should be a list of integers

    def calculate_total(self):
        return sum(self.marks)

    def calculate_average(self):
        if len(self.marks) == 0:
            return 0
        return self.calculate_total() / len(self.marks)
# Example usage
n=int(input("Enter number of students: "))
for i in range(n):
    name = input(f"Enter name of student {i+1}: ")
    roll_number = input(f"Enter roll number of student {i+1}: ")
    marks_input = input(f"Enter marks of student {i+1} separated by spaces: ")
    marks = list(map(int, marks_input.split()))
    student = Student(name, roll_number, marks)
    total_marks = student.calculate_total()
    average_marks = student.calculate_average()
    print(f"Student: {name}, Roll Number: {roll_number}, Total Marks: {total_marks}, Average Marks: {average_marks:.2f}")
```

Output:

```
TERMINAL                                                    Python

  /usr/local/bin/python3 "/Users/harini/Desktop/AI assisted co
  ding/Assi_6.1.py"
● (base) harini@HARINIs-MacBook-Air AI assisted coding % /usr/
  local/bin/python3 "/Users/harini/Desktop/AI assisted coding/
  Assi_6.1.py"
  Enter number of students: 2
  Enter name of student 1: Harini
  Enter roll number of student 1: 10B7
  Enter marks of student 1 separated by spaces: 89 90 75 80 99
  Student: Harini, Roll Number: 10B7, Total Marks: 433, Averag
  e Marks: 86.60
  Enter name of student 2: Vishnu
  Enter roll number of student 2: 10A0
  Enter marks of student 2 separated by spaces: 100 100 100 10
  0 100
  Student: Vishnu, Roll Number: 10A0, Total Marks: 500, Averag
  e Marks: 100.00
○ (base) harini@HARINIs-MacBook-Air AI assisted coding %
```

Prompt 5: # Generate a Python program for a simple bank account system using class, loops, and conditional statements.

Code:

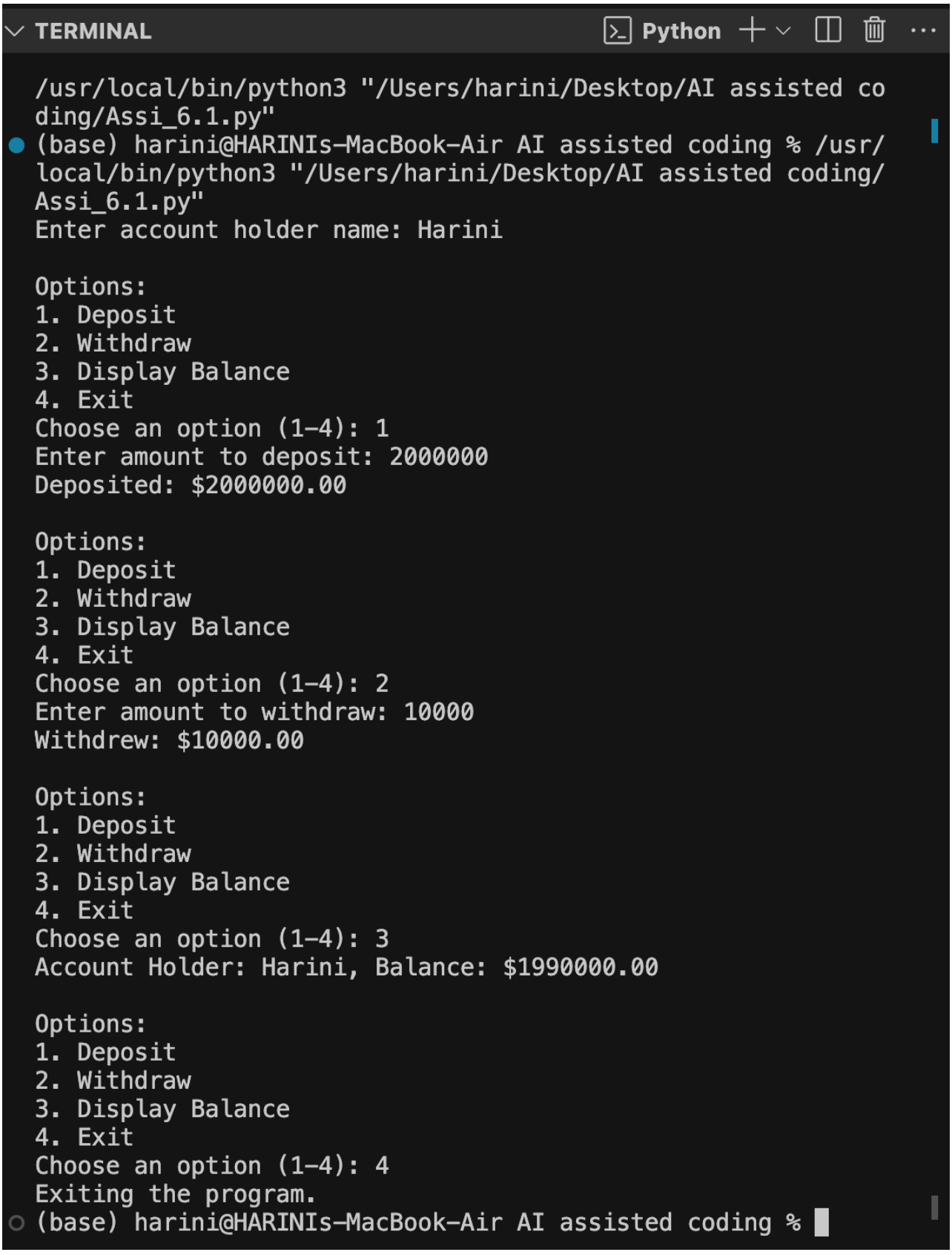
```python
# Generate a Python program for a simple bank account system using class, loops, and conditional statements.
class BankAccount:
    def __init__(self, account_holder, balance=0):
        self.account_holder = account_holder
        self.balance = balance

    def deposit(self, amount):
        if amount > 0:
            self.balance += amount
            print(f"Deposited: ${amount:.2f}")
        else:
            print("Deposit amount must be positive.")

    def withdraw(self, amount):
        if amount > 0:
            if amount <= self.balance:
                self.balance -= amount
                print(f"Withdrew: ${amount:.2f}")
            else:
                print("Insufficient funds.")
        else:
            print("Withdrawal amount must be positive.")

    def display_balance(self):
        print(f"Account Holder: {self.account_holder}, Balance: ${self.balance:.2f}")
# Example usage
account_holder = input("Enter account holder name: ")
account = BankAccount(account_holder)
while True:
    print("\nOptions:")
    print("1. Deposit")
    print("2. Withdraw")
    print("3. Display Balance")
    print("4. Exit")
    choice = input("Choose an option (1-4): ")
    if choice == '1':
        amount = float(input("Enter amount to deposit: "))
        account.deposit(amount)
    elif choice == '2':
        amount = float(input("Enter amount to withdraw: "))
        account.withdraw(amount)
    elif choice == '3':
        account.display_balance()
    elif choice == '4':
        print("Exiting the program.")
        break
    else:
        print("Invalid choice. Please try again.")
```

Output:


TERMINAL
Python
/usr/local/bin/python3 "/Users/harini/Desktop/AI assisted coding/Assi_6.1.py"
(base) harini@HARINIs-MacBook-Air AI assisted coding % /usr/local/bin/python3 "/Users/harini/Desktop/AI assisted coding/Assi_6.1.py"
Enter account holder name: Harini
Options:
1. Deposit
2. Withdraw
3. Display Balance
4. Exit
Choose an option (1-4): 1
Enter amount to deposit: 2000000
Deposited: $2000000.00
Options:
1. Deposit
2. Withdraw
3. Display Balance
4. Exit
Choose an option (1-4): 2
Enter amount to withdraw: 10000
Withdrew: $10000.00
Options:
1. Deposit
2. Withdraw
3. Display Balance
4. Exit
Choose an option (1-4): 3
Account Holder: Harini, Balance: $1990000.00
Options:
1. Deposit
2. Withdraw
3. Display Balance
4. Exit
Choose an option (1-4): 4
Exiting the program.
(base) harini@HARINIs-MacBook-Air AI assisted coding %