AI ASSISTED CODING

ASSIGNMENT-6.5

NAME: Mohammed Faisaluddin

H.T.NO:2303A52214

BATCH:36

Task Description #1 (AI-Based Code Completion for Conditional Eligibility Check)

Task: Use an AI tool to generate eligibility logic.

Prompt:

“Generate Python code to check voting eligibility based on age and citizenship.”

Expected Output:

- **AI-generated conditional logic.**
- **Correct eligibility decisions.**
- **Explanation of conditions.**

Code:

```
age = int(input("Enter your age: "))
citizenship = input("Are you a citizen? (yes/no): ")

if age >= 18 and citizenship.lower() == "yes":
    print("You are eligible to vote.")
else:
    print("You are not eligible to vote.")
```

OutPut :

```
Enter your age: 20
Are you a citizen? (yes/no): yes
You are eligible to vote.
```

Explanation :

- `age = int(input(...))`: Takes the user's age as input.
- `citizenship = input(...)`: Takes citizenship status.
- `if age >= 18 and citizenship.lower() == "yes":`
  Checks both conditions:
  - Age must be 18 or above
  - Citizenship must be "yes"
- Prints eligibility result based on conditions.

Task Description #2(AI-Based Code Completion for Loop-Based String Processing)

Task: Use an AI tool to process strings using loops.

Prompt:

"Generate Python code to count vowels and consonants in a string using a loop."

Expected Output:

• AI-generated string processing logic.

• **Correct counts.**

• **Output verification.**

Code :

```
text = input("Enter a string: ")
vowels = "aeiouAEIOU"
vowel_count = 0
consonant_count = 0

for char in text:
    if char.isalpha():
        if char in vowels:
            vowel_count += 1
        else:
            consonant_count += 1

print("Vowels:", vowel_count)
print("Consonants:", consonant_count)
```

Output :

```
Enter a string: hello world
Vowels: 3
Consonants: 7
```

Explanation :

- Loops through each character in the string.
- `isalpha()` ensures only letters are counted.
- Vowels are checked using a predefined string.
- Counts vowels and consonants separately.

Task Description #3 (AI-Assisted Code Completion Reflection

Task)

Task: Use an AI tool to generate a complete program using classes,

loops, and conditionals.

Prompt:

“Generate a Python program for a library management system using classes, loops, and conditional statements.”

Expected Output:

• Complete AI-generated program.

• Review of AI suggestions quality.

• Short reflection on AI-assisted coding experience.

Code :

```
class Library:
    def __init__(self):
        self.books = []

    def add_book(self, book):
        self.books.append(book)
        print(book, "added to library.")

    def display_books(self):
        if not self.books:
            print("No books available.")
        else:
            for book in self.books:
                print(book)

library = Library()

while True:
    print("\n1. Add Book\n2. Display Books\n3. Exit")
    try:
        choice = int(input("Enter choice: "))
```

```
while True:
    print("\n1. Add Book\n2. Display Books\n3. Exit")
    try:
        choice = int(input("Enter choice: "))
    except ValueError:
        print("Invalid input. Please enter a number (1, 2, or 3).")
        continue

    if choice == 1:
        book_name = input("Enter book name: ")
        library.add_book(book_name)
    elif choice == 2:
        library.display_books()
    elif choice == 3:
        print("Exiting...")
        break
    else:
        print("Invalid choice. Please enter 1, 2, or 3.")
```

OutPut :

```
...
    1. Add Book
    2. Display Books
    3. Exit
    Enter choice: 1
    Enter book name: Rich dad and Poor Dad
    Rich dad and Poor Dad added to library.

    1. Add Book
    2. Display Books
    3. Exit
    Enter choice: 2
    Rich dad and Poor Dad

    1. Add Book
    2. Display Books
    3. Exit
    Enter choice: 3
    Exiting...
```

Explanation :

This program uses **classes, loops, and conditional statements** to manage a small library.

- A **class Library** is created to store and manage books.
- The __init__() method initializes an empty list to store book names.
- The add_book() method adds a new book to the library.
- The display_books() method shows all available books using a loop.
- A **while loop** displays a menu repeatedly until the user chooses to exit.
- **Conditional statements (if-elif-else)** handle user choices like adding or displaying books.

Task Description #4

Prompt: "Generate a Python class to mark and display student attendance using loops."

Code :

```
class Attendance:
    def __init__(self):
        self.students = {}

    def mark_attendance(self, name, status):
        self.students[name] = status

    def display_attendance(self):
        for name, status in self.students.items():
            print(name, ":", status)

attendance = Attendance()

attendance.mark_attendance("Alice", "Present")
attendance.mark_attendance("Bob", "Absent")

attendance.display_attendance()
```

OutPut :

```
Alice : Present
Bob : Absent
```

Explanation :

- Uses a dictionary to store student names and attendance.
- Loop displays attendance for all students.

Task Description #5 (AI-Based Code Completion for Conditional Menu Navigation)

Prompt: “Generate a Python program using loops and conditionals to simulate an ATM menu.”

Code :

```
balance = 1000

while True:
    print("\nATM Menu")
    print("1. Check Balance")
    print("2. Deposit")
    print("3. Withdraw")
    print("4. Exit")

    choice = int(input("Enter choice: "))

    if choice == 1:
        print("Balance:", balance)
    elif choice == 2:
        amount = int(input("Enter deposit amount: "))
        balance += amount
        print("Amount deposited.")
    elif choice == 3:
        amount = int(input("Enter withdrawal amount: "))
        if amount <= balance:
            balance -= amount
            print("Please collect cash.")
        else:
```

```
            print("Please collect cash.")
        else:
            print("Insufficient balance.")
    elif choice == 4:
        print("Thank you!")
        break
    else:
        print("Invalid choice")
```

OutPut :

```
ATM Menu
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter choice: 1
Balance: 1000

ATM Menu
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter choice: 2
Enter deposit amount: 1000
Amount deposited.
```

```
ATM Menu
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter choice: 3
Enter withdrawal amo
Please collect cash.

ATM Menu
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter choice: 4
Thank you!
```

Explanation :

This program simulates an **ATM system** using **loops and conditionals**.

- A variable `balance` stores the current account balance.
- A **while loop** keeps the ATM menu running until the user exits.
- The menu offers four options:
    1. Check Balance
    2. Deposit Money
    3. Withdraw Money
    4. Exit
- **Conditional statements** process the selected option.
- Withdrawal checks if sufficient balance is available before allowing the transaction.