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School of Computer Science and Artificial Intelligence

Lab Assignment # 6.5

Program	**: B. Tech (CSE)**
Specialization	**:**
Course Title	**: AI Assisted coding**
Course Code	**:**
Semester	**: II**
Academic Session	**: 2025-2026**
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Enrollment No.	**: 2403A51L32**
Batch No.	**: 52**
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Task 1: Use an AI tool to generate eligibility logic.

Prompt : "Generate Python code to check voting eligibility based on age and citizenship."

AI-generated conditional logic.

Explanation of conditions

- The program takes age and citizenship status as input.
- The `if` condition checks two rules
  - Age must be 18 or above
  - Citizenship must be "yes"

- The logical operator `and` ensures both conditions must be true.
- If both conditions are satisfied, the user is eligible to vote.
- Otherwise, the program prints not eligible.

Explanation of conditions.

- Age = 20, Citizen = yes → **Eligible**
- Age = 16, Citizen = yes → **Not Eligible**

Task 2: Use an AI tool to process strings using loops.

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

AI-Generated Code

```
text = input("Enter a string: ").lower()
vowels = "aeiou"
vowel_count = 0
consonant_count = 0

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

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

Correct counts.

- Converts input to lowercase
- Uses for loop to read each character
- Checks: Alphabet → vowel or consonant
- Counts correctly

Output verification.

```
Enter a string: ROHAN
Vowels: 2
Consonants: 3
```

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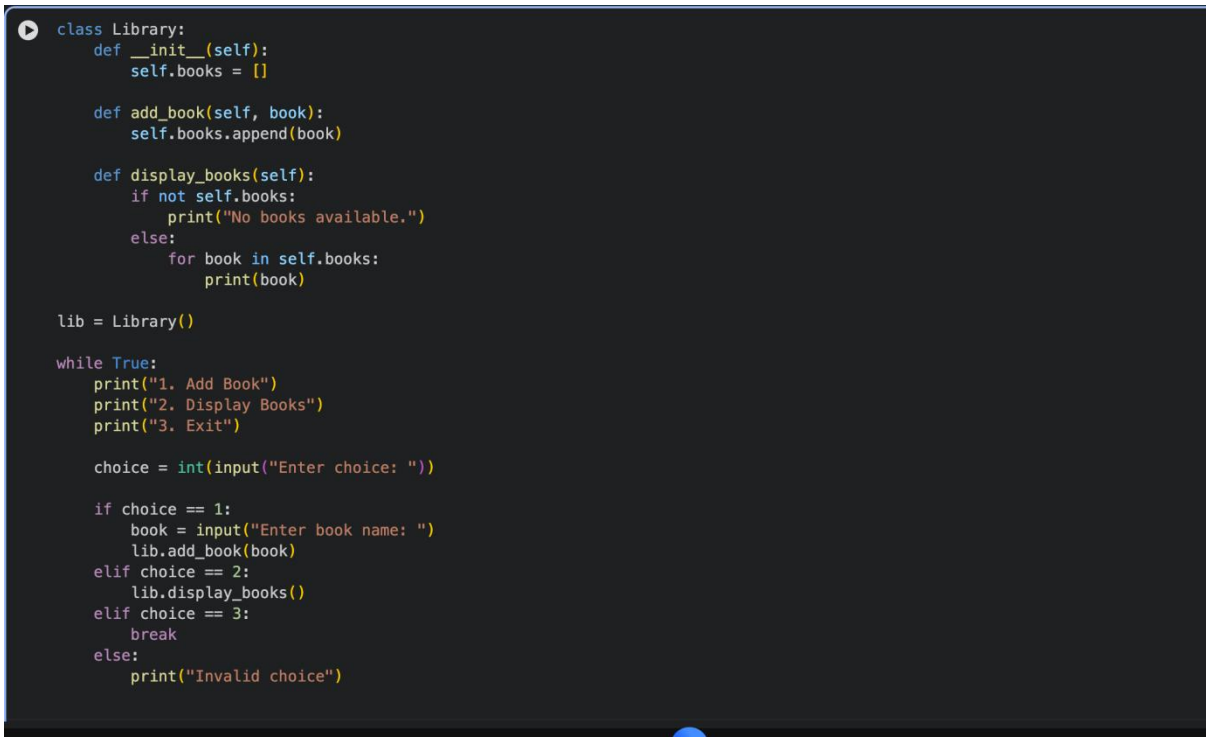
Task 3: Use an AI tool to generate a complete program using classes,loops, and conditionals.

Prompt: "Generate a Python program for a library management system using classes, loops, and conditional statements."

AI-generated conditional logic.



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

    def add_book(self, book):
        self.books.append(book)

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

lib = Library()

while True:
    print("1. Add Book")
    print("2. Display Books")
    print("3. Exit")

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

    if choice == 1:
        book = input("Enter book name: ")
        lib.add_book(book)
    elif choice == 2:
        lib.display_books()
    elif choice == 3:
        break
    else:
        print("Invalid choice")
```

Review of AI suggestions quality.

- The AI correctly generated:
  - A class (`Library`)
  - Loop (`while True`) for menu repetition
  - Conditional statements (`if-elif-else`) for user choices
- Code is easy to understand and readable
- Uses basic data structures (list) efficiently
- Minor improvement needed:
  - Input validation can be added.
  - Exception handling for invalid inputs.

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Short reflection on AI-assisted coding experience.

AI-assisted code completion helped in quickly generating a structured and functional program. It reduced development time and provided a clear logical flow using classes, loops, and conditionals. However, reviewing and improving the AI-generated code is necessary to ensure correctness, efficiency, and better error handling. AI should be used responsibly as a support tool while maintaining strong programming fundamentals.

Task 4: Use an AI tool to generate an attendance management class.

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

AI-generated attendance logic.

```python
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)


# ---------- Test Case 1 ----------
att = Attendance()
att.mark_attendance("Alice", "Present")
att.mark_attendance("Bob", "Absent")
att.display_attendance()

# Expected Output:
# Alice : Present
# Bob : Absent


# ---------- Test Case 2 ----------
att.mark_attendance("Charlie", "Present")
att.display_attendance()

# Expected Output:
# Alice : Present
# Bob : Absent
# Charlie : Present


# ---------- Test Case 3 ----------
att.mark_attendance("Bob", "Present")
att.display_attendance()

# Expected Output:
# Alice : Present
# Bob : Present
# Charlie : Present
```

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Correct display of attendance.

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

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

    def display_attendance(self):
        for name in sorted(self.students):
            print(name, ":", self.students[name])


# Test Case
att = Attendance()
att.mark_attendance("Alice", "Present")
att.mark_attendance("Bob", "Absent")
att.mark_attendance("Charlie", "Present")
att.display_attendance()

# Expected Output:
# Alice : Present
# Bob : Absent
# Charlie : Present
```

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

Testcases.

```
# ---------- Test Case 1 ----------
att = Attendance()
att.mark_attendance("Alice", "Present")
att.mark_attendance("Bob", "Absent")
att.display_attendance()

# Expected Output:
# Alice : Present
# Bob : Absent


# ---------- Test Case 2 ----------
att.mark_attendance("Charlie", "Present")
att.display_attendance()

# Expected Output:
# Alice : Present
# Bob : Absent
# Charlie : Present


# ---------- Test Case 3 ----------
att.mark_attendance("Bob", "Present")
att.display_attendance()

# Expected Output:
# Alice : Present
# Bob : Present
# Charlie : Present
```

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

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Task 5: Use an AI tool to complete a navigation menu.

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

AI-generated attendance logic.

```
balance = 1000

while True:
    print("\n1. Check Balance")
    print("2. Deposit")
    print("3. Withdraw")
    print("4. Exit")

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

    if choice == 1:
        print("Balance:", balance)

    elif choice == 2:
        amount = int(input("Enter deposit amount: "))
        balance += amount
        print("Amount deposited successfully")

    elif choice == 3:
        amount = int(input("Enter withdraw amount: "))
        if amount <= balance:
            balance -= amount
            print("Please collect your cash")
        else:
            print("Insufficient balance")

    elif choice == 4:
        print("Thank you for using ATM")
        break

    else:
        print("Invalid option")
```

Correct option handling.

1. Option **1** → Displays balance
2. Option **2** → Deposits amount
3. Option **3** → Withdraws if balance is sufficient
4. Option **4** → Exits menu
5. Invalid input → Error message

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Output verification.

```
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter your choice: 2
Enter deposit amount: 2000
Amount deposited successfully

1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter your choice: 1
Balance: 3000

1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter your choice: 3
Enter withdraw amount: 3000
Please collect your cash

1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter your choice: 1
Balance: 0

1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter your choice: 4
Thank you for using ATM
```