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Assignment :- 6.5

AI-Based Code Completion Tasks

Task 1: Conditional Eligibility Check

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

Explanation:
This program takes age and citizenship as input and uses conditional statements to determine voting eligibility.

Python Code:

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

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

Output:-

```
Enter your age: 21
Are you a citizen? (yes/no): yes
You are eligible to vote.
```

Task 2: Loop-Based String Processing

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

Explanation:
This program processes a string using a loop and counts vowels and consonants.

Python Code:

```
text = input("Enter a string: ").lower()
vowels = 0
consonants = 0

for ch in text:
    if ch.isalpha():
        if ch in "aeiou":
            vowels += 1
        else:
            consonants += 1

print("Vowels:", vowels)
print("Consonants:", consonants)
```

Output:-

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

Task 3: Library Management System

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

Explanation:
This program uses a class to manage books with menu-driven operations.

Python Code

```
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("\n1. Add Book\n2. Display Books\n3. 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")
```

Output:-

```
...
    1. Add Book
    2. Display Books
    3. Exit
    Enter choice: 1
    Enter book name: will you love me anyway

    1. Add Book
    2. Display Books
    3. Exit
    Enter choice: 2
    will you love me anyway

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

Task 4: Attendance Management System

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

Explanation:
This program records attendance using a dictionary inside a class.

Python Code:

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

    def mark_attendance(self, name):
        self.records[name] = "Present"

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

att = Attendance()

n = int(input("Enter number of students: "))
for i in range(n):
    name = input("Enter student name: ")
    att.mark_attendance(name)

att.display_attendance()
```

Output:-

```
Enter number of students: 2
Enter student name: Bharath
Enter student name: Sreeja
Bharath : Present
Sreeja : Present
```

Task 5: ATM Menu Navigation

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

Explanation:
This program simulates basic ATM operations using a loop and conditionals.

Python Code:-

```
balance = 5000

while True:
    print("\n1. Check Balance\n2. Deposit\n3. Withdraw\n4. Exit")
    choice = int(input("Enter choice: "))

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

    elif choice == 2:
        amount = int(input("Enter deposit amount: "))
        balance += amount

    elif choice == 3:
        amount = int(input("Enter withdrawal amount: "))
        if amount <= balance:
            balance -= amount
        else:
            print("Insufficient balance")

    elif choice == 4:
        break

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

Output:-

```
...
    1. Check Balance
    2. Deposit
    3. Withdraw
    4. Exit
    Enter choice: 1
    Balance: 5000

    1. Check Balance
    2. Deposit
    3. Withdraw
    4. Exit
    Enter choice: 2
    Enter deposit amount: 5000

    1. Check Balance
    2. Deposit
    3. Withdraw
    4. Exit
    Enter choice: 1
    Balance: 10000

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