Program Language

Python Project

Appointment Manager Program

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Introduction

This project developed to apply the concepts we learned in Python programming. Implementing a simple, functional and modular Python program using variables, loops, conditions, list, string and functions.

We selected a real –world problem managing daily appointment, busy day and many distracted, we need simple applications to help us to arrange our daily appointments.

To store, search and editing, instead of using complex applications, Python helps us to manage these tasks.

Problem Definitions:

Managing multiple appointments is very hard and struggling for many people.

Even using notes, paper or special models to write.

The problem include:

Forgetting times and dates, unable to update or delete appointments, difficulty in organizing appointments.

Importance for the program:

Building simple program in Python to manage appointments using programming concepts. The ability to easy solution, clean, minimal error. Providing simple, fast and free distractions. Perfect efficient tool

Program Objective:

The main objective for appointment Manager:

1- Adding allow user to add a new appointments.

2- Viewing allow user to review all appointments.

3- Deleting allow to delete any appointments.

4- Editing allow user to modify all appointments.

5- Searching allow user to for ant appointments.

6-Using Python concepts : Input /Output , Loops , Lists , Strings , Functions and Conditions.

System Design:

Using Python Function the program, dividing the program into small tasks follows a modular design, every function is separated for its function to achieve clear and the ability to continue.

Data Structure:

A Python list is used to store all appointments:

appointments = []

```
appointments = []
next_id = 1  # ID counter for appointments
```

each appointment is store as a dictionary including

ID ,Date, Time and Description .allowing access , deleting and modifications

```
appointment = {
    "id": next_id,
    "date": date,
    "time": time,
    "description": description
}
```

Main Function:

Purpose	Function
Searching by date	Search_ appointment ()
Adding a new appointment	Add_ appointment ()
Displaying all appiontments	View _ appointments ()
Deleting by ID	delet_ appointment ()
Editing appiontment	Edit _ appointment ()
Handling user inertaction	Main _ menu ()

```
appointments = []
next_id = 1  # ID counter for appointments

def add_appointment():
    global next_id
    print("\n--- Add New Appointment ---")
    date = input("Enter date (YYYY-MM-DD): ")
    time = input("Enter time (HH:MM): ")
    description = input("Enter description: ")

    appointment = {
        "id": next_id,
        "date": date,
        "time": time,
        "description": description
    }

    appointments.append(appointment)
    print(f"Appointment added successfully with ID: {next_id}")
    next_id += 1
```

Control Structure:

The program uses:

Loops:

For loop to search or display appointments.

While loop for menu.

Conditions:

To check user validation or choices.

Implementation:

Input and Output: The user interact with console throw input () , print () .

```python
def add_appointment():
    global next_id
    print("\n--- Add New Appointment ---")
    date = input("Enter date (YYYY-MM-DD): ")
    time = input("Enter time (HH:MM): ")
    description = input("Enter description: ")
```

List and Dictionaries:

Each appointment is represented as a dictionary and appointments are stored in a List.

Loops:

Keeping the main menu active throw loops until the user choose to exist.

Error Handling:

The project cover: Empty lists (no appointments), Invalid ID, Editing the existing appointments.

Main menu:

The menu include 6 options and calls the appropriate functions using conditions.

```
===== Appointment Manager =====
1. Add appointment
2. View all appointments
3. Search appointments by date
4. Delete appointment
5. Edit appointment
6. Exit
==============================
Enter your choice (1-6): ↑↓ for history. Search history with c-↑/c-↓
```

Testing:

To ensure the program work correctly serval test were performed:

1- Adding appointments

(2025-01-1, 10:15 PM, Dentist)

Result: Appointment saved with ID =1

```
------------------------------
Enter your choice (1-6):  1

--- Add New Appointment ---
Enter date (YYYY-MM-DD):  1/1/2025
Enter time (HH:MM):  10:15PM
Enter description:  Dental
Appointment added successfully with ID: 1
```

2- Viewing appointments

Result: Display all saved appointments.

3- Searching by Date

Input: 2025-01-1

Result: Displayed the correct appointment.

```
==============================
Enter your choice (1-6):  2

--- All Appointments ---
ID: 1
Date: 1/1/2025
Time: 10:15PM
Description: Dental
-------------------------
```

4- Deleting

Input: ID=1

Result: appointment erased .

```
==============================
Enter your choice (1-6):  4

--- Delete Appointment ---
Enter appointment ID to delete: 1
```

5- Editing

Input: ID =2 , Changing the date from 10:15PM to 02:30PM

Result: appointment updated .

```
-------------------------
ID: 2
Date: 1/1/2025
Time: 02:30PM
Description: Sport
```

Conclusion:

The program solved a real-world problem by providing organized appointments manger, demonstrating the use of Python programming concepts. All requirements were defined : Input / output , conditions , Loops , Lists , String , Functions .

The program runs smoothly without error and provides a user friendly experiences the program

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