SYNOPSIS

Project Title: MEDICS: Medical Examination and Diagnosis Information Care System
Language Used: Python
Libraries Used: Tkinter, Pandas, Pillow (PIL), OpenPyXL, Datetime, Textwrap, OS
Database Used: Excel-based storage (database.xlsx)

Overview:

The MEDICS system is a comprehensive healthcare management application developed in Python using Tkinter for the graphical user interface. It serves as an interactive platform connecting patients and doctors, facilitating symptom-based diagnosis, department mapping, and appointment scheduling in a digital, user-friendly format. The system simplifies healthcare workflow by allowing patients to input symptoms, automatically match them to the appropriate medical department, and select an available doctor for consultation. It also enables doctors to manage their daily appointments and mark patient consultations as completed.

Objective:

The primary objective of this project is to automate and streamline the medical appointment and diagnosis process through digital means. The program bridges the communication gap between patients and doctors while ensuring accurate symptom categorization and efficient scheduling.

Key Features:

1. **Dual User System:** Patients can register, log in, enter symptoms, and book appointments. Doctors can view assigned patients, track appointment schedules, and manage daily consultations.
2. **Symptom-Based Diagnosis:** Uses an extensive symptom-disease mapping to identify the appropriate medical department, supporting over 100+ symptoms.
3. **Doctor Matching and Booking:** Patients can view and choose doctors based on specialization and city. Appointment slots are dynamically managed with capacity limits.
4. **Appointment Management:** Doctors receive automatically assigned patient lists for each day, with options to mark patients as 'Done' or move to the next patient.
5. **Persistent Data Handling:** All user and appointment data is stored securely in an Excel database using Pandas and OpenPyXL.
6. **User-Friendly Interface:** Designed using Tkinter and Pillow for intuitive visuals and seamless interaction.

Modules of the Project:

1. Login and Signup Module
2. Symptom Analysis Module
3. Doctor Selection Module
4. Appointment Scheduling Module
5. Doctor Dashboard Module
6. Data Management Module

Technology Stack:

Frontend/UI: Tkinter (Python GUI Library)
Backend Logic: Python
Database: Excel sheet (database.xlsx)
Supporting Libraries: Pandas, OpenPyXL, Pillow (PIL), Datetime, OS, Textwrap

Conclusion:

The MEDICS system effectively digitizes the patient-doctor interaction and medical appointment process. It demonstrates how AI-inspired mapping of symptoms can be integrated into traditional healthcare systems to enhance accessibility and efficiency. Future improvements may include AI-based symptom prediction, cloud integration, and real-time hospital management functionalities.