

## Stage 1 – Project Proposal (to be approved)

Submit a proposal describing the assigned project theme, the real-life problem, program features, data to be stored in files, and the initial list of classes. Approval is required before moving forward. This proposal has to be submitted within 1 week of the assignment of the Project titles.

So, based on what we have to submit, these are the various requirements for the project proposal:

- Describe the assigned project theme(Clinic Appointment & Patient Management System)
- The real-life problem
- The Program features
- Data to be stored in files
- Initial list of classes.

### **Group B(Clinic Appointment & Patient Records System)**

Team Members:

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#### 1. DESCRIPTION OF THE ASSIGNED PROJECT THEME

So we have been tasked with creating a Clinic Appointment & Patient Management System. This will require us to create a simple digital system that can help the clinic to not only store patients' details safely but also arrange appointments in a more organized way. Hence, the program will allow clinic staff to add new patients, to be able to schedule appointments, view those appointments, and also search for patients easily without having to stress themselves.

#### 2. REAL-LIFE PROBLEM

As far as we know, a lot of small clinics still write patients' information and appointments in notebooks, papers, etc., which can easily get lost or mixed up. When a lot of patients visit the clinic in one day, the staff most of the time struggle to remember who booked earlier, or which doctor the patient wanted to see, or even whether a patient visited before. This causes a lot of confusion and delays. Hence, our system is going to help make record-keeping faster and also help to reduce errors.

### 3. FEATURES OF THE PROGRAM

- Patient Registration: Allows the user to capture and save a new patient's personal details (Name, ID, Contact Info) and basic medical context.
- Appointment Scheduling: Enables the user to book a specific time slot for a patient, assigning them to a doctor, and recording the purpose of the visit.
- Appointment Type/Department Selection: Allows staff to categorize appointments by type (X-Ray, Physiotherapy, Dental, General Consultation, Specialist) to better organize clinic workflow and resource allocation.
- Appointment Viewing: Provides a dashboard to view a list of all scheduled appointments, sorted by date or time, to visualize the clinic's daily workflow.
- Conflict Detection: Automatically checks for scheduling conflicts to prevent double-booking of doctors at the same time slot, ensuring efficient appointment management.
- Patient Search: A lookup function that allows staff to quickly retrieve a patient's record using their unique Patient ID or Full Name.
- Appointment Search: A comprehensive lookup function that allows staff to:  
  
Search appointments by Patient ID or Doctor ID  
View all appointments
- Cancel Appointment: Allows the user to remove an appointment from the schedule if a patient cancels, freeing up the slot for others and keeping records accurate.

### 4. DATA TO BE STORED IN FILES

To ensure data persistence (data is saved even after the program closes), the system will utilize text files (e.g., .txt or .csv) to store the following:

#### A. patients.csv (Patient Database)

- Patient ID: A unique identifier for the patient.
- Full Name: The name of the patient.
- Age/DOB: To track patient demographics.
- Contact Number: For appointment reminders/communication.
- Gender: Basic demographic info.

#### B. appointments.csv (Appointment Log)

- Appointment ID: A unique tracking number for the booking.
- Patient ID: Links the appointment to a specific patient.
- Date & Time: When the appointment is scheduled.
- Doctor ID/Name: The specific doctor assigned.
- Appointment Type/Department: Category of appointment (X-Ray, Physio, Dental, General, Specialist).

- Purpose: The reason for the visit (e.g., Consultation, Check-up, Follow-up).
- Status: Active/Cancelled (for tracking appointment state).

#### C. doctors.csv (Doctor Database)

- Doctor ID: Unique identifier for each doctor.
- Doctor Name: Full name of the doctor.
- Specialty/Department: Area of specialization (General, Dental, Physiotherapy, Radiology, etc.).
- Available Days: Days the doctor is available (e.g., Mon-Wed-Fri).

### 5. INITIAL LIST OF PLANNED CLASSES

The program will be structured using Object-Oriented Programming (OOP) principles with the following classes:

#### Patient Class:

- Responsibility: Represents an individual patient.
- Attributes: patient\_id, name, age, contact, gender.
- Methods: get\_details(), update\_contact().

#### Appointment Class:

- Responsibility: Represents a single booking event.
- Attributes: appointment\_id, patient\_id, doctor\_id, date, time, appointment\_type, purpose, status.
- Methods: reschedule(), cancel(), get\_appointment\_summary(), update\_status().

#### ClinicManager (Main System Class):

- Responsibility: Handles the overall logic, file handling, and interaction between patients and appointments.
- Attributes: Lists of patients and appointments.
- Methods: add\_patient(), add\_doctor() - book\_appointment(), cancel\_appointment(), reschedule\_appointment() - check\_scheduling\_conflict() - search\_patient(), search\_appointment\_(), view\_appointments\_ - save\_data\_to\_file(), load\_data\_from\_file()

#### Doctor Class:

- Responsibility: Represents a doctor in the clinic.
- Attributes: doctor\_id, name, specialty, available\_days. Methods: get\_doctor\_info(), check\_availability().

### Facilitator Approval:

Approved? YES / NO

Feedback: Make sure you also have some appointment types. e.g X-RAY or appointment for Physio, or Dental, or with a specialist...

Be sure to check that there are no conflicts in the appointments. You should also be able to search for appointments for a specific department or doctor.

\_\_\_\_\_  
Date: \_\_\_\_\_