Report: Medical Office Management Application

Date: January,10 2025.

1. Introduction

Problem Statement

Managing a medical office is a complex task that requires rigorous organization and high efficiency to ensure quality care for patients. Manual processes are prone to human errors, delays, and a lack of precise tracking. Therefore, it is essential to automate these processes to improve reliability and optimize human effort.

Main Objective

The main goal of this software is to organize and automate the management of activities in a medical office. This includes managing medical records, appointments, patient files, and generating prescriptions and medical certificates.

Benefits

- Reduction of human errors.
- Time-saving and efficiency for doctors and staff.
- Accurate tracking of patient medical information.
- Improved patient experience through smooth and professional management.

2. Requirements Analysis

2.1 Functional Requirements

1. **Medical Record Management and Tracking**

- Creation, modification, and consultation of medical records.
- History of consultations and treatments.

2. **Appointment Management**
    - Recording appointments with patient information (name, surname, date, time).
3. **Patient File Management**
    - Creation of files including personal data, medical, and surgical history.
4. **Document Generation**
    - Generation of prescriptions.
    - Generation of medical certificates.

2.2 Non-Functional Requirements

- Intuitive and ergonomic user interface.
- Multi-platform accessibility (desktop and mobile).
- Patient data security through an authentication system.

3. Design

Use Cases

Each profile (secretary, doctor) will have distinct functionalities:

- **Secretary:** Management of appointments and patient files.
- **Doctor:** Consultation of medical records, editing prescriptions, and certificates.

Class Description

1. **Patient Class**
    - Attributes: id, firstname, lastname, age, gender, phonenumber, email, a list of allergies, and a list of medical history.
2. **Appointment Class**

- Attributes: id, firstname, lastname, date, reason (String), isDone (boolean), isNotShow (boolean).

3. **MedicalRecord Class**
    - Attributes: id, name, firstname, dateOfBirth, gender, address, phone number.
4. **DossierMedicale Class**
    - Attributes: same as most of MedicalRecord attributes with additional attributes for family history, personal history, surgical history.
5. **MedicalCertificate Class**
    - Attributes: id, name, firstname, type, age, gender, from (date), to (date), patientId.

4. Development

Technologies Used

1. **Language:** Dart for managing business logic.
2. **Frontend Framework:** Flutter for developing a modern, responsive, and multi-platform user interface.

Description of Main APIs

1. **Mailer service API**
    - Sends emails to patients (certificates).

5. Features

5.1 Medical Record Management

- Creation, modification, and consultation of records.
- Adding observations and treatments by the doctor.

5.2 Appointment Management

- Scheduling appointments through an intuitive interface.

- Filtering concept that organizes appointments time (time management).

5.3 Patient File Management

- Storing personal information (name, surname, phone, email …).
- Medical history, including antecedents and constants.

5.4 Document Generation

- **Prescriptions:** Details of medications, doses, and duration.
- **Medical Certificates:** Customized medical certificates.

6. Conclusion and Perspectives

Summary of Benefits

This software significantly improves the management and organization of a medical office. It reduces human errors, saves considerable time, and ensures precise tracking of patients.

Possible Future Improvements

- Integration of a mobile application for patients, enabling online appointment scheduling.
- Addition of data analysis for overall health tracking of patients.
- Enhanced security through the integration of technologies such as data encryption.

- University of science and technology Houari Boumediene.
- Authors :[Dahdah Leticia & Louail Wissam & Moussaoui Meriem Nada & Ziane Fatima Zohra] .