DocHelp

PROJECT SYNOPSIS

OF MINOR PROJECT

BACHELOR OF TECHNOLOGY

INFORMATION TECHNOLOGY

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1. INTRODUCTION

1.1 Brief Introduction

DocHelp is a flutter app build for helping Doctor, Patient and Staff. It is made in flutter framework which uses dart language. It is difficult to manage the patients by direct paper appointment. Over the last two decades, the health care has become the most important healthcare service in many developed countries. It is difficult to get appointments by direct contact to the hospital and standing in a queue. the main concept of this project is to get easy appointments through online application which resolves the problem to the patients.

Objectives of Project-

- A flutter app designed for helping doctor, patient and staff.
- Allows staff to manage patients by maintaining a FIFO queue based on the arrival of patient.
- Allow patients to consult a doctor either through an online consultation or direct appointment. Also, will let patients know their expected time of appointment.
- Allow doctor to attend patients either in a direct appointment or online consultation.
- Patients can know their expected time of appointment.

1.2 Technologies used

1) Flutter
   - Mobile UI framework for creating native apps in Android and IOS
   - Single code base (Dart) means we only have to write our app once for multiple devices.

   Flutter is used because-

   - Only 1 code base
   - Good layout methodology borrowed from responsive web
   - Very smooth and quick experience when running apps
   - Works well with firebase as backend
   - Uses dart which is very easy language to pick up
   - Uses material design out-of-box
   - Great docs & guides on flutter website

2) Dart

   Dart is a client-optimized programming language for apps on multiple platforms. It is developed by Google and is used to build mobile, desktop, server, and web applications. Google has introduced Flutter for native mobile app development on both Android and iOS. Flutter is a mobile app SDK, complete with framework, widgets, and tools, that gives developers a way to build and deploy mobile apps, written in Dart. Flutter works with Firebase and other mobile app SDKs, and is open source.

3) Machine Learning

   Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves.

1.3 Field of Project

Medical appointment and consultation is of necessity in the field of medicine which gives the doctor the opportunity to access, examine, test and diagnose a patient of an ailment or disease either in an online way or through face-to-face appointment.

Various researches have been made on this domain whereby some researches allow a patient to book an appointment by sitting at home and then visiting the clinic.
Hence, this prompted to make a software that could handle both online consultation and offline appointments. Also, a patient can know the expected time of his appointment and the number of patients waiting in queue before him on a real-time basis.

This app will allow the patients to have a real time scheduling of appointments with a doctor and also allows patient and doctors to come online and have conversation and interact together.

2. Feasibility Study

2.1 Technical Feasibility

For Staff, Patient and Doctor login, google_sign_in package is used. For firebase authentication and cloud firestore, firebase_auth and cloud_firestore package is used. For payment gateway, razorpay_flutter package is used. All these are present in dart SDK packages which is open source. Hence, the project is technically feasible.

2.2 Operational Feasibility

Single code base which can run on both IOS as well as Android devices. For authentication, user will have to enter the email and password or phone number or can authenticate using google. Staff can add new in queue by adding patient details like name, phone number and problem. And the patient can choose any mode of online consultation (video call, one-to-one chat, phone call). Doctor can remove patient, once patient is done. Hence, the project is operationally feasible.

2.3 Economic Feasibility

The project uses open source framework flutter and open source language dart which has extensive documentation available online. It uses packages which are present in dart SDK packages. Android Studio is used for building the app which is also free software for building native apps. Google Firebase Console is used for authentication and Cloud Firestore is used for maintaining database which is also a free cloud database (NO-SQL) provided by Google. Hence, the project is economically feasible.

3. Methodology/ Planning of work

1.) First of all, **Authentication** of user (Doctor, Patient, Staff) will be done. This will be done by 3 ways- Google sign-in, Email & Password authentication and Phone Number.

2.) After this**, Firebase** will be integrated in the project. For this, JSON file will be added in the project and various dependencies will be added in the project for the same.

3). After this, work on **Staff** section of app will be done.

- Fetching list of waiting patients from database.
- Adding new patients feature.
- Deleting a patient from the queue and from database.
- Viewing the details of patient.
- **Calling** a specific patient.
- Updating the details of patient.

4.) After this, work on **Doctor** section of app will be done in which-

a. Screen of choosing between direct appointment and online consultation patients
b. Screen of listing of **direct appointment and online consultation patients** fetched from database
c. Chatting between doctor and patient
d. Video call between doctor and patient
e. Phone call between doctor and patient
f. Deleting a patient from list and database

5.) After this, work on **Patient** section of app will be done in which-

- Patient can choose between direct appointment and online consultation
- Choosing Online Consultation Mode screen
- **Payment Gateway**
- **Chatting, Video Calling and Phone Calling** with doctor
- Dataset of average time taken by a patient of particular problem which will help predicting the expected arrival time of patient's appointment using Machine Learning.

6.) Other features include-

- Forget password option
- Splash screen
- Searching a patient by name
- Listing all patients of a specific problem
- Viewing all patients till date

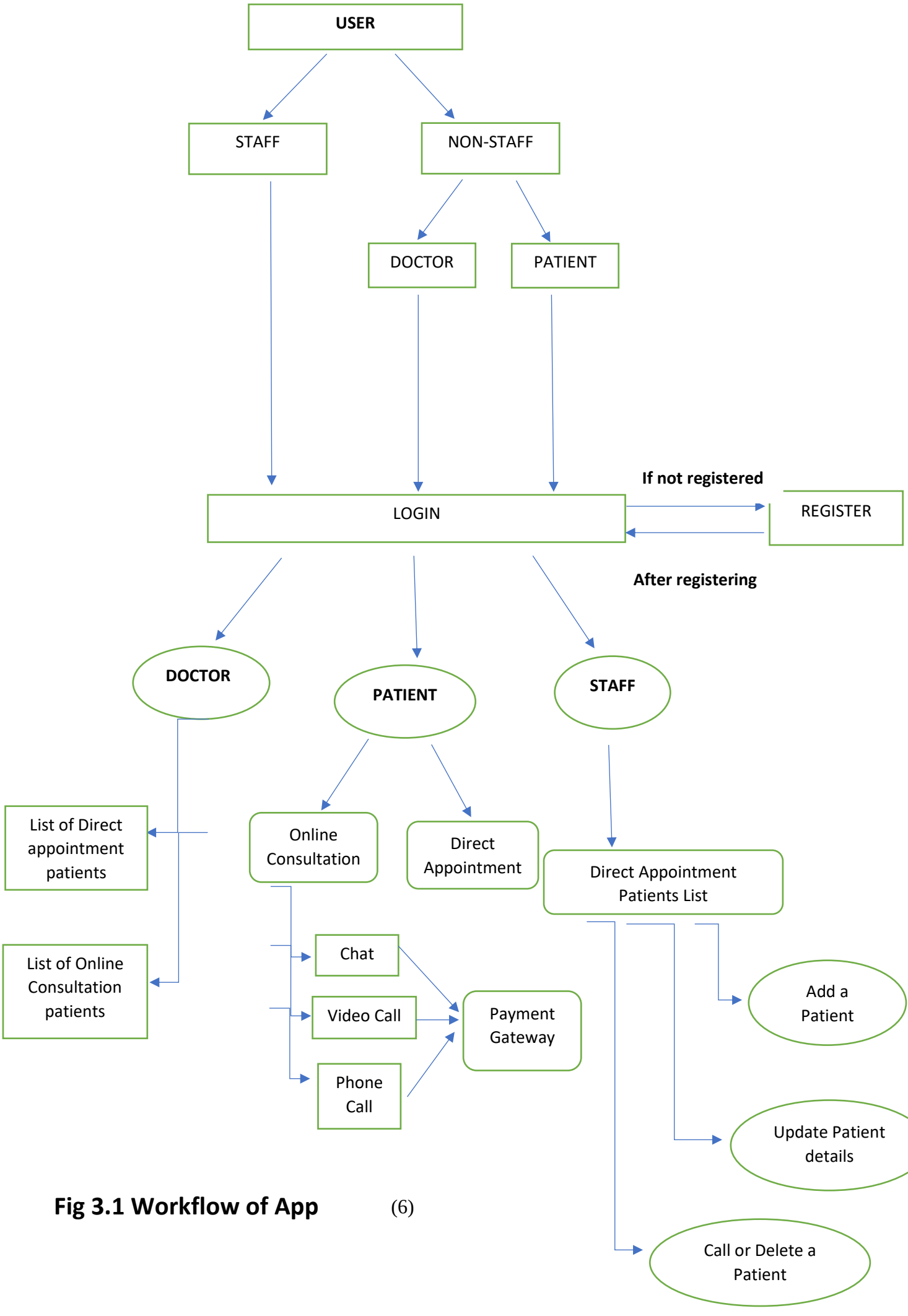

Fig 3.1 Workflow of App (6)

4. Facilities required for project

4.1 Hardware Requirements

1. Android version 9 or above
2. Storage about 400 MB
3. RAM- 4 GB or above
4. Storage accessing permission for app should be enabled
5. Android and IOS device
6. IOS os version 13.3.1 or above

4.2 Software Requirements

1. Flutter installed
2. Dart SDK installed
3. Android Studio or Visual Studio Code installed
4. Installed packages-
    - ✓ firebase_auth
    - ✓ cloud_firestore
    - ✓ url_launcher
    - ✓ razorpay_flutter
    - ✓ firebase_storage

5. Bibliography

[1] Dart Packages (2020). [online] Available at: https://pub.dev/

[2] Dart Documentation (2020). [online] Available at: https://dart.dev/guides

[3] Flutter Documentation (2020). [online] Available at: https://flutter.dev/docs