



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Technology and Information Systems

(SECP1513) Sect. 05

PROJECT - Low Fidelity Prototype (PART 1)

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INTRODUCTION

Malaysians are blessed with a good healthcare system. The Malaysian government provides substantial support which then results in the Malaysian healthcare system being advanced. In Malaysia, there is public healthcare and private healthcare. Private healthcare may have certain advantages but it can be too expensive which then leads most Malaysians to choose public healthcare, that is, the cheaper option. Malaysians pay for public healthcare through general income taxation. This government-funded public universal healthcare system is available to all legal Malaysian residents and provides low-cost universal and comprehensive treatments. We don't even need to worry regarding the quality of the doctors as they are the same whether in a public hospital or private hospital. Medical practitioners in Malaysia have received training and education in current healthcare best practices, with many having studied at institutions overseas. However, there are still some problems that need to be solved with the Malaysian healthcare system. So, in this report, we will discuss the problems faced by Malaysians and the solution that we want to introduce, which is an application. Our project is based on one of the Fourth Industrial Revolution (IR4.0), which is Big Data Analytics. Moreover, in this report, we also added architecture planning with flowchart, user interface and text description to ensure good understanding.

CONTENT

1. Problem statement

- 1.1 Hospitals in Malaysia still use a physical copy of the patient card for appointments. Some older patients had to keep a bulk of cards. It is not safe as the chances to lose the card is high. Patients might even forget their appointments since there is no reminder.
- 1.2 Pharmacy in the hospitals is not as efficient because most of the time the patients have to wait for a long period due to the queue. The amount of time spent at the pharmacy is longer than doctor consultation.
- 1.3 Even though they are free, specialist services necessitate queuing. For instance, you might get your appointment two to three months, depending on your condition, after your registration. This won't be a problem if the registration process itself is not too long. Some patients have to wait almost two hours just to register.

2. Proposed solution

- 2.1 We developed a prototype that uses Cloud Computing Architecture. It is an application called DOC & Patient that allows patients to book and keep track of their appointments.
- 2.2 The prototype that we developed also shares the latest health news to remind people to always take care of their health.
- 2.3 The prototype also allows users, as in the patient, to see the details of doctors according to clinics and at what time each doctor will be available.

3. Objective

- 3.1 To avoid hospitals from being overcrowded. Patients won't have to come to hospitals just for registration or to book appointments.

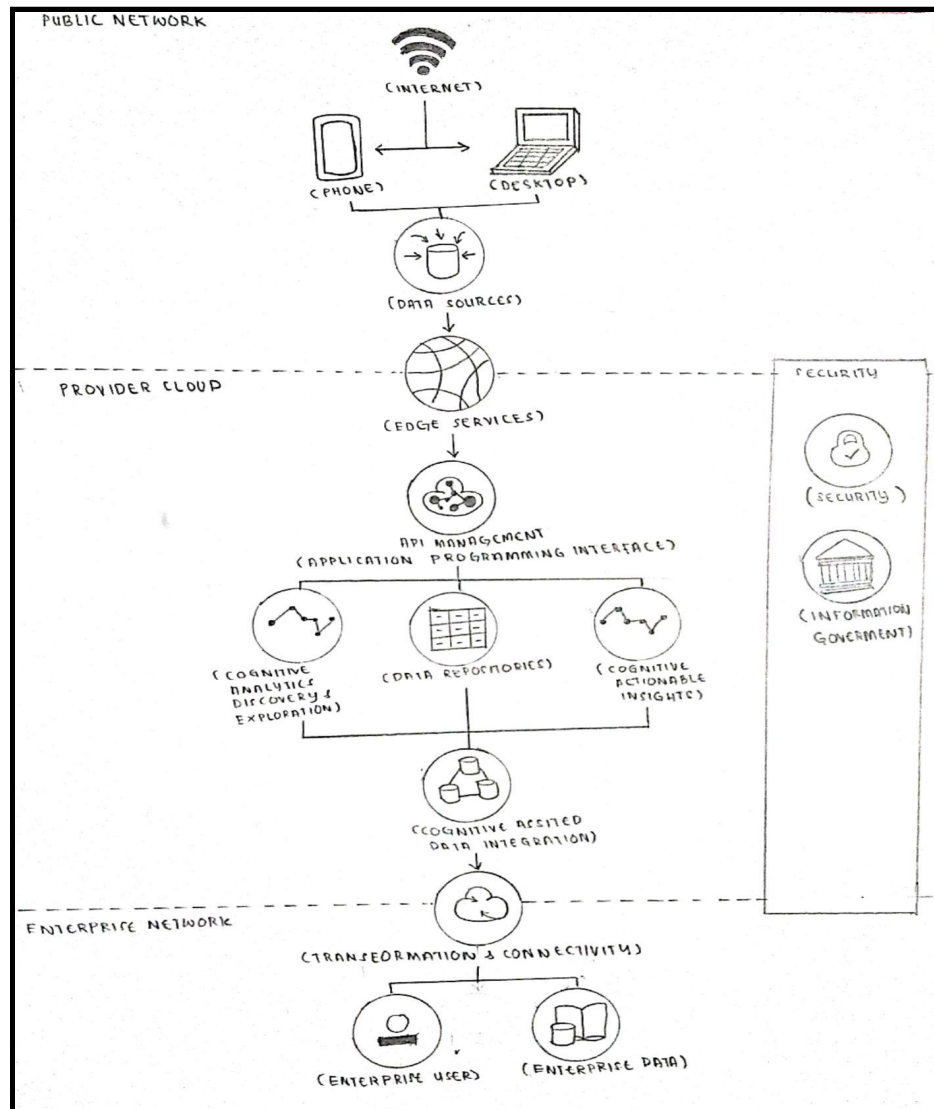
- 3.2 To provide appointment reminders for patients through notifications and calls. This is to ensure that patients will not miss their appointments.
- 3.3 To reduce the usage of physical copies of patient cards. This will help patients to be less worried regarding the chances of losing their cards.

4. Potential clients

- 4.1 Our project is targeted at hospitals throughout Malaysia. Both public hospitals and private hospitals will be able to use and adapt to the application easily. It will be beneficial not only for the patients but also for the hospital staff as the application can ensure their daily tasks run smoothly.

ARCHITECTURE PLANNING AND DESIGN

COMPONENTS ARCHITECTURE PLANNING AND DESIGN



1. Data Sources

1.1 Data sources that are provided in Public Network contain external sources of data analytics programs. It comes from the data providers by using phone and desktop through the Internet.

2. Edge Services

2.1 A component that is exposed to the public internet is known as an edge service.

2.2 It serves as a hub for all other services, which we'll call platform services.

2.3 Edges services also allow users to communicate safely with analytical systems and enterprise applications. Edge's services included Domain Name Server, Content Delivery Networks (CDN), Firewall and Load Balancers.

3. Application Programming Interface

3.1 The interaction between several applications or platforms is defined and managed via an application programming interface (API).

3.2 API management is the process of developing and publishing APIs, enforcing their usage standards, managing access, nurturing the developer community, collecting, and analyzing usage statistics, and reporting on performance.

3.3 The word API refers to both server-side software and the computer code required to implement that software.

3.4 In API management three things will be provided:

3.4.1 Cognitive Analytics Discovery & Management

- The Discovery and Exploration component is used to enable a new breed of data customer. It also provided for the old breed if it is already expired.

3.4.2 Data Repositories

- A data repository's purpose is to keep a subset of data isolated so that it can be mined for more insight or business intelligence or used for a specific reporting requirement.

3.4.3 Cognitive Actionable Insights

- The Cognitive Actionable Insights component is to analyze the data given from a variety of sources in a cohesive manner.

- Strong data is required to obtain useful insights. Typically, gathering customer feedback provides actionable insights.

4. Transformation and Connectivity

4.1 The transformation and connectivity component allows for secure connections to enterprise systems, as well as the ability to filter, collect, modify, and convert data as needed.

5. Enterprise Data

5.1 Enterprise data management is an organizational feature that accurately defines, easily integrates, and effectively retrieves data for both internal applications and external communications.

5.2 It helps in ensuring the data is accurate and allows organizations to manage their huge collection of data.

6. Enterprise Users

6.1 Enterprise users are specialized users that connect to the analytics cloud solution through the organization's internal network.

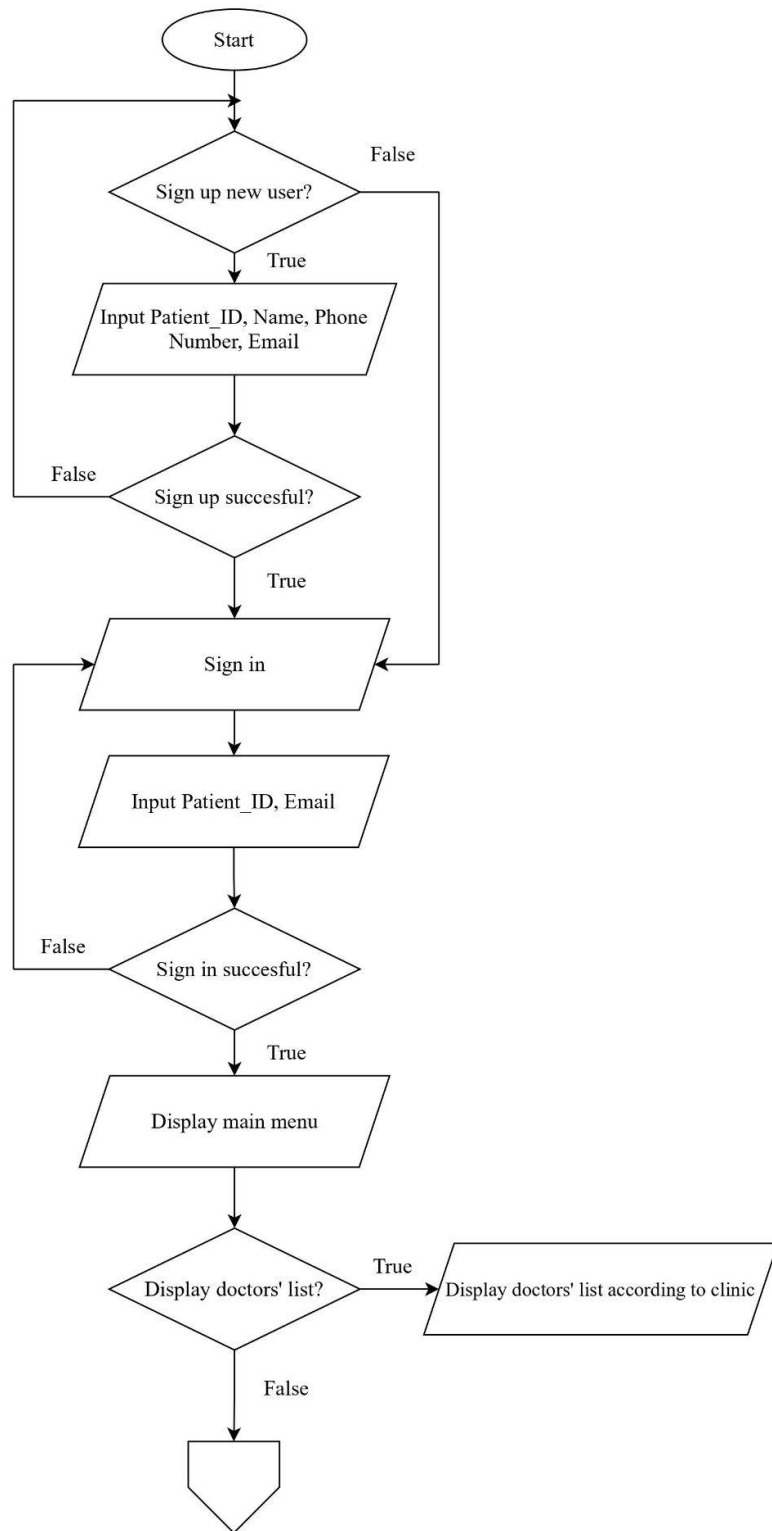
6.2 It also can set up the analytical processing system and monitoring solution and availability.

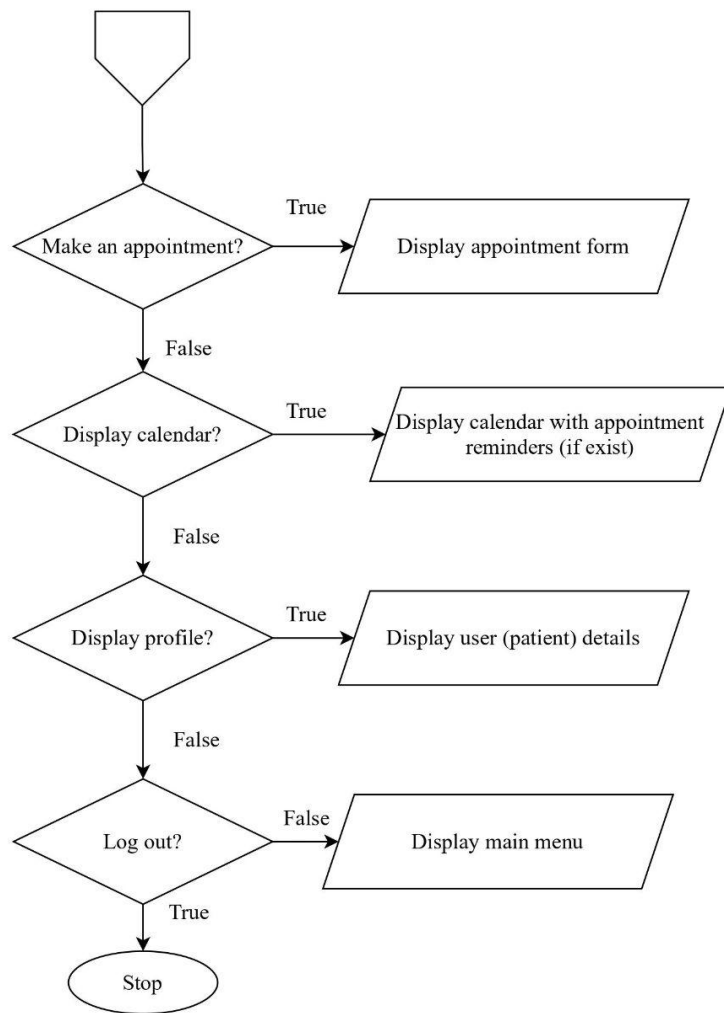
7. Security

7.1 Security is the ability to secure the data saved online from any theft, leakage and hacker.

7.2 The types of security used in this system are: data security, identity and access management, infrastructure security, application security and security governance.

Flowchart





The flow of the apps

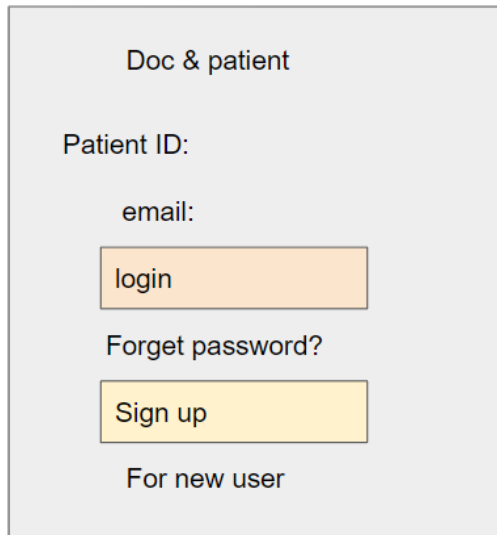
If the user has an existing account they can sign in to that account, otherwise they can sign up for a new account. The user is then shown the main menu, where they can start booking an appointment. The app will then show the list of clinics, followed by the doctors in the chosen clinics.

After choosing the doctor, the app will show you the details of the doctor and the times they are available. Finally, they choose the time of the appointment and they are done with the booking process.

If the patient is collecting the medicine, the calendar can display and remind them of the time to pick up their medicine so as to avoid the patient waiting in a long queue in the clinic.

Apps Interface

Login page:



Doc & patient

Patient ID:

email:

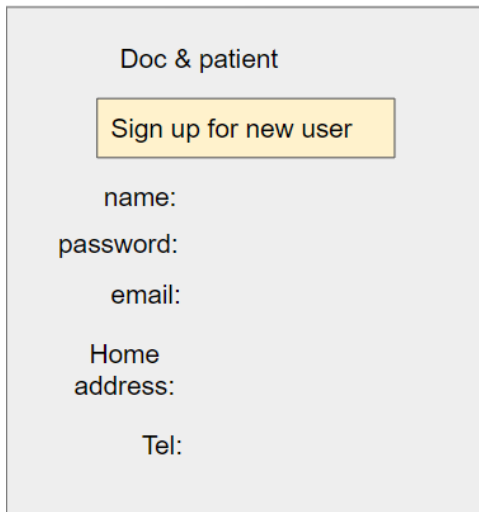
login

Forget password?

Sign up

For new user

Sign up:



Doc & patient

Sign up for new user

name:

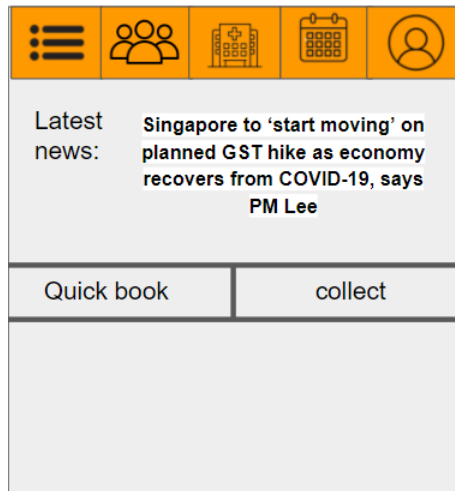
password:

email:

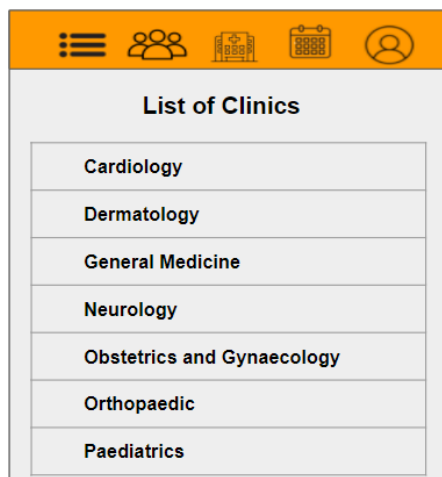
Home address:

Tel:






Main menu:




List of clinic:



Doctor Details:





Dr Johnathan Treat
Paine

Ear, Nose and
Throat

Available time:






See more

Book now

DECEMBER 2021						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Free Printable Calendars from [typecalendar.com](https://www.typecalendar.com)

Reminder:



Today **Friday, 31 December 2021**

Reminder

Book with Dr Johnathan
Treat Paine

Collect

1. Paracetamol
2. Penicillin
3. insulin

At: Klinik Kesihatan Masai

CONCLUSION

This project manages to make going to the doctor a much more pleasant trip, and it does this by eliminating the worries of the patients. Firstly, it removes the need for each patient to worry about their files or appointments being lost, instead only worrying about getting to the doctor on the agreed-upon time. Secondly, appointments can be made much more easily and in minutes thanks to the app's design. In addition, Patients will be reminded of their appointments as they approach by notifications directly to their smartphones. And finally, any pharmacies related to the hospital will be made aware of the medicine the patient needs as soon as the doctor prescribes it through the system. In conclusion, this project will make life in Malaysia much easier and healthier for all citizens.