Technology and Information Systems

(SECP1513) Sect. 05

PROJECT REPORT - Low Fidelity Prototype (PART 2)

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1. INTRODUCTION

In Malaysia, there are both public and private hospitals. Both systems provide good services. However, private healthcare can be too expensive which then leads most Malaysians to choose public healthcare. Malaysian citizens pay for public healthcare through the general taxation of income. As a result, patients who are older than 18 years old only need to pay for registration, which is normally around RM 1 to RM 5. This heavily-subsidised public sector is open to all legal Malaysian citizens and offers low-cost universal and all-inclusive treatments. We don't even need to be concerned about the quality of the doctors because they are the same whether in a public or private hospital. Malaysian medical practitioners have received education and coaching in modern healthcare best practices, with many studying at universities abroad. However, there are still some problems that need to be solved with the Malaysian healthcare system. So, in this report, we will explain Malaysians' difficulties as well as the solution that we intend to propose, which is an application. Our idea is based on Big Data Analytics, which is a component of the Fourth Industrial Revolution (IR4.0). In addition, to guarantee a thorough understanding, we included detailed steps and description, AWS architecture design, flow diagram and its description, and lastly, the low-fidelity mock-ups.

2. DETAIL STEPS AND DESCRIPTION

Link to the video: https://youtu.be/Qy-gYyCG-Us

The video above shows and explains the project's detailed processes and explanations.

Before beginning project part two, we held an online discussion using Google Meet to go through the project requirements, topic, and problem. During the meeting, we also divided the task amongst ourselves. Because this is a group project, we opted to create our report on Google Docs so that we could simply add our parts and correct one another. The low-fidelity mock-ups were then created using the uizard software. We utilised Canva for the business flow diagram since it is easy to alter. Then, in order to clarify the project's phases and descriptions, we decided to make a video about it.

3. DETAIL DESCRIPTION

3.1. PROBLEM

There are many problems that we can see if we are not doing this project for the Doc and patients. The first one is, hospital staff will undergo stress to create a perfect schedule as they must spend hours and hours fixing schedules and informing the patients. Moreover, the created schedules need alterations in timings for the convenience of the patients but there are some difficulties in reaching patients. This demands additional work for them. The second one is, patients must wait for hours queuing because pharmacy in the hospitals is not efficient. The result is the patients spent more time at the pharmacy longer than doctor consultation. The third one is, the 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.

3.2 SOLUTION

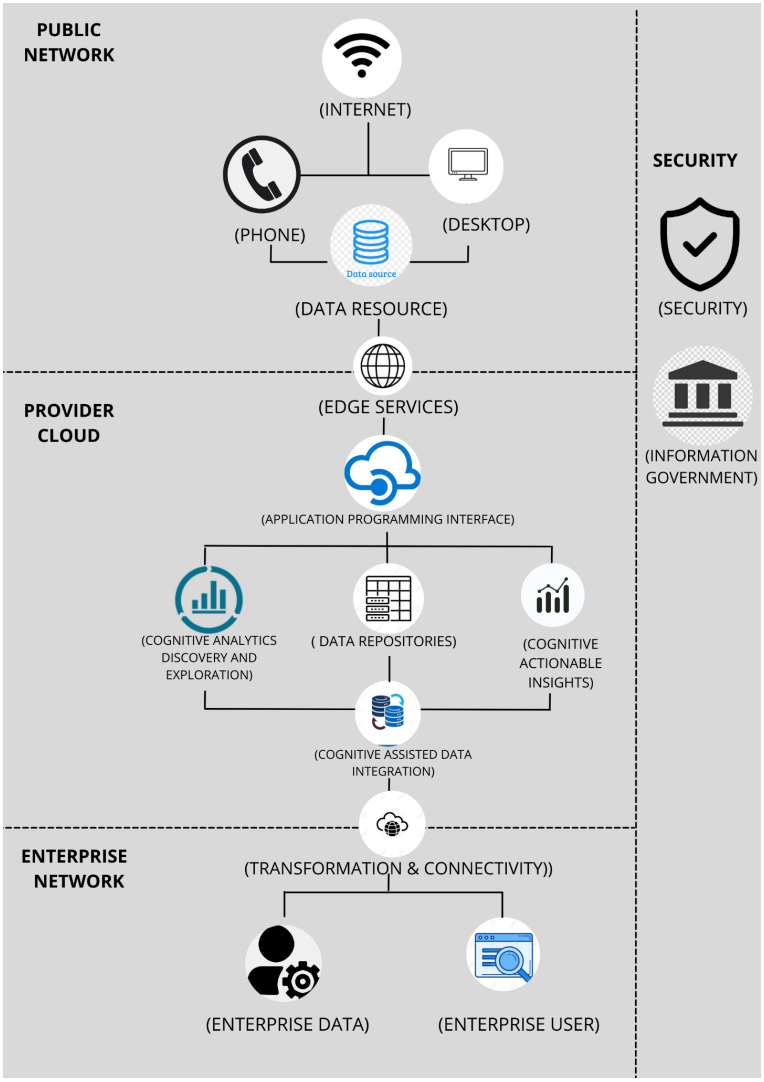
By completing our project, all the problem statements above had been solved. We developed a prototype that uses a low-fidelity project. This prototype is used to show you how our project works by showing the application called DOC & Patient that allows you to see how to book and keep track of their appointments. This prototype shows the whole list of clinics available, the name of the doctor for making an appointment, the doctor available times and lastly shows the confirmation appointment. By using this prototype, it shows this project will give a benefit for patients and doctors as they are able to track the appointment in time.

Other than that, through our apps, Kementerian Kesihatan Malaysia (KKM) could track the patients of certain illnesses. For example, KKM could track the statistics of the people suffering from heart diseases, through this action KKM is able to spread awareness through social media such as meta or Instagram about the effect of heart diseases to alert people.

3.3 TEAM WORKING

We complete this project ourselves because all our members are helping each other to make this project easier. Our group leader, Khairun Najihah, was able to instruct the task given by having a discussion with group members on how to make this project using Google Meet. We all understand how to make this project but also there are some questions we don't understand so Najihah and Azira consulted with the lecturer to understand this project better. After having a discussion, Omar volunteered to make a low-fidelity prototype by using uizard as he has an idea on how to make this prototype. While making this report, Desvin also does his work on how to make a flow diagram for this project by using Canva and gives the description on how this app works. Then, Zira was able to make the Cloud Computing Architecture and do the description about the components works on this app and Desvin also helps with completing this description. And lastly, Najihah instructed our group members to record all the tasks given and compile it into a video to give the link for a detailed step on how we are completing this project.

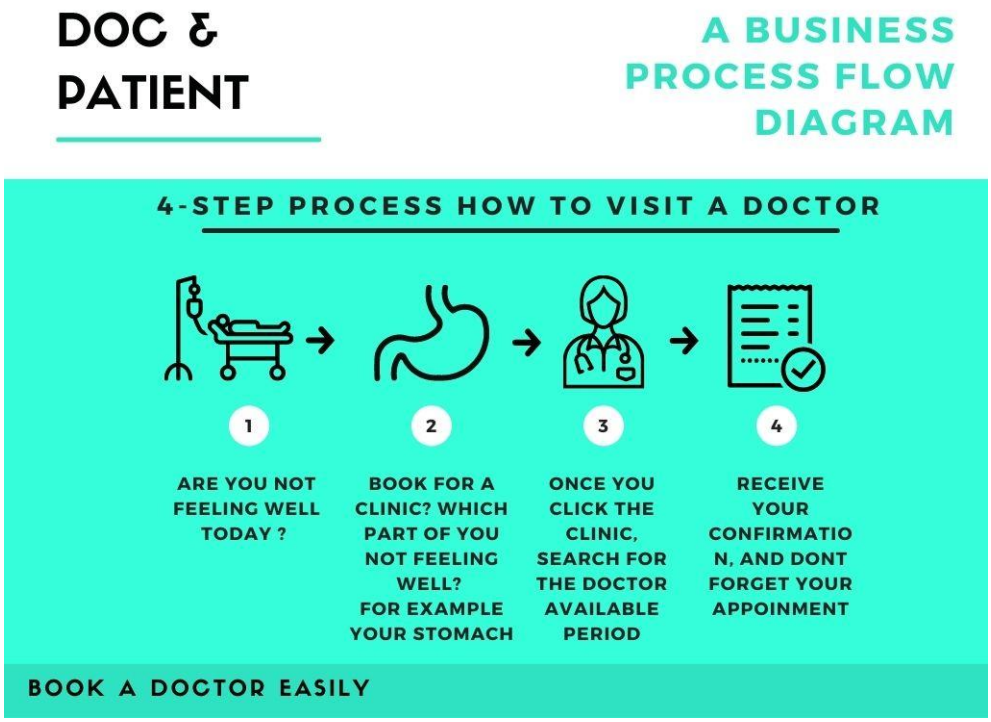
4. AWS ARCHITECTURE

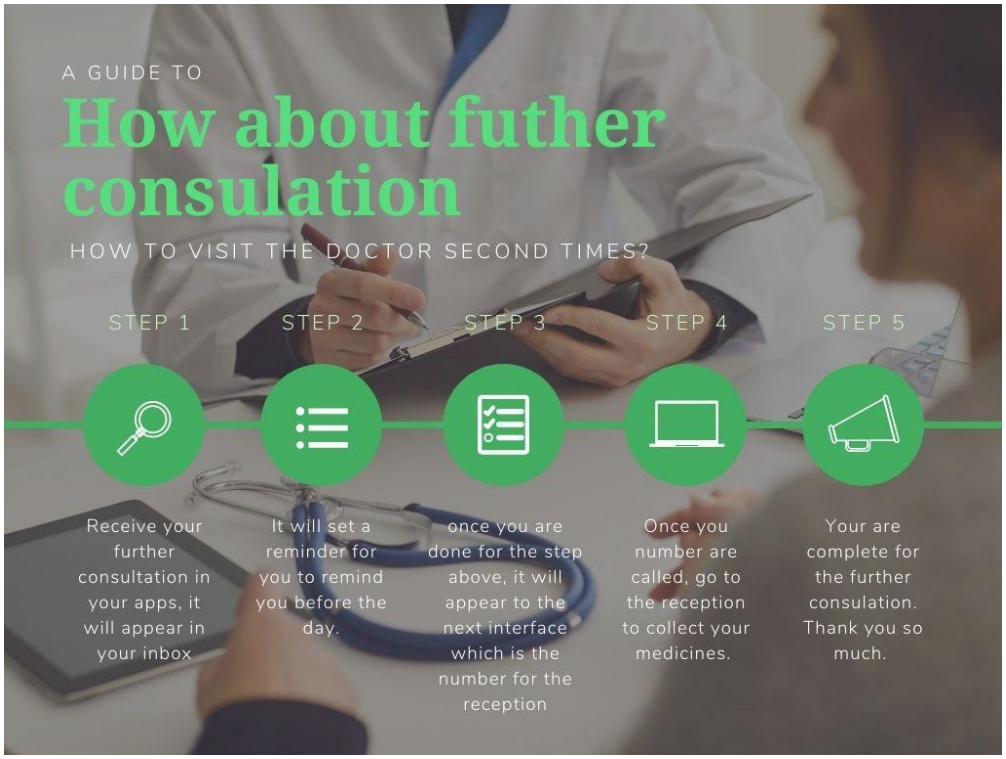


This Architecture is used to solve problems on how the doctor and patients to book and keep track of their appointments. From this cloud computing architecture, we can see all the components above are used to complete our project. So, for the first one, the patient used the phone and desktop to book an appointment by signing in to the account on the app. The patient also can book an appointment at their chosen clinic nearby. The information given by the patient will be gathered to access the data in data sources. An edge service is a component which acts as a gateway to API management. Edge services deliver all the resources and cached content from the patient. Data delivered into Application Programming Interface (API) and API will access based on the data given by the client as API is an

interface that provides programmatic access to service functionality and data within an application. The data will go through the Cognitive Analytics, Data Repositories and Cognitive Actionable Insights which check if all the data given will be approved or not. For example, the data is checking if the chosen clinic by the patient is available for making appointments or not. If yes, the data will go through into Cognitive Assisted Data Integration to combine all the information given. And finally, the information of available appointments will display in enterprise data and enterprise users.

5. FLOW DIAGRAM AND DESCRIPTION





6. LOW FIDELITY MOCKUPS

Screen 1

When a user enters the app, where they are met with this screen. They can choose to sign in using their email and a password. If the details entered are correct they are sent to the main page (screen 3). However, if they do not have an account they can easily sign with the button on the bottom of the screen that will send them to the sign up page (screen 2).

Screen 2

This is the sign up page. Users are asked for details such as Full Name and Home Address, and details for future sign in such as Email and Password. After this, they are sent to the main page (Screen 3).

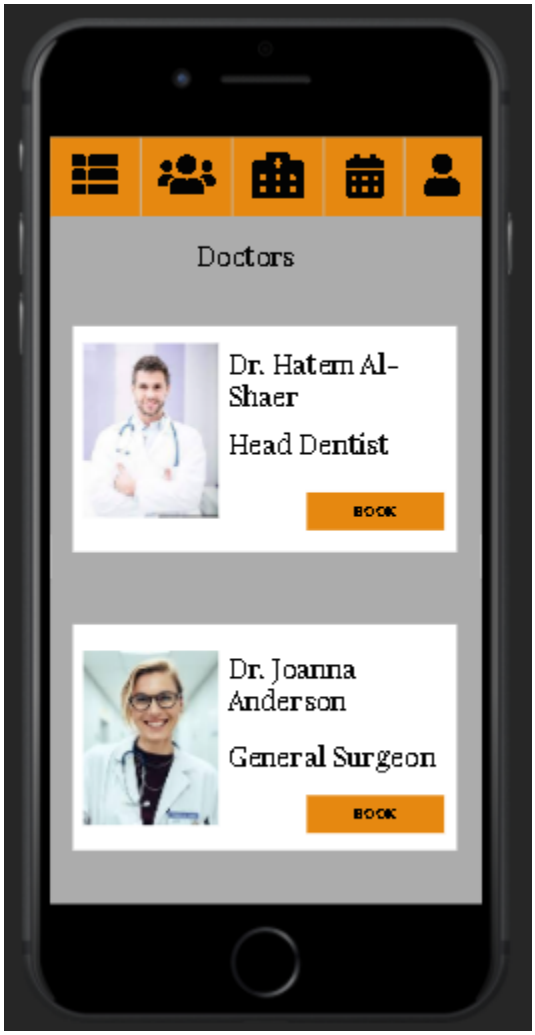
Screen 3

This is the main page. The user can see the latest news and quickly book an appointment. They can also check if they have any medicine to collect. The bar on the top of every screen from this point forward has logos that are linked to the other screens. Left to right, the logos symbolize The Main page(Screen 3), Doctors (Screen 4), Clinics (Screen 5), Appointment reminder(Screen 6), Profile (Screen 7).

Screen 3 (Part 2)

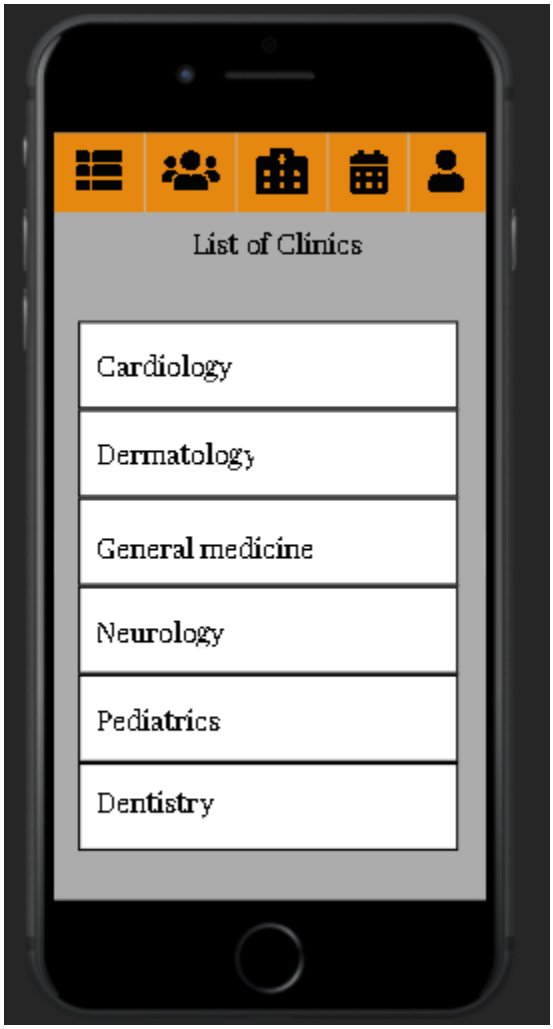
Scrolling down on the main page you can see statistics on heart disease, Covid-19, etc all across Malaysia.

Screen 4



This screen shows all available doctors in the hospital. Users can see the Doctor's profile picture, their title and their name. They can also book the doctor by clicking the "BOOK" in each box. That will lead to a page similar to Screen 8.

Screen 5



In this page, users can see the list of clinics in the hospital and proceed with the booking of an appointment from there. Clicking one of the clinics will lead to a page similar to Screen 4 but with Doctors only in that clinic.

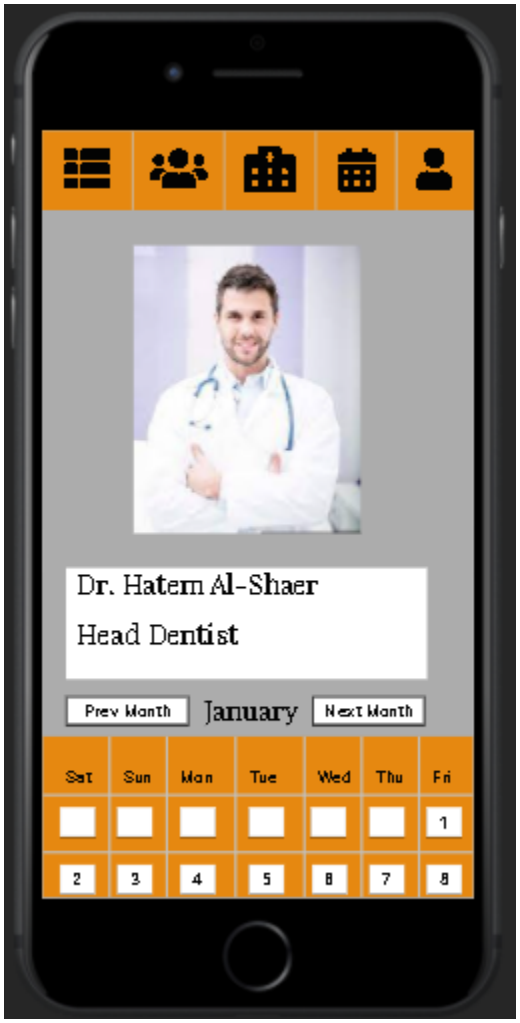
Screen 6

Here, users can check on appointments they have previously booked. Exact details are given for the appointment including date, day of the week, and name of the doctor.

Screen 7

Finally, the profile page shows the patient's picture which is taken from their file within the hospital system along with the Patient ID and their name. This page also shows any medicine prescribed to the patient that hasn't been collected yet, and the location where they can collect the medicine.

Screen 8



Clicking on the "BOOK" button in Screen 4 will lead to a page similar to this, showing the doctor's picture, name and title. If you scroll down, the user can see the calendar (Screen8 , part 2).

(Screen 8, part 2)

Users can say the days of the current month, and navigate to coming months or return to the previous months. Users can only click on the days when the Doctor is working, and not fully booked. They are then shown the next Screen (Screen 9).

Screen 9

Finally, the user can choose the time for your booking from the Doctor's unbooked times for that day. Their choice is then saved and you will be reminded the day before the appointment via text message. They can also check their booking in the appointment screen (Screen 6)

7. REFLECTION

a. What have you learned and your motivation to complete this project?

From this project, we learned many things on how this project helps patients and doctors to book and track their appointments which make it easier for the both parties in many ways. Referring to low- fidelity mock-ups, we also learn new things such as the patients are able to make their appointment in this app because it already provides the list of clinics near them and also give the full details of whether the chosen clinics have an appointment or not. While making this project, it gives us a huge motivation in completing this project because we hope this project will help patients in saving their time wisely as they can check it on phone rather than going back and forth to the clinics.

b. What issues and solutions are implemented to make the project a success?

To ensure the project's success, we opted to take things slowly at first. First, we recognized the problem and tried our best to define it as precisely as possible. Then, during an online discussion, we came up with a few possible solutions and picked the best of them. Following that, we began implementing the project by distributing the workload amongst ourselves in order to guarantee that we could operate successfully as a group. Whenever an issue or misunderstanding arises about the project, we shall hold a quick group discussion, whether online or offline, to resolve it. After we finish the project, we will analyze it as a group and decide whether it needs to be altered.

c. What is your direction after completing this project?

In our opinion, we will record these low- fidelity prototypes for further investigation, this is due to the skills and the knowledge that we study will improve, we will change this into High-fidelity prototypes and allow it to become realistic. When the app is launched, it will help the patients to track their appointments easily and reduce the issues of the lost cards. Other than that, we will keep discussing and implementing new ideas so that the app will be updated and the greatest. New features and improving existing ones is our next target. For example, it will have delivery services and the nearest clinic will deliver the medicine when you run out of paracetamol to your house. Without going out to

crowded places and getting affected covid- 19, you will receive your medicine in your house.

d. What is the improvement necessary for you to improve your potential in the industry?

Improving your potential can be done in many ways: Firstly, teamwork and good relations with your colleagues is very important. No matter how hard you work, if you make yourself an enemy of other people, they will be obstacles in your path, instead of helping hands to help reach your goal. Secondly, always keep an open mind regarding feedback about any projects you may have. Different perspectives have different reasoning, so having people say their suggestions (whether you take them or not) can only help you. Finally, you have to keep an open eye for new opportunities to further your knowledge about your industry. For example, learning about new software and technology or taking management classes.