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TreatPlan: Web-Based System Development for Clinic Check-Up Reservation

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Abstract : The current issue that many people have with getting a medical checkup at a specific clinic or hospital is that it takes a longer waiting time. Aside from that, the doctor will have no idea what the patient's schedule is. Certain locations tend to increase the facility's crowdedness to some extent. After taking the approach of observing clinics and healthcare institutes, it is overcrowded with patients and some of the patients are not even sure of their appointments, but they come either way. The medical staff are swamped with phone calls from patients asking for their treatment appointment schedule. TreatPlan is a system created to help a community where they need a treatment to be planned beforehand. The system's ambition is to fend off time consuming waiting duration that is especially hard for older people. The system also wants to help patients that are unsure of their own scheduled treatment or what might come up with their plan. Because of the systematic scheduled treatment, this will help the facility not to be overcrowded. The system has a user-friendly interface because of the straightforward menus and is not built for every clinic due to different business rules and that is what makes the system exclusive. The system helps to give people convenience and flexibility to plan their medical checkup comfortably according to their schedule. On the other hand, the doctors also gain the benefits that they can also manage their schedule to sync with their patients.

Keywords: Healthcare, Medical checkup, Time-management

1. Introduction

Clinics or hospitals are always busy with people solving and searching for the treatment and even going there to solve their needs. It always receives numerous and tremendous messages, calls, and email for booking appointments but sometimes they lose the information as they did not have a proper system or website for their patients to see and contact. Every few months, a check-up at the clinic that delivers the service is required. However, there are a few issues that cause worry at the clinic and must be resolved in order to make life easier for both patients and doctors [1]. The issues that arise when a

patient wishes to schedule an appointment such as longer waiting time, doctor and patient's availability and long crowded queue [2]. Therefore, the proposed TreatPlan website system has been developed to ease the administrator to arrange the appointment accordingly by providing the information on doctor's availability, online platform to make an appointment so that a comfortable environment when making an appointment. This system able to avoid crowdedness and long queues in clinics or hospitals.

2. Materials and Methods

For this project, the Debra method that includes 4 phases which are analysis, design, generation, and implementation. Every phase focuses on different goals to achieve for the website development including the development of a web strategy, defining objectives, objectives analysis, design, design testing, etc [3].

Development approach was created in response to a significant issue with medical clinic appointments, which now take place at the majority of clinics. The patients suffer just to get their medical checkup is quite inconvenient due to long wait period as the Covid-19 case increased.

Figure 1 shows technical involvement in order to utilize TreatPlan web-app. Because it is a web-based application, it can be accessed from any browsers in any devices that users own. The API is to integrate TreatPlan's front-end with a database to retrieve information needed [4].
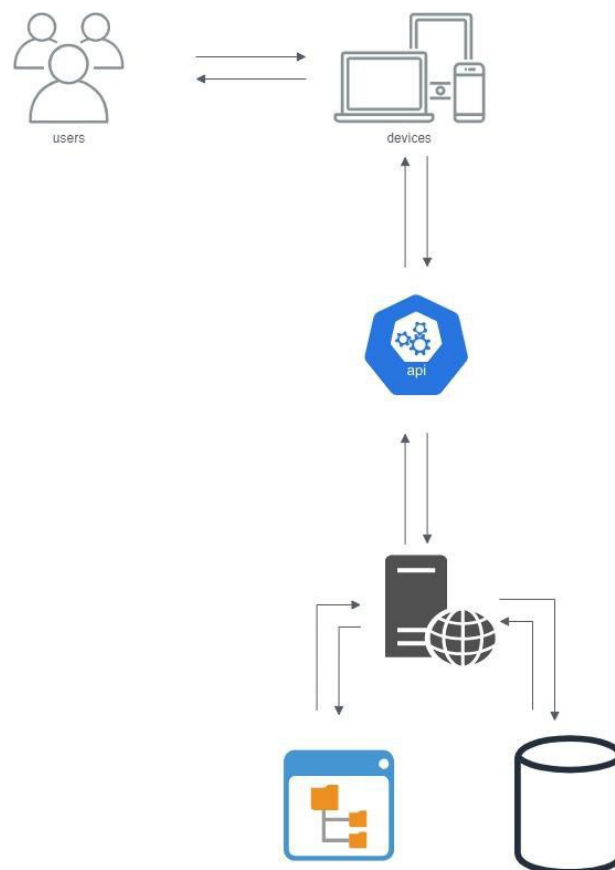

Figure 1: Technical diagram

3. Results and Discussion

For the proposed web-based system, there are five main screens and one notification pop-up screen that have their own functionality. Website features include google map. The interaction styles of this website are command-based which users need to type, tapping buttons and selecting options from menus. These screens consist of:

- Home Page
- About Us Page
- Locate Us Page
- Make Appointment Page
- Appointment Confirmation Page
- Appointment Confirmed Page
- Filled Make Appointment Page

The Home Page of TreatPlan (**Figure 2**) web-based system where every time a user browses the website, it will automatically redirect the user to Home Page. Users will also be redirect to Home Page when they click the Home Icon on the top left or 'Home' link on bottom left of the page. The Home Icon will turn bold to inform users that they are currently on the Home Page. On this page, users will be able to view and read the current health article and also fill in the inquiry form if there's any enquiries regarding the system. On the top part of the page, users are able to access other pages when they click the title name. On the bottom page, users are able to view the company's details such as company contact, operational hour, and address. Both section; top and bottom, are visible on every page of this system.
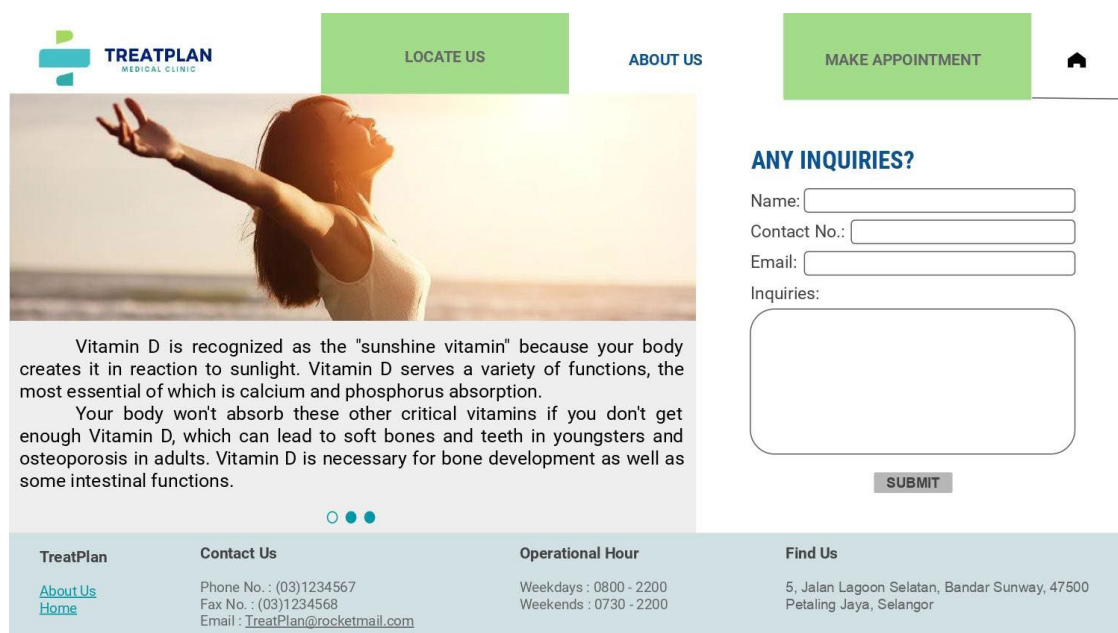

Figure 2: Home Page

When users click the "ABOUT US" title name on top or bottom of the previous page, users will be redirected to the About Us Page (**Figure 3**). The title name on top of the page will turn bold to inform users that they are currently on the About Us Page. On this page, users are able to view the company's team details, and also vision and mission of the company.
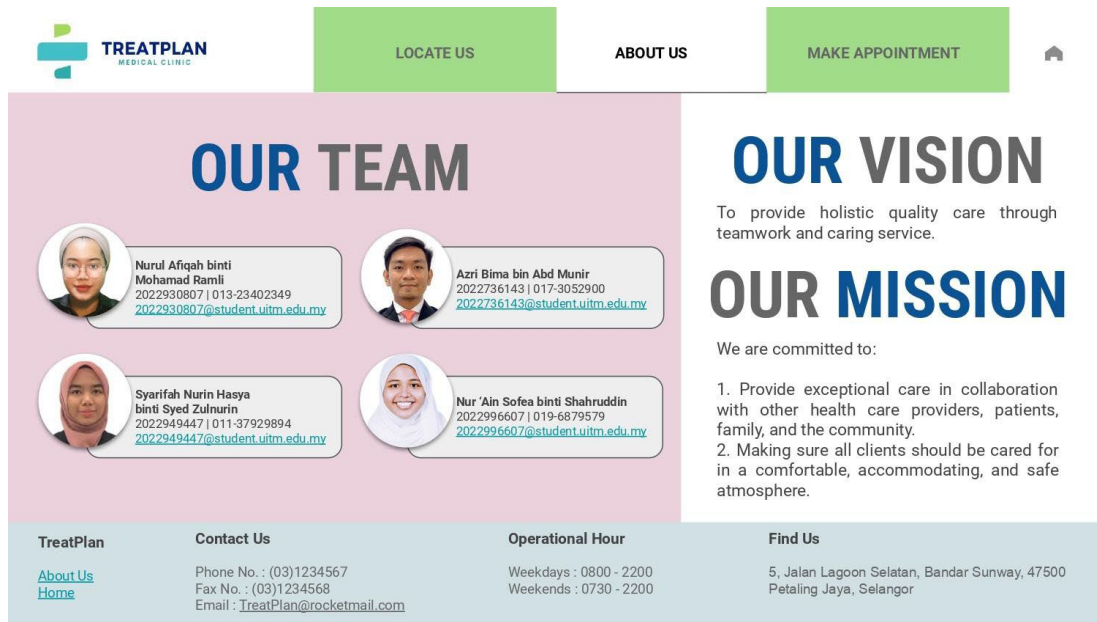
Figure 3: About Us Page

To view the Locate Us Page (**Figure 4**) by clicking the "LOCATE US" title name on top of the previous page, users will be redirected to this page. The title name on top of the page will turn bold to inform users that they are currently on the Locate Us Page. On this page, users are able to view the company's location based on Google Maps.
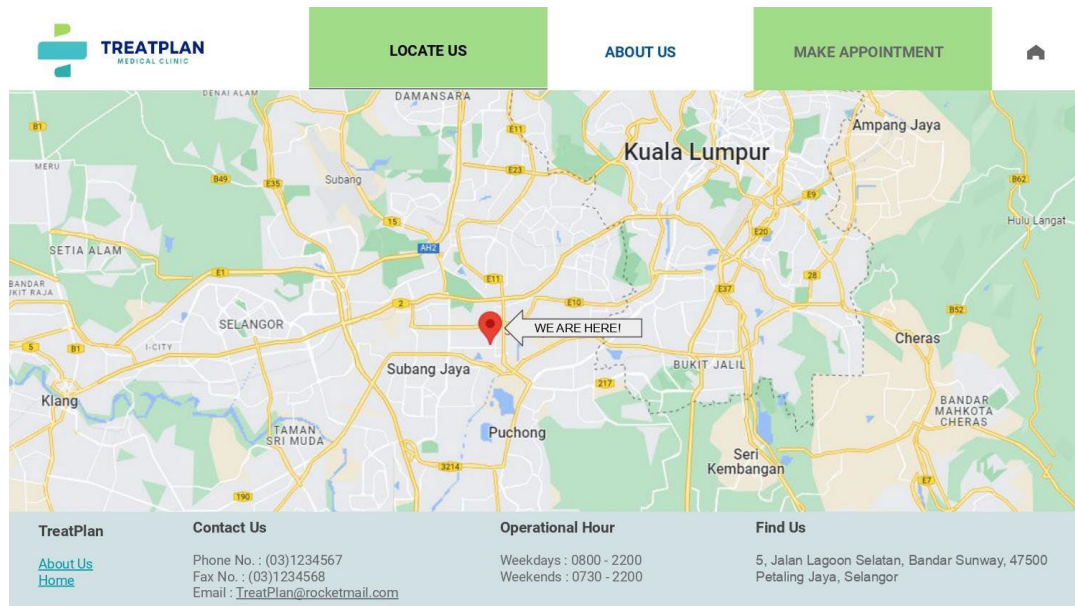

Figure 4: Locate Us Page

When users click the "MAKE APPOINTMENT" title name on top of the previous page, users will be redirected to the Make Appointment Page (**Figure 5**). The title name on top of the page will turn bold to inform users that they are currently on the Make Appointment Page. On this page, users are able to make an appointment by filling in the form provided on the middle left of the page. On the middle right, users are able to view the statistics of the company such as number of patients treated, number of professional doctors, and number of dedicated staff.

Figure 5: Make Appointment Page

Figure 6 is the same page as **Figure 5** but the form is filled with the patient's details. Some of the information needed are compulsory such as full name, NRIC/passport number, phone number, appointment date and time, and appointment reason. Here, every detail is editable. Emails are optional for patients to fill in. After filling in the form, users need to click the 'Submit' button

Figure 6: Filled Make Appointment Page

If a user clicks the 'Submit' button after filling up the form from **Figure 6**, they will be redirected to the Appointment Confirmation Page (**Figure 7**). On this page, users are able to view their appointment details for confirmation. Here, their details are noneditable. If the user clicks on the 'Cancel' button, it will redirect them to the page in Figure 5 where the form is filled with the patient's details and it is editable. However, if the user clicks on the 'Confirm' button, it will redirect them to the page in **Figure 8**.
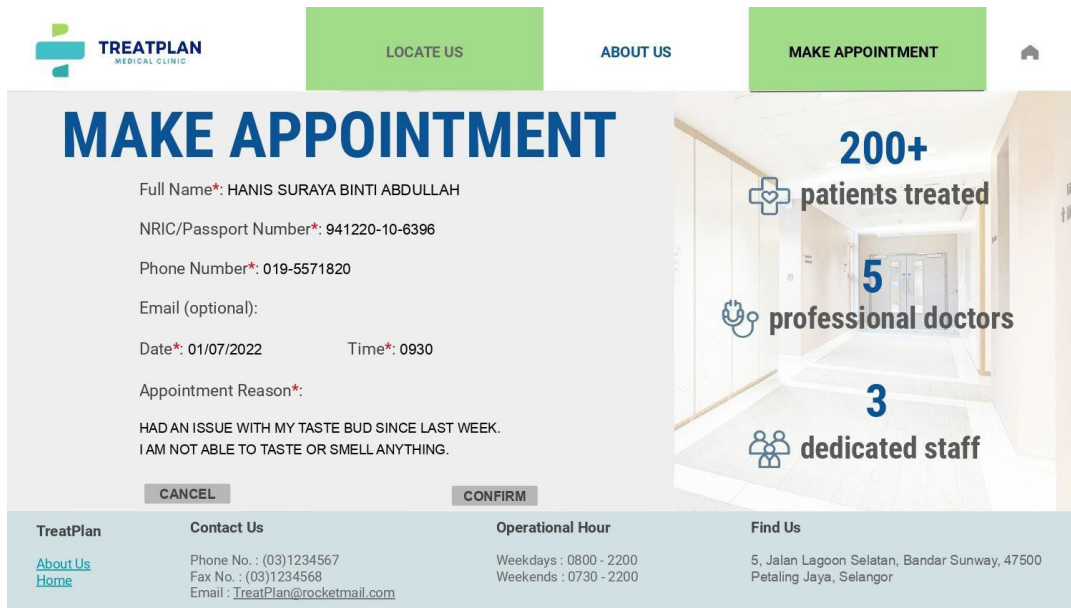
Figure 7: Appointment Confirmation Page

Figure 8 is the same page as **Figure 5** but the pop-up box will only appear when a patient successfully fills in appointment form. Here, users are able to view the message that says their appointments are successfully submitted to the system and when users click the 'Okay' button, the Make Appointment page will be displayed again.
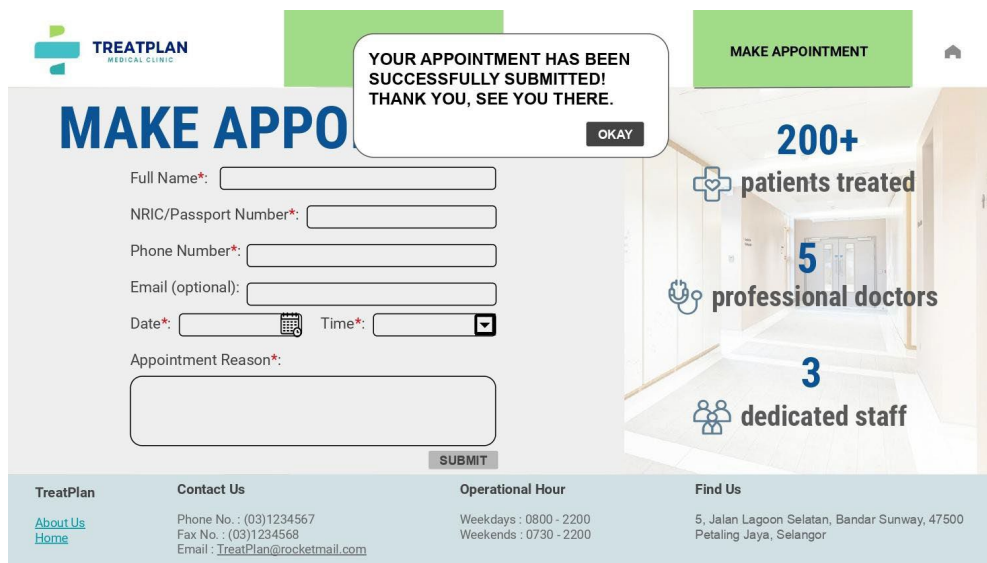

Figure 8: Appointment Confirmed Page

TreatPlan is a system for the user to plan ahead their schedule for any medical appointment. The system is focused for users that require a medical appointment which is the patient and also the doctor. Therefore TreatPlan only specifically specializes these users to focus more on the attention on the appointment that the users create for their medical check-up. The system also only specializes in clinics only because that the system was built to suit what any clinic needs. This system does not go in-depth within all the medical attention that require likewise for the hospital due to TreatPlan focuses specifically on medical appointments. TreatPlan will also only be available with the selected clinics.

This is because of its originality and it will be one of the specialty exclusively for the clinic that is selected.

4. Conclusion

TreatPlan is a web-app that is focused on helping every age group make medical appointment experience better since the technology usage in this era is demanding, especially during this pandemic duration where human communication should be minimized. That is where TreatPlan plays an important role in the community to provide utilities at the tip of your fingers. The interface is made comprehensible for every level of age to make sure that it is accessible considering that not everyone is technology savvy. TreatPlan is motivated to serve as a companion to every patient as long as they are equipped with basic understanding to navigate in the web-app. Even before the pandemic started, gaining a place to undergo treatments is quite a hassle for every patient of what age since they have to make phone calls. This also conflicted the medical staff . as they needed to go through the schedule to book the patient's appointment and it gets a little difficult if there is a miscommunication between medical staff and the doctor treating the patients where the schedule might overlap. TreatPlan is all about combating these problems where it has been mentioned before, to ease the patients' experience all the way to undergo treatment initially until the end

Acknowledgement

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