

Online Care System

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Abstract. Appointment is defined as meeting someone in arrangement of date and time. Nowadays, appointments in clinic or hospital mostly in manual, peoples need to fill and insert their detail to the paper form then submit the form to staff or nurse who works at those clinic. In Kampung Bambangan Inanam, only 1 clinic was provided for the villagers. It is hard for villagers in there to book an appointment with a doctor. This is because of their system that is not really advanced, villagers need to go to the clinic and fill their details inside the paper form. Since it is a village, then there is no transportation provided, so citizen need to shuttle back to the clinic to book an appointment. Therefore an Online Care system should be developed. With this system, peoples especially in Kampung Bambangan Inanam will make their life more easier. They don't need to shuttle back to the clinic, they just insert their detail to the form from the system using internet and web browser then the data inserted will be display to the staff and clinic. The staff and doctor will arrange all the appointments whether the patient being approve or not

Keywords: shuttle; form; appointments; booking; internet.

1 Introduction

Sabah is the second biggest nation among 12 in Malaysia. 53 years after Merdeka, Sabah going to end up an advanced state simply like the other nation in Malaysia. Sabah likewise contain distinctive societies and races, and every one of them are caring towards each other. They never judge other individuals furthermore they treat individuals pleasantly who go to their place. Likewise, Sabah got a great deal of spot to do an excursion including the Island, Pulau Manukan, Pulau mabul, Buhau and different spots that truly intriguing and decent to go. In Sabah, there are additionally contain people groups who are stay in provincial zones. In country ranges, there are very few transportation gave, yet it had facility accomodated villagers.

Since there are relatively few transportation gave, people groups at country territories need to stroll from their place to other destination they need to go. Villagers likewise need to stroll from their home to go to the center. Different people that above 60 years of age likewise compelled to stroll from their place to clinic. So it gives trouble for the people to do an arrangement of facility. In rustic ranges, villagers doesn't know extremely well about social insurance and they don't recognize what prescription should they take for incidentally when they got a disorder of ailment.

Kamong Bambangan Inanam was located at Kota Kinabalu, Sabah. It is a village that well known in Inanam because of the peoples in the village that is really kind and helpful. In KBI, it contains lots of race, such as dusun, kadazan, bajau, suluk and timur. Some of this race are good and some are not, becuase of their attitude, but overall the villagers really kind to each other. In KBI also, it contain a good internet connection, and mostly villagers use smartphone to surf an internet using web browser and other browser apps. Furthermore, KBI also got 1 clinic where they depends on the clinic to cure themselves from small diseases. To make an appointment

with a doctor, the staff use booking form and villagers need to insert their detail information to the booking form. Then the staff will arrange which date and time suitable for them to come for the appointment.

2 Problem Background

In rural areas, villagers in KBI are hard to book an appointment especially in clinic since there are not many transportation provided and they need to walk from their place to reach their destination. So, by developing this Online Care it can help the folks and the villagers. Online care is the term that utilized by both media and scholastics to depict an era of doctors and well being professionals who convey social insurance including drug remedy over the web. Likewise it is utilized for individuals to make an arrangement to different Hospitals/clinics particularly who are in rustic ranges.

The vast majority of the general population from rustic regions need to stroll far away to get the arrangement from the specialist. It is waste of time if the appointment being rejected because the doctors are busy handling their patient. In Kampong Bambang Inanam, it takes almost 1 hour to arrive at the clinics Inanam and no transport/bus are provided in rural areas. Only 1 clinic was provided in the village so it is hard for villagers make an appointment when the doctors/staff busy handling their patients

Imagine if the clinic only got 1 clinic, there will be always crowded and full with patients so the other people from village cannot do an appointment. They need to go to Kota Kinabalu far away from village to get the appointment. Lots of time are wasted due to distance travelled.

By developing this web based system, peoples from the village only access through the system, login and choose any date and time that they think suitable for them. The form will be sent to staff/nurse and the approval form will be sent to doctors. The doctors will check their free time and check whether they can approve the appointment or not. Besides in my rural areas there are lots of people who are using smartphone and laptop. Furthermore the internet connection was slightly good and enough to access web. Almost 80% in my rural areas who are using this kind of smartphone and lappy, so it is easy to access the website.

2.2 Planned Parenthood

Planned parenthood is a website for a health care. This website especially for peoples who are married and to make sure everyone used to access the health care they need to keep their family to be in good condition or in healthy conditions. this website taught them how to do a birth control, the good and bad of Abortion, what is STDs and other diseases that being affect by couple if they didn't do a safety steps.

2.3 Care Hospitals

Care Hospitals is a multispecialty healthcare provider with 16 hospitals serving 8 cities across 6 states of India. It delivers comprehensive care in more than 30 specialties especially in tertiary settings. In this system, we can find a doctor with different specialties and different hospitals also in the page of patients, we can do a health check-up package, health tips and health calculators. In this system, we also can ask to an expert question about any healthy lifestyle or any diseases that they need to avoid and what steps should be done if they contact with this diseases. Patients also can do an appointment, but people who don't have any account also can do appointment so fake patients can do a fake appointment.

2.4 Academic Management Information System

Academic Management Information System (AMIS) is an information system designed specifically to manage information on a school or on any educational institution. AMIS is the central data storage for collection of data, processing, analysis and reporting of educational information. This educational information includes information related to the school, the classes, subject offered, students, teachers, staff and many more. AMIS is mainly used to create indicators to monitor the performance of the school or any educational institution in terms of educational achievements and extra-curricular achievements. Other than that, it is also used to monitor its student's performance, to keep track on the school activities and events, as well as managing the distribution and

allocation of educational resources and services.

2.5 Online Doctor

Online doctor is a term emerged during 2000s, used by both the media and academics to describe a generation of physicians and health practitioners who deliver healthcare including drug prescription over internet (“Online Doctor”,2016).

Based on the website for the online doctor, it used as prescription treatment online, Taught people who don't have any knowledge about healthy lifestyle. This system does not provide any appointment but this system secure the patient data. It also can provide pharmacy that suitable for our diseases. So whenever we order the medicine online, they will use the system cash on delivery, means that you pay on the spot. Besides that, using this system, you also can ask a simple question and you will get the instant answer.

2.6 CARE4U Services

CARE4U Services is a system for an appointment usually for care services. This system also provide a job service for the company especially job for a care assistant

3 Methodology

This system use two type of methodology, that is the evolutionary process model and protoyping model.

3.1 Evolutionary Process Model

Evolutionary model is an iterative. This approach is based on the idea of rapidly developing an initial software implementation from very abstract specifications and modifying this according to our appraisal. Each program inherits the best features from earlier versions and each version is refined based upon feedback from our self to produce a system which satisfies our needs. This model is selected because the requirements often changes while software gets develop, so the end product will be unrealistic. Evolutionary model also enable the software developer to develop increasingly more complex version of the software.

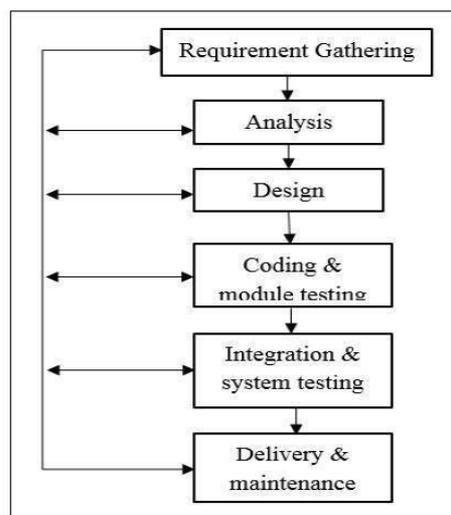


Figure 1 Evolutionary Process Model

3.2 Prototyping Process Model

The Prototyping Model is a system development method(SDM) in which a prototype also known as an early approximation of a final system or product is built, tested and then reworked as necessary until an acceptable prototype is finally achieved from which the complete system or product can now be developed. This model was selected because not all of the project requirements are known in detail ahead of time. It is an iterative, a trial-and-error process that takes place between the developer and the users.

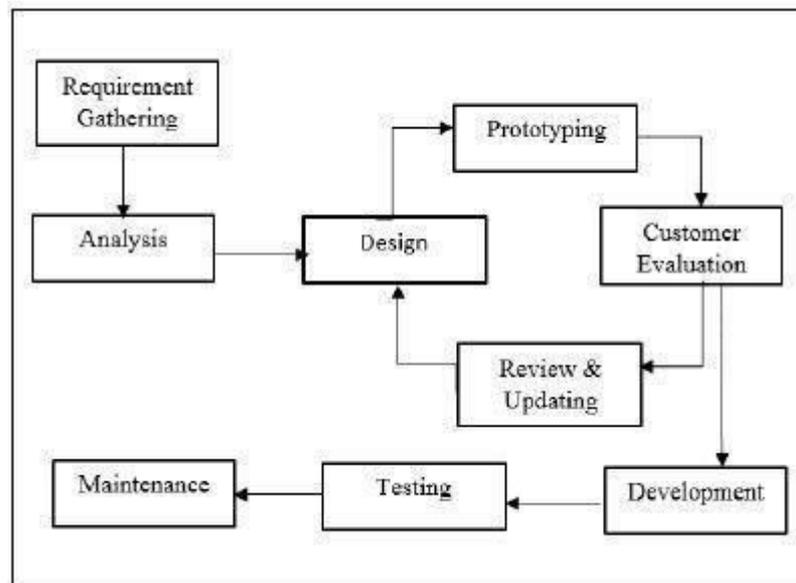


Figure 2 Prototyping Process Model

3.3 Overall use case diagram

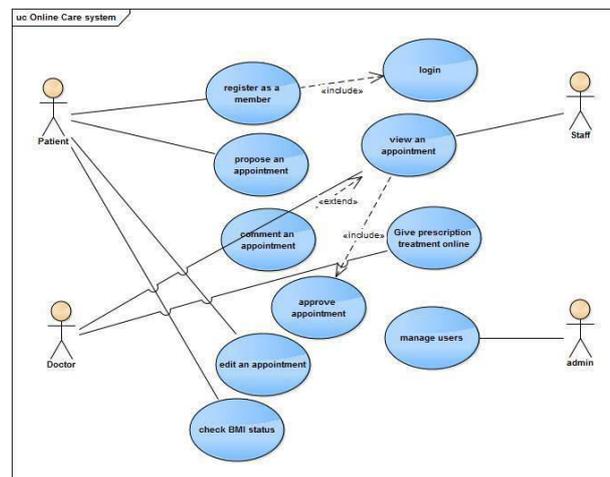


Figure 3 Overall Use Case Diagram

Use case diagram is a methodology used in system analysis to identify, clarify and organize system requirements. It consists of actors, use case or function and their relationship between the use case. Besides, it is also used to describe the interactions between actors and the system. Figure 3 shows the overview of the overall system requirement and functions.

Table 1 Use case specification

Use case	Description
UC-01 Register as a member	This use case allow user to register to the application if the user is first time using this application. User need to fulfill details such as username, password etc. The information entered will then be stored in database. After finished registration, user can login to the application to use it and it will provide session expired when user forgot to logout.
UC-02 Login	This use case allow patients to login to application in order for them to use the application. In this use case, username and password will be required from patients.
UC-03 Propose Appointment	This use case will allow patients to book an appointment . patients just need to fill the appointment form, if the appointment being rejected, patients can edit appointment then resend again.
UC-04 View Appointment	In this use case, there are 2 users that use this use case; Staff and doctor. On the first stage, Staff can view the appointment and all the approval appointment will depends on the staff. On the second stage, after staff approve the appointment, the status will be send to doctor to be approve but if the appointment being rejected, the status will be send to patients but staff need to comment the appointment what are the cause appointment being rejected. Doctors are the most important actor who will approve all the appointment.
UC-05 Give Prescription Treatment Online	In this use case, Doctors can post about performing a healthy lifestyle
UC-06 Approval Appointment	In this use case, staff will approve the appointment, then it will sent to doctor, the doctor then will approve the appointment.
UC-07 Comment appointment	Doctor can comment the appointment if doctor didn't approve the appointment
UC-08 Edit an appointment	Patients can edit their information appointment if their appointment didn't success. Then user can send back to get the approval.
UC-09 Check BMI status	This is just a small feature, user can check their own bmi status
UC-010 Manage Users	This use case will manage the user information, admin will insert all the data of the users into a system

Table 1 shows the use case specification for Online Care system. From the table, it shows that Online Care system consist only 10 use cases. This 10 use case will be implements into the module of Online Care

system where the module consist of login, appointment for booking and last checking the status or updating the status approval for the booking appointments

3.4 Data Model Online Care System

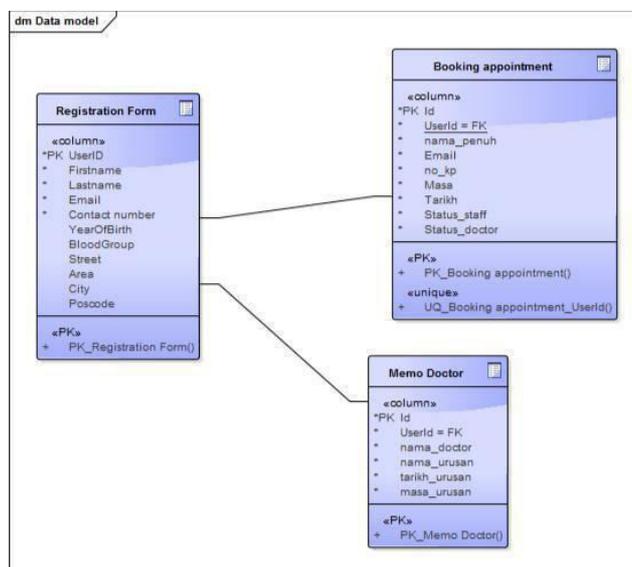


Figure 4 Data Model For Online Care System

Figure 4 shows the data model for the Online Care System. In this system, only 3 tables are going to be use. That is the registration form, booking appointment and memo doctor. Registration are for patient to register their name into the system so that they can log into the system. While the booking appointment are for patient to book appointment using online and lastly memo doctor for the doctor to fill their memo if they got urgent agenda or so on. From this, staff can see whether the date that patient register for the booking available or not.

4 Result

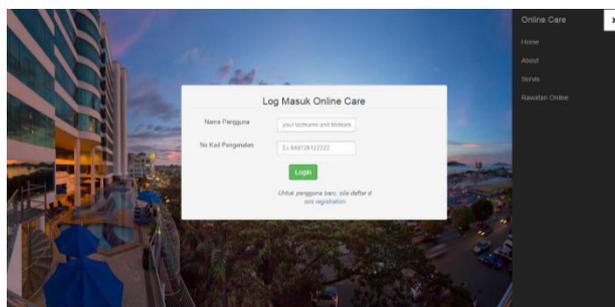


Figure 5 Login page

Figure 4.1 shows for login page for users. Each time users with different level will redirect to different page, for example patient will redirect to their own page, and doctor will redirect to their page.

Table 2 Black box testing for login

Variable	Equivalence Class	Status	Representative	T01	T02	T03	T04
Nama pengguna	X=vvarchar	valid	jessica	•	•		
	X=null	invalid				•	•
No kad pengenalan	X=vvarchar	valid	Jessica123	•		•	
	X=null	invalid			•		•
Expected Output							
Message dialog				ER1			
Error Message					ER2	ER3	ER4

Table 2 shows the black box testing for login page. In this page, validation will be use so that user can insert their correct details username and password

5 Discussion

All the use case for the system has been achieved. No defects or any data will be inserted as fake data. All the module system being checked by user whether it contains an error or not. Whenever we put the error keyword, the alert text will be display at top.

5 Conclusion

Online care system is a web based with a bootstrap templates that suitable for mobile user because it is friendly interfaces and easy to use. Most of the systems are not really interactive with user, usually the design interfaces look nice in the laptop, but by using the smartphone, the interfaces no really interactive. Some part of the feature are not compatible for the smartphone. That's why the bootstrap are the most important for the user interfaces. Implementing the css of the bootstrap will make the web more interactive. The 10 use cases are finally done and being tested successfully. The black box that use as testing whether it contains any defects or not

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