ONLINE BOOKING SYSTEM POC

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1. INTRODUCTION.

Imagine working up in the morning going to the office thinking that you are going to meet up with a patient, only to find out that when you get there you have at least two patients waiting for you at the office, apparently their schedule was booked exactly at the same time. Things like this happens all the time where there is duplicate in bookings more especially those bookings done manually by hand at the doctor's office. These things have caused many problems and often put people's life at risk. What if there is a solution to this, one that will make both the doctors' life and the patient's life easy. This report aims to find an innovative way of booking for an appointment. This booking will be an online booking meaning that there will not be any manual bookings and the patient will be able to book for themselves wherever they are at any time.

1.1. Purpose of the POC.

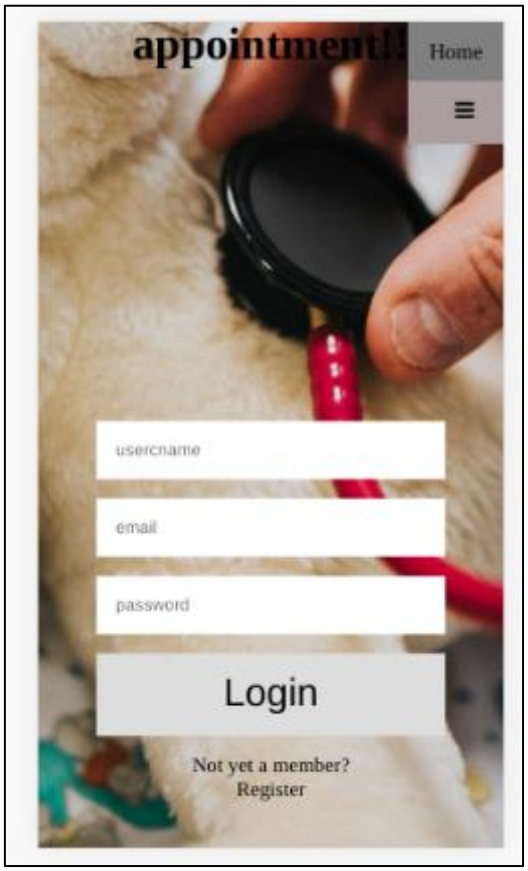
The purpose of this report is to find a way to schedule for appointment, this booking system must ensure that there are no double bookings. The patient must have the ability to cancel for an appointment at any time and reschedule for another time. Both the existing and new patients must be able to do an online booking.

1.2. Factors to be considered

For the purpose of this prefeasibility study the patient's data will be stored in a JSON file as oppose to MongoDB however, for the final project the data will be stored in a database since it is more secure and faster. For the purpose of this report things will be explained based on a MongoDB database

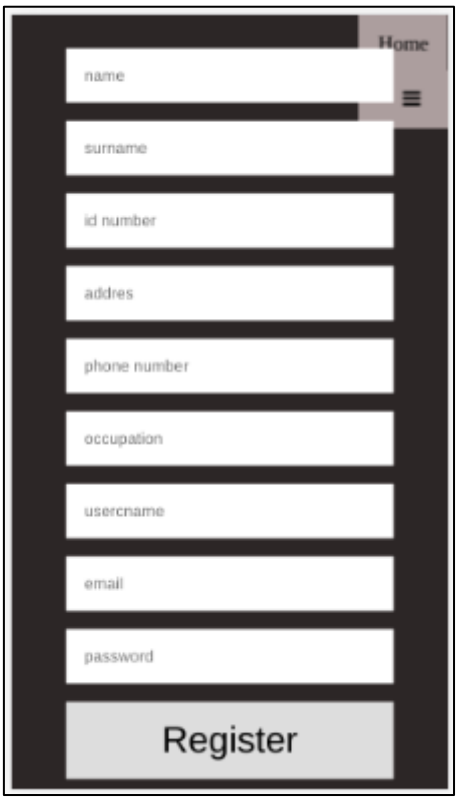
2. CREATE A WEBSITE AND A MOBILE APPLICATION FRONT END.

2.1. Home Page



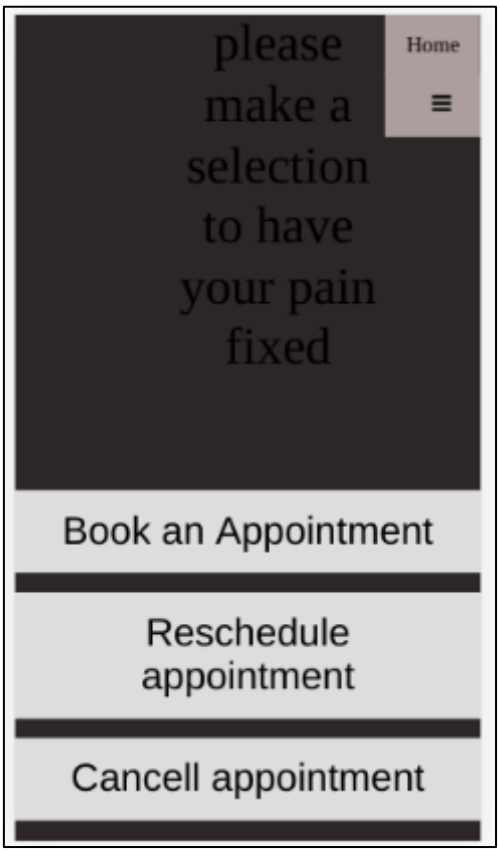
In order to avoid manual booking by hand a website application will be created. This website will be available to everyone both to new and existing patients. The patients will have to log in to the website. The first time a patient logs in they will have to register for an account where they will provide all their details including creating a password and a username which they will use every time they log in to the site. This will ensure that the patient information is stored and saved so that the next time they log in to book an appointment they do not have to produce their details. The home page will be the first page to appear on the website.

2.2. Registration in the website



The registration page is the page that the first-time visitor to the page will be taken to after they click on register. In this page the patient will be required to provide all their personal details from name to providing a password that will be used every time they log in. The data will be stored in a database will a unique id that will be automatically generated by the database. An id number is required because is one of the forms of identification that is unique to everyone, this will reduce the duplication from the same user since the database will detect that the user has already booked for an appointment through the id detection.

2.3. The appointments page



First time patient will be taken to the appointment page after they click the register button and existing user will be taken to the appointment page after they click the login button. In the appointment page the patient will have the options to book an appointment, reschedule an appointment and also cancel an appointment.

2.4. Book an appointment

The booking page will have a date and a time picker, the patient will be required to provide a date and time in which they will like to make an appointment. This can be a bit tricky because patient can pick the same date, however this will be solved on the database where booking information will be stored, the date will be set as a unique index meaning that the same date and time will not be saved at the same time. Although this might solve the problem of duplicates bookings it will be too much hard work for the user to be selecting the date and time and getting errors because that time and date has already been occupied by another patient. Therefore, to solve this the calendar will be able to show available dates and times, so that patients knows which time and date is available.

2.5. Reschedule an appointment.

In order for a patients to reschedule an appointment they will need to provide an id number email address and password this is to ensure that the current booking that they have on the database is deleted and the time is made available for another patient to make the booking on the that time. The date and time picker will be available similar to the one on the booking page.

2.6. Cancel an appointment

In order for the patients to cancel an appointment they need to provide an id number, email address and password this is also to ensure that the appointment data is deleted on the database and the time is made available for another patient to book. The doctor will get the notification when a patient book, reschedule or cancel and this will be automatically updated on their appointments calendar.

3. TYPE OF DATABASE TO BE USED TO STORE THE PATIENT'S INFORMATION.

There are a lot of databases that one can choose from out there where the patient information can be saved. The database ranges from SQL (Structure Query Language) which is relational database and it is table-based meaning that the data is stored in a form of a table to NoSQL which is a non-relational database and it is a collection of key-value pairs. MongoDB will be used for this project; this database is a NoSQL database and one of the popular databases in the NoSQL family. The data will be stored in a JSON document. MongoDB is known for its high speed it gives good performance, speed is very important when developing a website or an application.

MongoDB is also known for its scalability meaning that one can be able to reduce the workload by increasing the servers in the resource pool. It is also easy to use for both the administrators and the developers. It gives the ability to shard the database. MongoDB gives the flexibility of evolving the data without modifying the existing data.

MongoDB database can also be used to avoid having duplicate of data from the patient meaning that if there is a patient that has booked at a specific time another patient will not be able to book at that same time because the data is already saved on the database. This will also help with double bookings from the same patient.

Patients who has already booked cannot rebook unless they cancel the existing booking. MongoDB creates an id for every data which is stored in the database but to avoid duplicates bookings from patients the unique index needs to be used meaning that every data that is saved on the database will have to be unique. However since some people can share the same name and surname the unique index will not be set to true for everything but for things like id number or passport number for non-South African patient and also the dates in which the patient are booking to avoid having more that one person booking on the same date.

4. CONCLUSIONS

In conclusion it can be said that the used of an online booking is much secure than doing a manual booking which can often result in duplicates about bookings. The database ensure that the data is saved and only one patient can book a certain time and date at a time. MongoDB was chosen because it is faster.