

# **Feasibility Report**

## **SMART HEALTH CARE SYSTEM**



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# **Feasibility Report**

## **1. The Client**

Dr. Asim Rehmat, Professor Computer Engineering department, UET Lahore

## **2. The Tasks to be undertaken**

The project is to design a software to manage all the areas of a hospital such as medical, financial, administrative and the corresponding processing of services.

In addition, the system lists all of the various hospital departments as well as the doctors who work there. A patient's personal account can also be created through the system. There are three sections of this project. Panels for Admin, Patients, and Doctors are available. The user can simply make an appointment on this web application's overview. In other words, each user will be required to fill out a client-side appointment form. The patient's name, address, phone number, and department and doctor selections are all included in the form. The system also establishes personal accounts for each patient during this procedure.

## **3. Benefits**

- The system will facilitate online appointments in order to replace paper appointments. This will make the process smoother and efficient.
- It will allow multiple appointments to be organized simultaneously.
- It will allow PATIENTS to choose appointment date and time of their choice.
- In addition to making and attending appointments, treatment, prescription and billing areas are made efficient.

## **4. A Preliminary Requirements Analysis**

The system needs to meet the following functional requirements: **Web**

### **Interface**

- Admin Panel
  1. Login
  2. View following:
    1. Doctors Data
    2. Patients Data
    3. Pending Appointments
    4. Departments
    5. Treatment kinds
    6. Medical Records

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7. Patient's Treatment
8. Payment Information

- Doctor's Panel
  1. Login
  2. View personal information
  3. View following:
    1. Pending Appointment
    2. Patient's Profile
    3. Appointment Record
    4. Treatment Record
    5. Prescription Area
- Patient's Panel
  1. Login
  2. View personal information
  3. View following:
    1. Pending Appointment
    2. Treatment Record
    3. Prescription Record

## **Database**

- Must store data of admin, doctors and patients.
- Must store data of appointments
- Must store treatment records
- Must store prescription records
- Must store payment records
- Must store service and department records
- Must be able to link appointments with patients and doctors

## **Bluetooth Low Energy Module-BLE**

- Token Generation
- Patient and doctor gets notified when BLE in range.

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## **Optical Character Recognition-OCR**

- Electronic conversion of images of typed, handwritten or printed text. The system may have the following functional requirements:

## **Undecided Features**

- Clashes in appointments should be avoided.
- Limit on No. of doctors and patients
- Down payment made before confirmation of an appointment

Non-functional requirements are unspecified at this point. Foreseeable non-functional requirements may include: up-time, reliability, number of concurrent users supported, response time of the system, maintainability etc.

## **5. Technical Requirements**

In software projects, technical requirements typically refer to how the software is built. The Tools and languages we selected for the project:

- Html, css, Javascript for Front-end
- Xampp Server for php -localhost
- Mysql database & Sql server management studio
- PHP for backend
- OCR-libraries
- BLE Module

## **6. Scope**

- For the purposes of this project we are solely concerned with to replace paper signups for HOSPITAL with online signups providing an interacting UI for both doctors and patients.
- Providing a platform to doctors and patients where they will be able to make and attend appointments according to their need.

## **7. Walk-Through**

In order to ensure that the Doctors and the Patients are on the same page, the following walkthrough has been prepared to illustrate the Group's understanding of the product desired by the Client. The walk-through is not necessarily a reflection of the exact interactions for the final product; rather it should serve as a rough overview of the functionality required by the final product as the Group currently understands it.

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## ***Administrative walk-through:***

The administrator needs a way to login, view and manage everything in the database. To search appointment or doctors or patients the administrator will enter name of respective doctors or patients on a simple text-box, and the result will be appear if present in database. Administrator will be able to view complete data of both doctors and patients. Patients, doctors, departments, treatment kinds, and medical records may all be managed by an administrator. To view appointment schedule administrator can click on appointments scheduled.

## ***Client walk-through:***

The client needs a way to login, view appointment, book, edit and delete an appointment. To view his information the patient will click on My Info. If he has booked an appointment it will be also visible on My Info page. To modify or delete appointment the patient will click on edit or delete appointment .To view appointment schedule customer can click on appointment schedule.

## **8. Software Development Process**

The project will undertake the AGILE methodology that promotes continuous iteration of development and testing throughout the software development lifecycle of the project. Therefore, in our project, both development and testing activities are concurrent, unlike the Waterfall model.

- ***Process visibility*** – both the Client and the Group are certain which stage of the development process the project is in. Continues feedback will be taken from the client.
- ***Separation of tasks*** – the Group may concentrate on one area at a time, especially since some members of the Group have less experience in coding and in large scale software projects.
- ***Quality control*** – the agile model allows the Group to understand the requirements of the client better as there will constantly feedback.
- ***Client Satisfaction*** – agile model ensures that client is satisfied with each step.

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## **9. Visibility Plan**

**External** – The Group will conduct regular biweekly meetings with the Client at the Computer Engineering department. If situations arise or if a problem needs to be addressed between the meetings, the Group will conduct any further necessary communication via Zoom. As agile model will be used, a feedback will be required from the Client at the end of every step to ensure that both parties are in-sync and to minimize any miscommunication in the requirements.

**Internal** – The Group will meet as per need on Zoom to discuss progress and problems. Meeting minutes will be kept track of and sent to all members of the Group for reference. Any additional communication will be done in WhatsApp group or through other collaboration tools such as document sharing.

## **10. Outline Plan till Now (Milestones)**

### ***Milestone 1 (Proposal (Draft))***

Project Discussion-Problem analysis with client.

### ***Milestone 2 (Requirement Analysis)***

Requirement Analysis-Requirement Discussion ***Milestone***

### ***3 (Feasibility Report (Draft)).***

Feasibility study-technology, plan, budget, time division, task division

### ***Milestone 4 (Resources)***

Learn Technologies for implementation and gather resources

### ***Milestone 5(Web-App)***

Front-end Designs-dashboards, login, signup, contact pages

### ***Milestone 6(Back-end Development)***

Crud operations. Appointment management, prescription, billing

### ***Milestone 7 (OCR)***

OCR library integration

### ***Milestone 8 (BLE Integration)***

BLE Module integration

### ***Milestone 9 (Testing)***

Integration and acceptance testing of all modules.



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## **11. Reference**

Jinnah Hospital, Lahore

## **12. Resources**

Our group consists of 3 members, tasks will be divided as:

- **Development Member:**

Her task will be to connect frontend with backend & database.

- **Design Member:**

Her task will be to make frontend designs, database designs.

- **Social Media Member:**

She will do all sort of documentation.

We are given around 12 weeks of time to complete the system.

## **13. Usability**

Usability issues such as speed of operation for the user interface, collection and storage of important quantitative data, speed and efficiency of the work flow processes through automation, and concurrency of collected data will be important considerations.

## **14. Risk Analysis**

### ***1. Changing Requirements:***

- **Risk:**

The Client may have different ideas about the system during the course of the project. Depending on the situation, the changes that the Client wishes to have implemented may require little or major changes to the architecture.

- **Solution:**

To reduce the possibility of this occurring, the Group needs to establish a clear visibility plan with the Client.

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## **2. *Incomplete Requirements:***

- Risk:

It is possible that requirements may be implied but not discussed or misunderstood. This frequently occurs after meetings.

- Solution: The Group's interpretation of the Client's requirements will be presented back to the Client to get a confirmation on whether the Group has understood the Client. Frequent client updates and a high level of visibility will also help call attention to any misunderstandings.

## **3. *Human Resources:***

- Risk:

The Group is relatively small consisting of only 3 members, some members are not technically oriented and almost all members have limited knowledge of relevant web technologies.

- Solution:

For these reasons the Group acknowledges that a slow design and implementation phase may be inevitable, and are planning accordingly.

## **4. *Lack of Resources, Tools:***

- Currently we will be unable to provide online payment due to lack of access and cooperation with banks.
- Our website will only be dealing with events within Lahore.

## **1. 5. *Non-functional Requirements:***

- Risk:

Similar to incomplete requirements, non-functional requirements are something that has not been brought up in the initial meeting with the Client. These include requirements on the number of users that the system expects to support concurrently, and the response time of the database lookup.

- Solution:

A follow up meeting is needed to specify the non-functional requirements.

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## **15. Final Documentation and Presentation**

Documentation for the final version of the product will be presented to the client so that the end product can be maintained and extended. This will include information on all required features, which will be fully implemented. The documentation will also cover any desired and optional features that have also been implemented. The team will also provide a demonstration of the system and training so that the client can understand how the user interface is intended to be used.

## **16. Conclusion**

Based on the analysis of this feasibility study, the Group has collectively agreed that this project IS FEASIBLE and the group IS WILLING to take on the mentioned project. The benefits are significant enough to justify the development effort required .The preliminary deadline for the project will be set for the last week before the final exams.

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