**Deccan Education Society’s**

**Fergusson College (Autonomous), Pune**

**Department of Computer Science**

# **A**

# **Project Report**

# **on**

# ***“*Doctor Patient Portal”**

# In partial fulfillment of Post Graduate course

# in

# M.Sc. Computer Applications - II

# (Semester -III)

# CSA5312 Computer Applications Project - III

SUBMITTED BY

*Sarvesh Patil (ROLL NO – 2263005****)***

# *Siddhi Honrao (ROLL NO – 226310)*

# *Pratik Vispute (ROLL NO – 226319)*

# *Harshvardhan Patil (ROLL NO – 226367)*

# 



**Deccan Education Society’s**

**Fergusson College (Autonomous), Pune**

**Department of Computer Science**

# **CERTIFICATE**

This is to certify that the project entitled

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ submitted by

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

in partial fulfillment of the requirement of the completion of M.Sc. (C.A)-II [Semester-III], has been carried out by them under our guidance satisfactorily during the academic year 2022-2023.

Place: Pune

Date: / /2022

**Dr. Kavita Khobragade**

**Head,**

**Department of Computer Science**

**Fergusson College (Autonomous), Pune**

**Project Guide:**

**Dr. Kavita Khobragade**

**Examiners Name Sign**

**1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Index**

| **Sr. No** | **Table of Content** | **Page No** |
| --- | --- | --- |
| **1** | **Introduction** |  |
| 1. Existing System |  |
| 1. Need of the System |  |
| 1. Overview of the Project |  |
| **2** | **Analysis** |  |
| 2.1 Feasibility Study |  |
| 2.1.1 Technical feasibility |  |
| 2.1.2 Economical Feasibility |  |
| 2.1.3 Operational feasibility |  |
| 2.2 Hardware and Software requirement |  |
| **3** | **Design** |  |
| 3.1 Database Table designing OR Algorithm Specifications (Applicable to Project) |  |
| 3.2 UML Diagram  Use case diagram,  Class diagram,  Sequence/Activity diagram,  Deployment diagram |  |
| 3.3 Input / Output Screens |  |
| **4** | **Testing** |  |
| 4.1 Importance of testing |  |
| 4.2 Types of testing (testing which are performed for your project) |  |
| 4.3 Test cases |  |
| **5** | **Reports** |  |
| **6** | **Drawbacks and limitations** |  |
| **7** | **Conclusion** |  |
| **8** | **Future enhancement** |  |
| **9** | **References and Bibliography** |  |

1. Introduction

A doctor-patient portal is a digital platform that facilitates communication and collaboration between healthcare providers and their patients. This innovative tool has revolutionized the healthcare industry by enhancing the quality of care, improving patient engagement, and streamlining administrative tasks. The project is built using Java, HTML, CSS, JavaScript programming languages, with MySQL as the database management system.

1.1Existing System

The current healthcare system relies heavily on traditional, paper-based record-keeping and in-person interactions. Patients face challenges in accessing their scheduling appointments and communicating with their healthcare providers efficiently.

1.2 Need of the System

The need for a doctor-patient portal arises from the imperative to modernize healthcare, enhancing patient engagement and streamlining administrative tasks. It aims to provide secure, convenient access to health information, facilitate online communication, and ultimately improve the quality of care.

* 1. Overview of the Project

The Doctor Patient Portal project seeks to create a robust digital platform that bridges the gap between patients and healthcare providers. It includes features like secure messaging, appointment scheduling, access to medical records, and online billing. The project's focus is on delivering a user-friendly, secure, and efficient healthcare experience, benefiting both patients and medical practitioners.

2. Analysis

2.1. Feasibility Study

A feasibility study is conducted to determine the practicality of the project. The following factors are considered:

2.1.1 Technical Feasibility:

The system consists of a fully functional web-based application. The primary technologies and tools associated with this project are Java, HTML, CSS, MySQL, Bootstrap. Since all the technologies are open source and freely available and their technical skills required are manageable. Therefore, it is technically feasible.

2.1.2 Economical Feasibility:

The proposed system being a web application, it will be hosted on a free local web server, therefore there will be no hosting costs. This online application can be created using open-source software which is free of cost and can be accessed using any web browser, therefore, there will be no additional charge to the user to use this website. Therefore, it is economically feasible.

2.1.3 Operational Feasibility:

The proposed system is a website which does not require any extra training. The user can be educated with the basics of technology which will be enough to operate the website. Therefore, it is operational feasible.

* 1. Hardware and Software requirements

2.2.1 Hardware Requirements

Processor : Intel i3

Main Memory : 4 GB RAM

Hard Disk/ SSD : 256 GB

2.2.2 Software Requirements

Operating System : Windows 10

Framework/Tool : Bootstrap

Front End : HTML, CSS, JavaScript, Bootstrap

Back End : Java, MySQL

Web Server : Apache Tomcat

3. Design

3.1 Database Table Designing

4. Testing

4.1 Importance of testing

In projects, testing is a way to make sure that the requirements under a project are fulfilled accurately and

it is bugs free from manual errors, invalid inputs, system environment issues, coding issues, performance,

security etc. Testing also helps to make our system better by knowing and understanding the bugs

associated with it. Bugs can be related to User experience, Usability, Functionality etc.

Some of the factors that state the importance of testing are:

• It produces a defect-free system.

• It ensures that the user is satisfied. It ensures all the requirements are met.

• It ensures the proper working of all the functionalities of the system.

• It ensures that the system works as expected.

• It ensures security and safety. It ensures a good performance of the system.

4.2 Types of Testing

Validation Testing:

It was carried out to confirm that all functional and performance specifications were satisfied or not.

Usability Testing:

It was carried out to check how user- friendly the system is in terms of ease of use and intuitiveness. The usability testing revolves around the entire system - driven user experience with insights that include the identification of bugs and recommendations for ways to improve the user experience, both in and out of the system.

System Testing:

It was carried out to guarantee that the system meets all the user’s needs, such as online responsiveness, system functionalities, and other factors by putting invalid inputs to examine logical changes made in it with the goal of discovering faults.

Black Box Testing:

It was carried out for authentication of user and allows the system designer to define input procedures that are completely exercised and full fill all functional criteria for a programme. It verifies that the input data is valid and that the required output is being produced.

Interface Testing:

It was carried out after all the modules of the system are completely developed, to ensure that all the bugs are fixed and verified.

4.3 Test cases

**6. Drawback and Limitations**

While offering numerous benefits, also have several drawbacks and limitations to consider in their development and implementation. Some of these include:

* **Limited Accessibility:** Not all patients have access to the internet, or the digital literacy needed to use these portals effectively. This can lead to healthcare disparities, leaving some patients behind.
* **Data Security Concerns:** Protecting patient data is paramount. However, portals can be vulnerable to security breaches and cyberattacks, potentially exposing sensitive medical information.
* **Provider Resistance:** Healthcare providers may be resistant to using these portals, leading to underutilization and a lack of communication with patients.
* **User Experience Challenges:** Portals need to be user-friendly and intuitive. Complex interfaces or confusing features can deter patients from using the system effectively.
* **Legal and Regulatory Compliance:** Healthcare is highly regulated, and doctor-patient portals must adhere to strict privacy and security standards, such as HIPAA in the United States. Ensuring compliance can be complex and costly.
* **Limited Scope of Services:** While portals offer a range of features, they may not cover every aspect of patient care, and some medical issues still require in-person visits.

7. **Conclusion**

* In conclusion, the doctor-patient portal project represents a significant leap forward in the healthcare industry, bridging the gap between patients and healthcare providers through innovative technology. These portals have the potential to revolutionize the way healthcare is delivered and experienced. By facilitating secure communication, streamlining administrative tasks, and providing convenient access to health information, doctor-patient portals enhance patient engagement and improve the quality of care.
* However, it is essential to acknowledge that challenges and limitations, such as data security concerns, accessibility issues, and resistance to change, must be addressed to realize the full potential of these platforms. To maximize the benefits of doctor-patient portals, future enhancements, including telemedicine integration, AI features, and wearable device support, should be considered to keep the system up to date with evolving healthcare needs and technological advancements.
* As the healthcare landscape continues to evolve, doctor-patient portals stand as a promising tool for driving efficiency, improving patient outcomes, and ultimately transforming the patient-provider relationship. The success of these portals lies in the careful consideration of patient needs, the rigorous adherence to data security and privacy standards, and the ongoing commitment to innovation in healthcare technology. With these elements in place, doctor-patient portals have the potential to shape the future of healthcare, making it more patient-centered, accessible, and effective.

**8. Future enhancement**

To enhance new opportunities, the proposed system may implement the following features:

* **Telemedicine Integration:** Enable real-time video consultations and expand telehealth services within the portal, providing a comprehensive virtual care experience for patients.
* **Artificial Intelligence (AI) Features:** Implement AI-driven tools for predictive health analytics, personalized treatment recommendations, and chatbots for instant responses to patient queries.
* **Wearable Device Integration**: Connect with wearable health devices (e.g., fitness trackers, smartwatches) to automatically update patient health data, fostering preventive care and remote monitoring.
* **Mobile Application Development:** Develop dedicated mobile apps to improve accessibility and allow patients to manage their health on the go, receiving push notifications and reminders.
* **Multilingual Support:** Offer support for multiple languages to cater to a diverse patient population, ensuring inclusivity and accessibility.
* **Integration with Third-party Services:** Collaborate with pharmacies, insurance providers, and laboratories to streamline the prescription ordering, claims processing, and test result retrieval processes.
* **Voice and Speech Recognition:** Incorporate voice and speech recognition for hands-free navigation and data input, particularly beneficial for elderly or disabled patients.

In a nutshell, it can be summarized that the future scope of the project circles around giving more facilities and privacy controls.

**9. References and Bibliography**

Web References:

• www.getbootstrap.com

• www.tripsavvy.com

• www.slideshare.net

• www.phptpoint.com

• www.w3school.com

• www.php.net