**TITLE OF THE PROJECT**

## A PROJECT REPORT

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### *Under the guidance of,*

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***in partial fulfillment for the award of the degree of***

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**IN**

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**PRESIDENCY UNIVERSITY**

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**CERTIFICATE**

This is to certify that the Project report **“HOSPITAL QUICK FINDER”** being submitted by “AMULYA B, SNEHA N, BHAVANA A, HEMANTH GOVINDA RAJ” bearing roll number(s) “20211ISR0056, 20211ISR0053, 20211ISR0054, 20211ISR0049” in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering is a Bonafide work carried out under my supervision.

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**DECLARATION**

We hereby declare that the work, which is being presented in the project report entitled **HOSPITAL QUICK FINDER** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering**, is a record of our own investigations carried under the guidance of **SUPERVISOR NAME, DESIGNATION,** **School of Computer Science Engineering & Information Science, Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

|  |  |
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**ABSTRACT**

A digital tool called the Hospital Quick Finder was created to make it easier to find hospitals, clinics, physicians, and other critical healthcare services. Patients, carers, and visitors frequently struggle to navigate complicated hospital infrastructures and discover accessible services, particularly during emergencies, in today's healthcare systems where accessibility and prompt care are essential. The Hospital Quick Finder provides precise information about local hospitals, department locations, doctor availability, and resource statuses, availability of doctors, by utilizing technologies like GPS, real-time data integration, and user-friendly interfaces. By cutting down on search time, facilitating better navigation on expansive medical campuses, and providing real-time updates to promote informed decision-making, this technology improves healthcare accessibility. By simplifying patient flow and resource management for hospital administrators, it also addresses operational inefficiencies. Notwithstanding its benefits, issues like inadequate digital infrastructure, insufficient data integration, and privacy problems still require investigation and improvement.

**ACKNOWLEDGEMENT**

First of all, we indebted to the **GOD ALMIGHTY** for giving me an opportunity to excel in our efforts to complete this project on time.

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**CHAPTER-1**

**INTRODUCTION**

* 1. **Hospital Quick Finder**

A digital tool called the Hospital Quick Finder was created to make it easier to find hospitals, certain departments, physicians, and medical services. It gives patients, caregivers, and guests easy access to vital medical facilities by utilizing cutting-edge technology like GPS, real-time data integration, and user-friendly interfaces. Users can use the site to look for hospitals in their area, find particular departments like Radiology, Cardiology, or Emergency, and access services like diagnostic centres and pharmacies. In order to provide prompt and effective medical care, it also provides real-time reports on doctor availability, waiting times, ER occupancy, and bed availability. Furthermore, amenities like interior navigation systems make it easier for patients to navigate big hospitals, improving accessibility and lowering stress levels.

* 1. **Need For Hospital Quick Finder**

The increasing difficulties in effectively obtaining healthcare services in the current complicated and fast-paced medical environment give rise to the necessity for a hospital quick finder. Patients, caregivers, and visitors frequently have trouble finding hospitals, certain departments, or doctors due to growing urbanization and the growth of healthcare facilities. This causes delays in getting prompt medical assistance. Navigating large hospital infrastructures without the right advice can lead to stress, misunderstanding, and wasted time because they can be daunting. Additionally, being able to locate the closest hospital, supplies, or emergency services in a timely manner is essential for saving lives during catastrophes. The difficulties are exacerbated by lengthy wait times, a lack of awareness of hospital facilities, and a lack of real-time information on emergency department status, bed occupancy, and doctor availability.

* 1. **Target Users Of Hospital Quick Finder**
* Patients seeking healthcare services.
* Caregivers, family members, and visitors.
* Hospital staff, administrators, and healthcare professionals.
  1. **Relevance in Today’s Healthcare Systems**

In today's healthcare systems, where patient-centred care, efficiency, and accessibility are top objectives, the Hospital Quick Finder is extremely pertinent. Large multispecialty hospitals and expansive medical campuses are examples of the increasingly complicated modern healthcare infrastructures, which frequently make it difficult for patients to find departments, doctors, and services. This is made worse by the increasing need for prompt and dependable access to healthcare services brought on by urbanization, population density growth, and an increase in both emergency and chronic healthcare requirements. A tool like the Hospital Quick Finder is extremely helpful in emergency situations where every second counts. It allows patients or caregivers to rapidly navigate, find the closest hospital or emergency room, and check the availability of resources.

Furthermore, the digital revolution in healthcare highlights the value of intelligent solutions that enhance patient experiences and expedite processes. The Hospital Quick Finder meets the demands of timeliness, convenience, and transparency in healthcare delivery by incorporating location services, real-time updates, and intuitive navigation tools. Additionally, it is in line with the trend toward technology-driven solutions that are transforming contemporary healthcare, such as cloud-based systems, IoT-enabled infrastructure, and AI-powered services. This application helps consumers make educated healthcare decisions by bridging the gap in underprivileged or rural areas by offering easily available information. The Hospital Quick Finder continues to be an essential tool for enhancing accessibility, cutting down on delays, and guaranteeing that patients receive prompt and effective care as healthcare systems change.

**CHAPTER-2**

**LITERATURE SURVEY**

**CHAPTER-3**

**RESEARCH GAPS OF EXISTING METHODS**

The research gaps of present hospital quick finding methods draw attention to the shortcomings and potential areas for enhancement of current systems, highlighting the necessity of innovation and progress.

1. **Limited Real – Time Data Integration:**

One of the primary research needs is the current hospital quick finders' inadequate real-time data integration. The most recent data on items like bed availability, ER wait times, and doctor availability is sometimes not provided by many systems. This lack of real-time data could make the instrument inaccurate, especially in emergency situations where patients need accurate and timely information. Users may end up wasting time or facing delays in the absence of real-time updates, which could negatively impact patient care and hospital efficiency. Improving real-time data integration would make hospital rapid finders more reliable and helpful for users in emergency situations.

1. **Lack of Indoor Navigation Systems:**

The absence of indoor navigation features is a major drawback of the hospital fast locator systems now in use. Although these tools frequently have GPS to assist users in finding hospitals outside, they are unable to provide navigation support once users reach expansive or intricate hospital grounds. Several buildings, floors, and departments are common features of modern hospitals, particularly multispecialty facilities. Patients, guests, and even employees may find it difficult to find certain departments, such as radiology, cardiology, or emergency wards, without adequate interior navigation, which could result in time loss, tension, and delays in receiving care.

1. **Absence of Personalized Recommendations:**

The lack of tailored recommendations is a significant drawback of the hospital fast finder systems now in use. The generic search results produced by current technologies do not take user preferences, medical history, or particular needs into account. Patients find it challenging to locate the best hospitals, doctors, or services in a timely manner as a result. A patient with a persistent illness, for instance, could require specific recommendations for medical facilities with qualified specialists.

1. **Poor Integration with Hospital Management Systems:**

The inadequate integration with hospital management systems (HMS) is a major drawback of the current hospital quick locator systems. The information given is frequently lacking or out-of-date if real-time data, such as doctor schedules, bed availability, or appointment times, are not accessible. Accurate and current information would be ensured by integrating with HMS and electronic health records (EHR), which would improve user experience and efficiency.

1. **Data Privacy and Security Concerns:**

Since hospital quick finder systems handle sensitive patient and hospital data, data privacy and security are top priorities. The danger of data breaches and unauthorized access rises sharply in the absence of strong security measures and regulatory compliance.

1. **Limited Emergency Support:**

Hospital quick locator systems' inability to offer real-time information on vital resources like intensive care unit beds, trauma treatment, or doctor availability is hampered by their lack of emergency support. Improving this feature would improve patient care by ensuring quicker responses in an emergency.

1. **Scalability Issues:**

Scalability issues in hospital quick finder systems limit their ability to handle large healthcare networks or expanding regions. Many tools struggle to accommodate growing data volumes, especially in urban or rural areas, affecting performance and accessibility. Ensuring scalability is crucial for reliable and widespread healthcare support.

1. **Interoperability Challenges:**

The inability of hospital quick finder systems to integrate with different databases, healthcare platforms, and hospital administration systems leads to interoperability issues. This fragmented information results from a lack of smooth data interchange between several systems, which lessens the tool's ability to deliver precise, real-time updates and a consistent user experience. To increase functionality and customer happiness, it is imperative to ensure improved cross-platform integration.

**CHAPTER-4**

**PROPOSED MOTHODOLOGY**

The Hospital Quick Finder system's suggested technique can be broken down into multiple crucial stages to solve current issues and enhance functionality.

1. **Data Integration and Real-Time Updates**:

Provide precise, current information on bed availability, doctor schedules, appointment times, and emergency department status by integrating the fast finder with electronic health records (EHR), hospital management systems (HMS), and real-time data sources. For real-time updates, use APIs to facilitate smooth data transfer across systems.

1. **Personalized User Experience:**

Use machine learning (ML) and artificial intelligence (AI) algorithms to provide tailored advice based on user profiles, past medical records, and present health requirements. This enables the system to customize recommendations for doctors, departments, and hospitals for more effective search results.

1. **Indoor Navigation System:**

Use augmented reality (AR), Bluetooth beacons, and the Internet of Things (IoT) to provide indoor navigation functions. This would lessen confusion or delays while assisting users in navigating huge hospital campuses and locating particular departments, rooms, or services.

1. **Emergency Support Features:**

Add elements to the system that put emergency assistance first. With an emphasis on directing users to the closest hospital with the required resources in an emergency, this includes the real-time availability of critical care resources such intensive care units, trauma units, and physicians.

1. **Data Privacy and Security Measures:**

To safeguard patient data and guarantee confidentiality when utilizing the system, put strong security measures in place, such as encryption, multi-factor authentication, and adherence to healthcare privacy laws (HIPAA, GDPR).

1. **Scalability and Cloud Infrastructure:**

Create the system on a cloud-based platform that is scalable so that it can support the growth of healthcare networks and hospitals, handle growing user traffic, and handle enormous datasets. This guarantees that the system will continue to function as the healthcare network expands.

1. **User-Friendly Interface and Accessibility:**

Create a straightforward, user-friendly interface that is suitable for all user types, including elderly and disabled patients. Support multiple languages in order to serve a variety of demographics.

**CHAPTER-5**

**OBJECTIVES**

A Hospital Quick Finder system's goals are several and include increasing patient access to medical treatments, optimizing hospital operations, and improving the patient experience in general. The system's primary goal is to make it easier for patients and tourists to locate hospitals, departments, physicians, and medical services in their area. This will save them time and effort. Additionally, it aims to give patients up-to-date, precise information on hospital resources, such as doctor schedules, emergency department status, and bed availability, so they can make decisions fast.

Furthermore, by considering variables including user preferences, medical history, and the urgency of care, the system seeks to provide tailored recommendations that guarantee the search results match the individual's particular requirements. Integrating interior navigation systems is another important goal, which will make it easier for patients to move about expansive hospital campuses, especially in intricate, multi-building facilities.

By following healthcare laws such as HIPAA and GDPR, the Hospital Quick Finder also seeks to establish data security and privacy, safeguarding patient data at every stage. Another goal is scalability, which will allow the system to accommodate an increasing number of healthcare networks and hospitals. The technology guarantees that patients in immediate need of care can easily locate local hospitals with the resources they require by enhancing emergency assistance features. The ultimate goal is to provide a dependable, easy-to-use tool for navigating healthcare systems in order to increase operational efficiency, lessen hospital congestion, and improve patient happiness.

By connecting with different hospital administration systems, the Hospital Quick Finder seeks to improve interoperability and facilitate easy data sharing across healthcare providers. Better cooperation between hospitals and medical personnel is fostered by this integration, which increases the accuracy of the information delivered.

**CHAPTER-6**

**SYSTEM DESIGN & IMPLEMENTATION**

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**TIMELINE FOR EXECUTION OF PROJECT**

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**OUTCOMES**

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**RESULTS AND DISCUSSIONS**

The Hospital Quick Finder's deployment has shown encouraging outcomes in resolving issues with healthcare navigation and accessibility. Important results show how well it works to cut down on patient search times, enhance hospital navigation, and streamline operations in medical facilities.

1. **Improved Accessibility and Time Efficiency**

According to the findings, patients and caregivers spend significantly less time looking for hospitals, departments, or physicians. The seamless navigation of vast healthcare campuses and the identification of adjacent hospitals were made possible by the integration of location-based services and real-time updates. The application made it possible to quickly identify the closest institutions in emergency situations where time is of the essence, guaranteeing prompt treatment delivery.

1. **Enhanced User Experience**

The Hospital Quick Finder's easy-to-use design and simple navigation made it more accessible to a broad spectrum of users, including patients who are not tech-savvy and the elderly. Moreover, features like internal navigation in large hospitals, which reduced confusion and anxiety during hospital stays, addressed a major deficiency in the existing systems.

1. **Real-Time Updates for Informed Decisions**

Improving patient and caregiver decision-making required the incorporation of real-time data, such as doctor scheduling, emergency room status, and bed availability. Due to the availability of real-time information, users expressed increased satisfaction, which decreased instances of crowding and lengthy wait times.

1. **Streamlined Hospital Operations**

The technology enhanced patient flow and resource allocation from the standpoint of hospital management. Because customers could rapidly locate departments, schedule appointments in advance, and receive real-time updates, hospitals saw an increase in operational efficiency while reducing delays and administrative burdens.

1. **Challenges Observed**

Not with standing these favorable results, some difficulties were observed. For example, inadequate hospital data integration and a lack of digital infrastructure caused problems in some neglected or rural areas. Furthermore, worries about data security and privacy highlighted the necessity of strict adherence to healthcare regulations such as GDPR or HIPAA.

1. **Discussion on Future Scope**

The findings imply that the user experience can be further customized by integrating cutting-edge technology like artificial intelligence and predictive analytics. Future development of features that could greatly increase the system's functionality, such as voice-enabled navigation and healthcare integration, was noted.

**CHAPTER-10**

**CONCLUSION**

To sum up, the Hospital Quick Finder is a priceless resource that tackles the growing difficulty of navigating healthcare systems in the fast-paced world of today. It greatly cuts down on search time and improves the patient experience by providing rapid and simple access to local hospitals, certain departments, physicians, and medical services. The solution makes sure patients and visitors can quickly get the care they require, particularly in emergency situations, by combining real-time data, personalized recommendations, and indoor navigation systems.

Furthermore, the system's emphasis on interoperability, scalability, and data security guarantees that it can manage the expanding needs of healthcare networks and continue to provide reliable performance across a range of platforms. In addition to increasing hospital operations' efficiency, the Hospital Quick Finder gives patients the power to make knowledgeable healthcare decisions, which improves patient outcomes. In the end, the tool will be essential to simplifying healthcare access, increasing operational effectiveness, and raising patient satisfaction levels as healthcare systems develop further.

**REFERENCES**

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**ENCLOSURES**

**1. Journal publication/Conference Paper Presented Certificates of all students.**

**2. Include certificate(s) of any Achievement/Award won in any project-related event.**

**3. Similarity Index / Plagiarism Check report clearly showing the Percentage (%). No need for a page-wise explanation.**

**4.** **Details of mapping the project with the Sustainable Development Goals (SDGs).**