NAVJEEVAN EDUCATION SOCIETY'S POLYTECHNIC

Ganesh Nagar, Bhandup (W), Mumbai-400078

Project Report
On

WHEELCHAIR GUIDANCE & ASSISTENCE SYSTEM FOR THE DISABLED

UNDER THE GUIDENCE OF:

MR. MAHESH PIMPALKAR

SUBMITTED BY:

Ms. FARANA N. SHAIKH

DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year- 2023-24

I

CERTIFICATE

This is to certify that the project entitled

"WHEELCHAIR GUIDANCE & ASSISTENCE SYSTEM FOR THE DISABLED"

Has been carried out successfully in our premises by

Ms. FARANA N. SHAIKH

Under the guidance in partial fulfillment for the

MR. MAHESH PIMPALKAR

DIPLOMA IN INFORMATION TECHNOLOGY

Affiliated to

Maharashtra State Board of Technical Education

During the academic year **2023-2024** is record of student. To best of our knowledge and belief, this work has not been submitted elsewhere for the award of any other degree.

Project Guide   **H.O.D.**

Principal   **External Examiner**

ACKNOWLEDGEMENT

It gives us immense pleasure for presenting this report for the project **"wheelchair guidance & assistance system for the disabled"**.

We profoundly thank our principle **Dr Ajay S. Bhoir** for giving us support throughout the course and thus made us capable of being worthy of recognition and extended every facility to us for making and completing this project smoothly.

We would like to express our sincere thanks to **Mr. Mahesh Pimpalkar** Head of IF Department for his constant encouragement, which made this project a success. We owe our deep gratitude to,

Mr. Mahesh Pimpalkar Our Project Guide for rendering her valuable guidance with a touch of inspiration and motivation. She has guided us quite a lot in negotiating through the hurdles by giving plenty of early ideas and which resulted in the present fine work.

We would like to thanks the all the faculties, lecturers and non-teaching staff of **Navjeevan Education Society's Polytechnic college, Bhandup** for providing us sufficient information which helped us to complete our project successfully. Their guidance has always inculcated confidence in us.

We also thank our family members for their continued support in completing this project work. And last but not the least, we wish to thank all my friends and well-wishers who are directly or indirectly linked with success of our project. And to the almighty God, who made all things possible.

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FARANA N. SHAIKH

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ABSTRACT

The "wheelchair guidance & assistance system for the disabled " addresses a critical need in society by tackling the persistent issue of accessibility for individuals reliant on wheelchairs. With approximately 1% of the global population requiring wheelchairs for mobility, it's imperative to confront the significant challenges they face, especially in regions where accessibility infrastructure is lacking. This app emerges as a beacon of hope, offering practical solutions to enhance the daily lives of wheelchair users worldwide.

At its core, the Wheel of Life app is designed to empower individuals with disabilities, granting them greater agency and independence in navigating their surroundings. By providing a comprehensive platform for locating essential facilities like wheelchair-accessible toilets, medical equipment vendors, and hospitals, the app equips users with the tools they need to navigate the world with confidence. Leveraging the capabilities of geolocation technology, the app revolutionizes how wheelchair users interact with their environment. Through real-time location tracking, users can effortlessly pinpoint nearby accessible places, eliminating the need for exhaustive manual searches.

This seamless integration of technology not only streamlines the user experience but also represents a significant step forward in leveraging innovation for social good. The development of the Wheel of Life app prioritizes user experience above all else. Built using Android Studio with Java programming language, the app boasts a sleek and intuitive interface, ensuring accessibility for users of all abilities. Every aspect of the app's design is meticulously crafted to cater to the unique needs and preferences of wheelchair users, fostering inclusivity and usability. While accessibility challenges may vary from one region to another, the Wheel of Life app holds the promise of making a global impact.

By transcending geographical boundaries and providing support to wheelchair users wherever they may be, the app embodies the spirit of inclusivity and solidarity. Its potential to bridge the accessibility gap in developing and underdeveloped countries is particularly noteworthy, offering hope for a more equitable future. As with any innovative endeavor, the Wheel of Life app is a work in progress.

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LIST OF FIGURES

CHAPTER NO. 01

INTRODUCTION

1.1 INTRODUCTION

- Nearly 1% of the human population requires a wheelchair for mobility.
- However, most developing and underdeveloped countries still lack proper wheelchair accessibility.
- Visiting new places proves to be a daunting task for individuals requiring a wheelchair as it becomes difficult to locate accessible washrooms.
  - Designed to be user friendly, The Wheel of Life app assists disabled individuals with finding the nearest:
    - Wheelchair Accessible Toilets
    - Vendors of wheelchairs and other medical equipment.
    - Wheelchair repair shops
    - NGOs
    - Hospitals
    - Police Stations.
- Depending on their current location, this application enables the user to find wheelchair-accessible places around them. The android application is developed using Android Studio with JAVA as a programming language. The significance of the Wheel of Life app extends beyond its practical utility; it embodies a commitment to inclusivity and equal access for all individuals, regardless of their mobility limitations.
- By leveraging technology to address real-world challenges, the app exemplifies the potential of innovation to create positive social impact and improve the quality of life for marginalized communities.

1.2 OVERVIEW OF PROJECT

The "Wheel of Life" app addresses a critical need for individuals requiring wheelchairs by providing essential accessibility information in an intuitive and user-friendly interface. With nearly 1% of the global population relying on wheelchairs for mobility, the app fills a significant gap, particularly in developing and underdeveloped regions where accessibility infrastructure is lacking. By offering features such as locating wheelchair-accessible toilets, vendors for medical equipment, repair shops, and essential services like hospitals and police stations, the app empowers users to navigate their surroundings with greater ease and confidence. Its Android platform, developed using Android Studio and JAVA, ensures widespread accessibility, leveraging technology to enhance the quality of life for wheelchair users worldwide.

Key Features:

1) Load Balancing:

Since the system will be available only the admin logs in the amount of load on server will be limited to time period of admin access.

2) Easy Accessibility:

Records can be easily accessed and store and other information respectively.

3) User Friendly:

The website/application will be giving a very user-friendly approach for all user.

4) Efficient and reliable:

Maintaining the all secured and database on the server which will be accessible according the user requirement without any maintenance cost will be a very efficient as compared to storing all the customer data on the spreadsheet or in physically in the record books.

5) Easy maintenance:

Wheel of Life is design as easy way. So, maintenance is also easy.

1.3 PROBLEM DEFINATION

Despite comprising nearly 1% of the global population, individuals who require wheelchairs for mobility encounter significant barriers to accessing essential facilities and services, particularly in developing and underdeveloped countries. The lack of proper wheelchair accessibility infrastructure exacerbates the challenges faced by wheelchair users, hindering their ability to navigate and participate fully in society. Locating wheelchair-accessible facilities such as toilets, medical equipment vendors, repair shops, hospitals, police stations, and NGOs poses a significant challenge, resulting in practical obstacles to daily activities and perpetuating social exclusion and inequality for people with disabilities.

Solution Overview: In response to these challenges, the Wheel of Life app offers a comprehensive solution to empower wheelchair users and enhance their accessibility to essential facilities and services. Leveraging location-based technology and a user-friendly interface, the app enables individuals to easily locate nearby wheelchair-accessible facilities. By providing information on accessible toilets, medical equipment vendors, repair shops, hospitals, police stations, and NGOs, the app addresses the immediate needs of wheelchair users and facilitates their navigation in the community.

1.4 SCOPE AND OBJECTIVES

SCOPE:

Individuals requiring a wheelchair for mobility have a tough time finding accessible toilets in new places. Due to this, traveling around and visiting new and unknown locations ends up becoming an intimidating and unnerving affair.

Moreover, finding access to medical help can also prove to be tough at times.

OBJECTIVES:

The Wheel of Life is an easy-to-use Android application that enables users to find wheelchair

-accessible toilets, medical stores, wheelchair vendors, etc. in and around their current location. Moreover, this application is also helpful in emergencies.Disabled individuals can use the app

to locate nearby police stations and medical services.

CHAPTER NO. 02

MODULE OVERVIEW

2.1   MODULES AND DESCRIPTION

- **User:**
  - **Splash**: User needs to allow the app to access their location in order to proceed.
  - **Dashboard:** Wheelchair, Toilets, Help.
  - **Wheelchair:**
    - User can view a list of all vendors of wheelchairs and medical equipment and wheelchair repair shops around them.
    - User can view all the shops plotted out on a map.
  - **Toilets:**
    - User can view a list of all Wheelchair accessible toilets and handicap toilets around them.
    - User will be shown all nearby handicap toilets in map view.
  - **Help:**
    - User will be shown the nearest NGOs, Hospitals, and Police stations.

  User can see all the nearby NGOs, Hospitals, and Police stations plotted out on a map.

2.2   EXISTING SYSTEM

The existing system lacks comprehensive support for individuals requiring wheelchair accessibility. In many developing and underdeveloped countries, there's a notable absence of infrastructure and resources to facilitate mobility for this demographic. As a consequence, navigating unfamiliar environments presents significant challenges, especially in locating essential facilities like accessible washrooms. Currently, there's a dearth of centralized platforms or applications specifically tailored to address the diverse needs of wheelchair users.

In the absence of dedicated solutions, individuals relying on wheelchairs face formidable obstacles in their daily lives. Locating wheelchair-accessible toilets, vendors offering medical equipment like wheelchairs, repair shops, as well as essential services such as hospitals, police stations, and NGOs, often involves tedious manual searches. This outdated approach not only consumes time and effort but also exacerbates feelings of exclusion and frustration among wheelchair users.

Moreover, the lack of a unified platform means that information regarding wheelchair accessibility is fragmented and inconsistent. This inconsistency further complicates the task of planning trips or outings, making it challenging for individuals to anticipate and address their accessibility needs in advance.

To address these shortcomings, the Wheel of Life app emerges as a timely and essential solution. By leveraging the power of technology, the app aims to empower wheelchair users by providing them with a user-friendly interface to locate essential services and facilities tailored to their needs. Through real-time geolocation services, users can effortlessly identify nearby wheelchair-accessible amenities, thereby enhancing their mobility and independence.

The development of the Wheel of Life app represents a significant step towards bridging the accessibility gap faced by wheelchair users. By centralizing vital information and leveraging modern technology, the app promises to improve the quality of life for individuals with mobility challenges, fostering a more inclusive society where everyone can participate fully and equally.

Problem with current scenario

- Under the current scenario disabled people have a tough time finding wheelchair accessible and handicap toilets.
- This often makes visiting new places an intimidating task.

Drawbacks of the existing system

- User friendliness is very less.
- There is no reliable way for disabled individuals to find a wheelchair accessible or handicap toilet near them
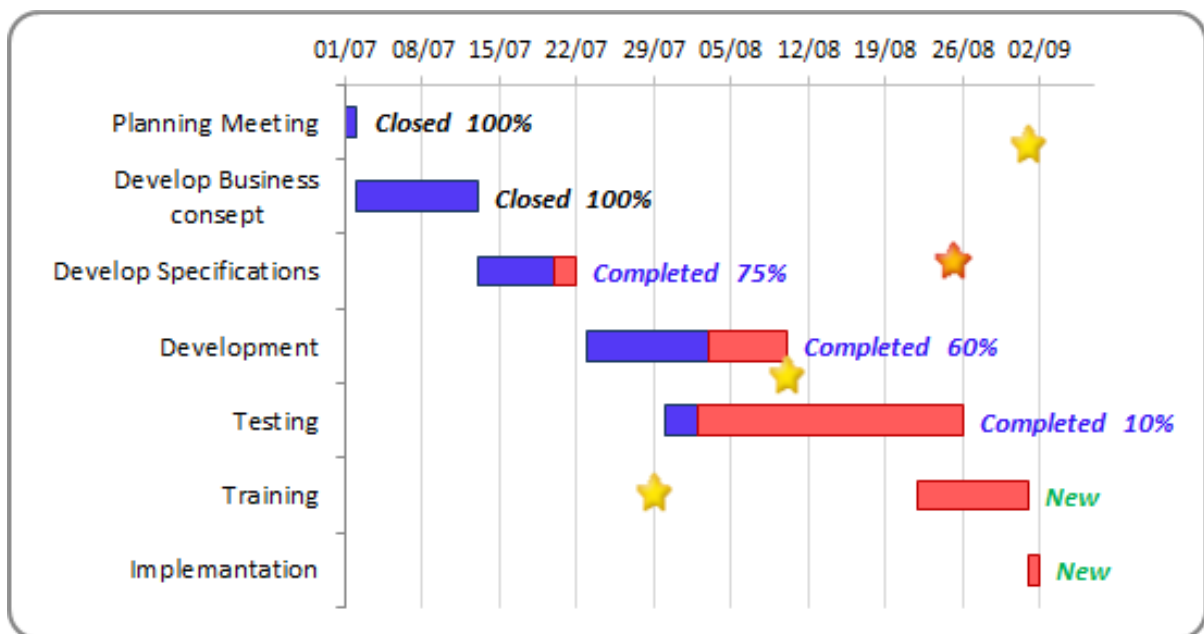
CHAPTER NO. 03

SCOPE OF PROJECT

1. **Introduction:**

Individuals requiring a wheelchair for mobility have a tough time finding accessible

toilets in new places. Due to this, traveling around and visiting new and unknown locations

ends up becoming an intimidating and unnerving affair. Moreover , finding access to

 medical help can also prove to be tough at times.

2. **Features:**

- **Accessible Toilet Locator:** The app provides a comprehensive database of wheelchair-accessible toilets, allowing users to easily find nearby facilities wherever they may be.

- **Medical Help Directory:** Users can access information about nearby hospitals, clinics, and medical facilities that are equipped to provide assistance to individuals with mobility challenges.

- **Geolocation Services:** Leveraging GPS technology, the app pinpoints the user's current location and provides tailored recommendations for accessible facilities and medical assistance in their vicinity.

- **Vendor and Repair Shop Directory:** The app includes a directory of vendors selling wheelchairs and other medical equipment, as well as repair shops specializing in Wheelchair maintenance and servicing.

- **Emergency Service Locator:** Users can quickly locate nearby police stations or emergency services, ensuring they have access to assistance when needed.

3. Gantt Chart:

01/07 08/07 15/07 22/07 29/07 05/08 12/08 19/08 26/08 02/09

Planning Meeting — Closed 100%
Develop Business consept — Closed 100%
Develop Specifications — Completed 75%
Development — Completed 60%
Testing — Completed 10%
Training — New
Implemantation — New

CHAPTER NO. 04

METHODOLOGY

4.1 PROPOSED SYSTEM

The proposed Wheel of Life app aims to revolutionize accessibility for wheelchair users worldwide. By leveraging advanced geolocation technology, the app will empower users to effortlessly locate essential facilities tailored to their needs, including wheelchair-accessible toilets, medical equipment vendors, repair shops, NGOs, hospitals, and police stations. The user-friendly interface will ensure ease of navigation, while real-time updates will ensure accuracy and reliability.

Key Features:

1. **Precise Geolocation Services:**

   - The app will utilize advanced geolocation technology to accurately pinpoint the user's current location, enabling them to easily find nearby wheelchair-accessible facilities and services.

2. **Comprehensive Database Integration:**

   - The system will integrate a comprehensive database of wheelchair-accessible amenities, including toilets, medical equipment vendors, repair shops, NGOs, hospitals, and police stations, ensuring users have access to essential resources wherever they go.

3. **Customizable Preferences:**

   - The Users will have the option to customize their preferences based on their specific needs and requirements, allowing for personalized search results and a tailored user experience.

4. **Community-Driven Updates:**

   - The app will facilitate community-driven updates, allowing users to contribute information about newly accessible locations or report any changes to existing ones, ensuring the database remains up-to-date and reliable.

5. **Customizable Preferences:**

   - The app will seamlessly integrate with popular mapping services, providing users with turn-by-turn navigation to their desired destinations and enhancing overall usability and convenience.

4.2 PROPOSED METHODOLOGY

1. **Data Acquisition:**

   - Conduct extensive research to gather comprehensive data on wheelchair-accessible facilities and services.

   - Collaborate with relevant organizations and agencies to collect accurate and up-to-date information.

   - Utilize crowd-sourcing techniques to supplement data collection efforts and gather user-generated feedback.

   -

2. **Database Development:**

   - Design and implement a robust database structure to organize and store information about wheelchair-accessible amenities.

   - Incorporate features for data validation and quality assurance to ensure the accuracy and reliability of the database.

   - Explore options for integrating existing datasets and APIs to enhance the breadth and depth of information available.

3. **Geolocation Integration:**

   - Implement front-end using modern web technologies (HTML5, CSS3, JavaScript).

   - Integrate geolocation technology to enable real-time tracking of users' locations.

   - Implement algorithms for proximity-based search functionality to provide users with relevant results based on their current location.

   - Evaluate and select mapping services or APIs for seamless integration into the application interface.

4. **User Interface Design:**

   - Design a user-friendly interface with intuitive navigation features to enhance accessibility for users with varying levels of mobility.

   - Conduct user testing and gather feedback to refine the interface design and improve overall usability.

   - Incorporate customizable settings and preferences to tailor the user experience to individual needs and preferences.

5. **Continuous Improvement:**

   - Establish processes for ongoing updates and maintenance of the application and database.

   - Solicit feedback from users and stakeholders to identify areas for improvement and new features.

   - Implement mechanisms for community engagement and contribution to ensure the sustainability and relevance of the Wheel of Life app.

4.2 SYSTEM REQUIRMENT

- **Hardware Requirement:**

  - **Laptop or PC**

    - i3 Processor Based Computer or higher
    - 1GB RAM
    - 5 GB Hard Disk

  - **Android Phone or Tablet**

    - 1.2 Quad core Processor or higher
    - 1 GB RAM

- **Software Requirement:**

  - **Laptop or PC**

    - Windows 7 or higher.
    - Java
    - Android Studio

  - **Android Phone or Tablet**

    - Android v5.0 or Higher

4.3 REQUIREMENTS GATHERING

1. **Accessibility Needs**:

   - Understanding the specific challenges faced by individuals requiring wheelchairs for mobility, such as locating accessible toilets, medical facilities, and other essential services in new or unfamiliar locations.

2. **Geolocation Functionality**:

   - Implementing geolocation features to accurately pinpoint the user's current location and provide relevant information about nearby wheelchair-accessible facilities and services

3. **Comprehensive Database**:

   - Ensuring the app's database includes up-to-date information on wheelchair-accessible toilets, medical equipment vendors, repair shops, NGOs, hospitals, and police stations in various regions, with a focus on developing and underdeveloped countries where accessibility may be limited.

4. **User-Friendly Interface**:

   - Designing an intuitive and easy-to-navigate interface that caters to individuals with disabilities, allowing them to access the app's features with minimal effort and confusion.
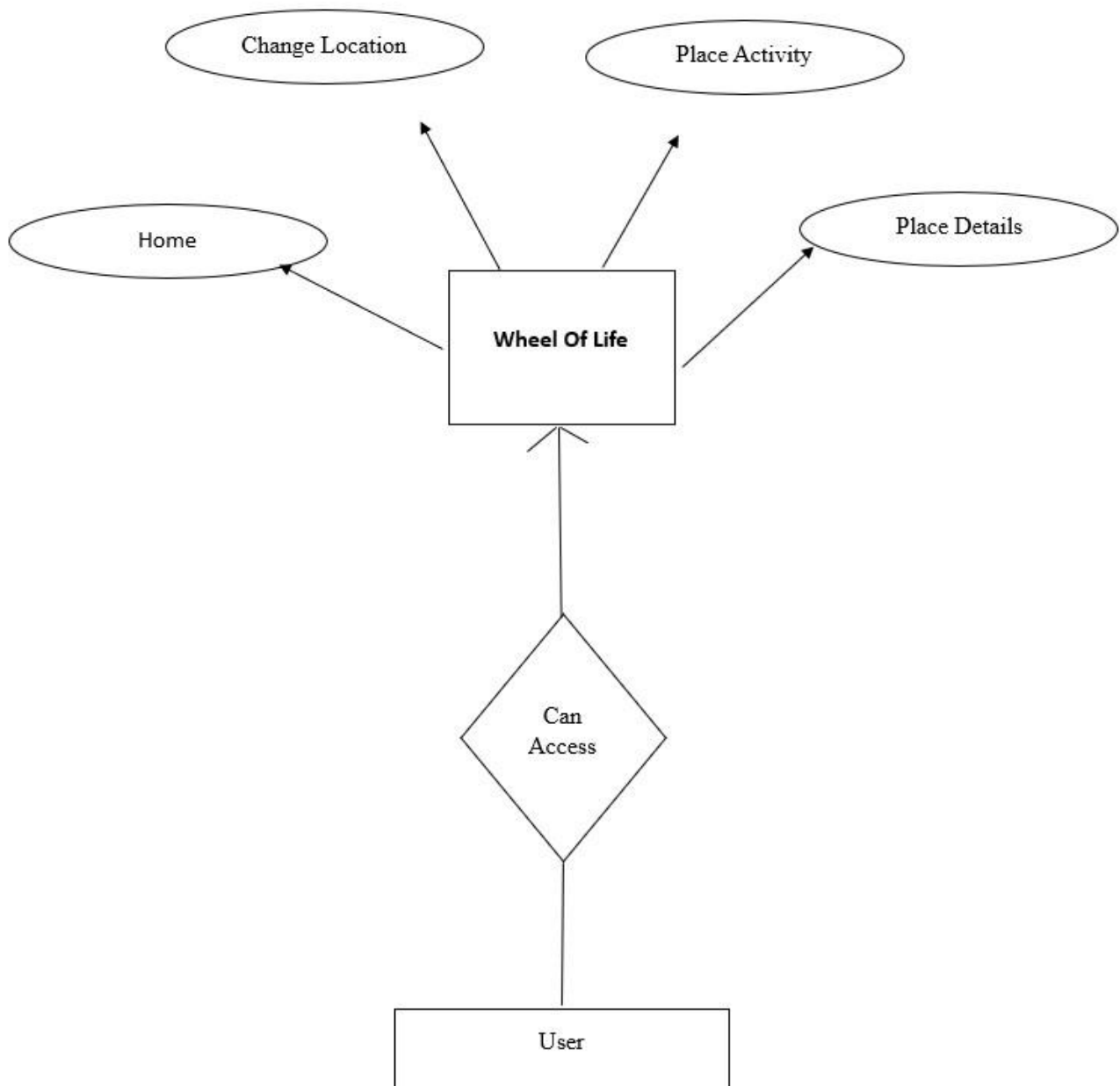
5. **Vendor and NGO Collaboration:**

   - Ensuring compatibility with Android devices, given that the app is developed using Android Studio with JAVA as the programming language, and potentially exploring future expansion to other platforms based on user feedback and demand.
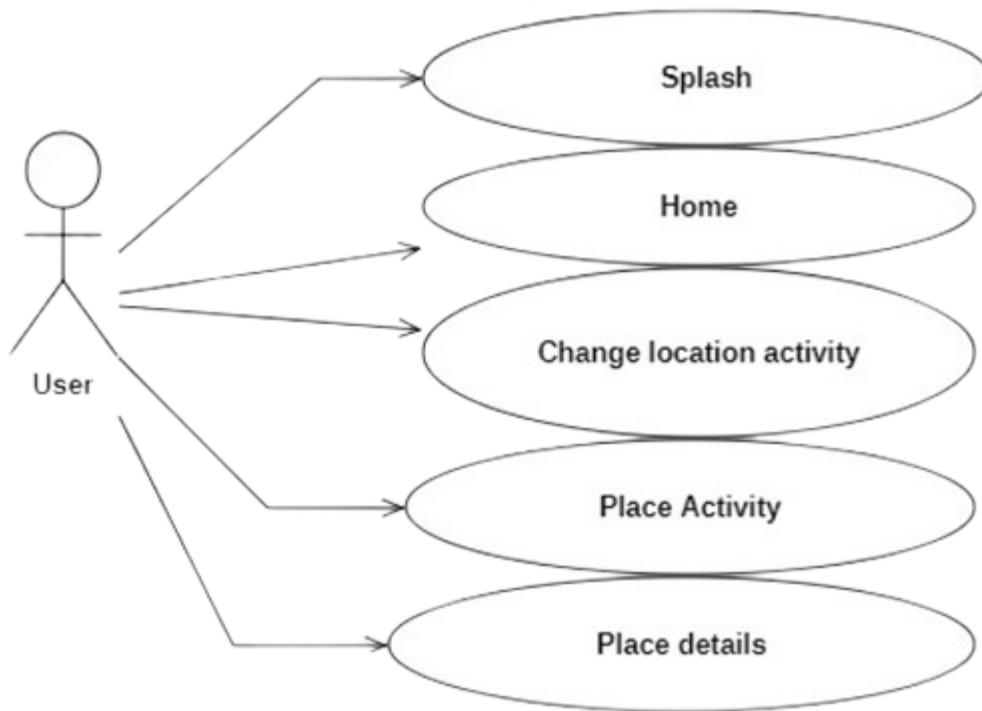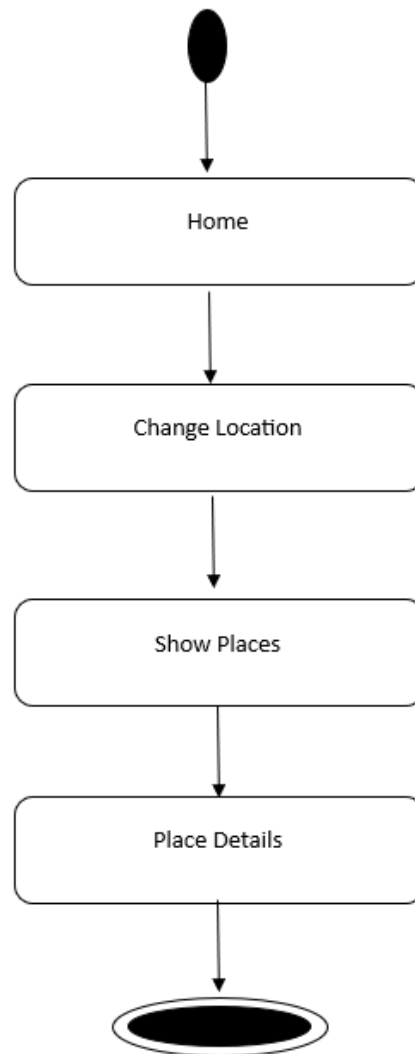
CHAPTER NO. 05

DETAILS OF DESIGN, WORKING & PROCESSES

5.1.1 DIAGRAM /DESIGN OF PROJECT

5.1.2 USE CASE DIAGRAM

5.1.3 Flow Chart

```
            ●
            │
            ▼
    ┌───────────────┐
    │     Home      │
    └───────────────┘
            │
            ▼
    ┌───────────────┐
    │ Change Location│
    └───────────────┘
            │
            ▼
    ┌───────────────┐
    │  Show Places  │
    └───────────────┘
            │
            ▼
    ┌───────────────┐
    │ Place Details │
    └───────────────┘
            │
            ▼
          ◉
```
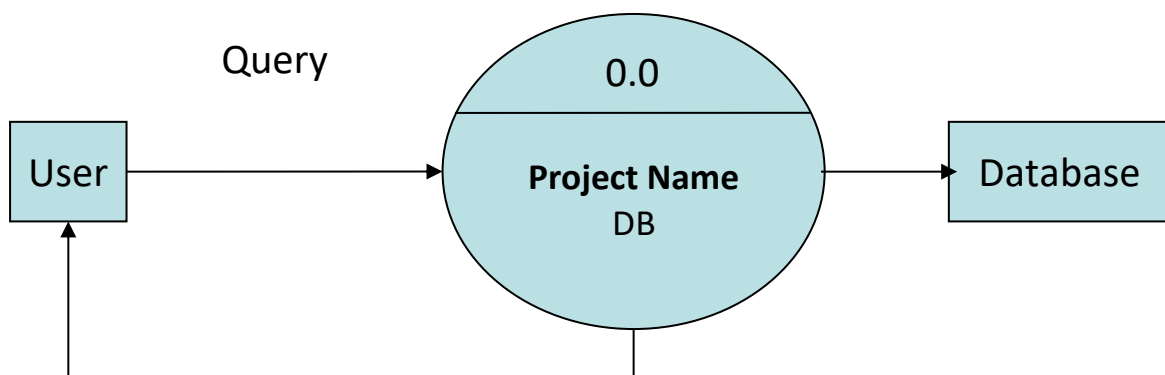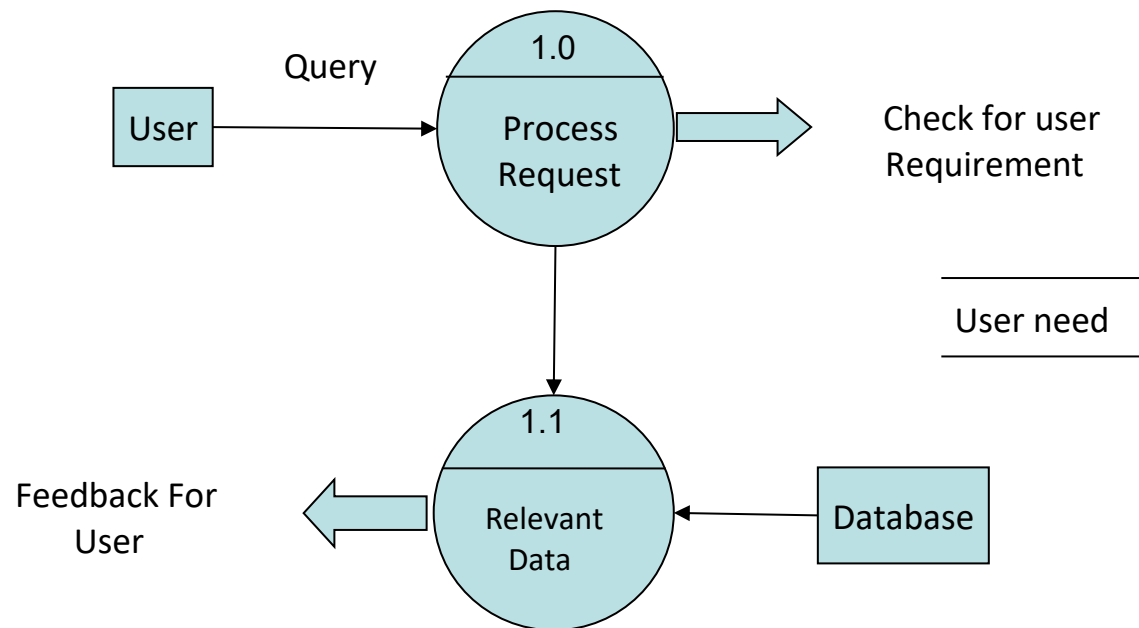
5.2 DATA FLOW DIAGRAM(DFD'S)

A data flow diagram is graphical tool used to describe and analyze movement of data through a system. These are the central tool and the basis from which the other components are developed. The transformation of data from input to output, through processed, may be described logically and independently of physical components associated with the system. These are known as the logical data flow diagrams. The physical data flow diagrams show the actual implements and movement of data between people, departments and workstations.

1) A Data Flow has only one direction of flow between symbols. It may flow in both directions between a process and a data store to show a read before an update. The later it usually indicated however by two separate arrows since these happen at different type.

2) A join in DFD means that exactly the same data comes from any of two or more different processes data store or sink to a common location.

3) A data flow cannot go directly back to the same process it leads. There must be at least one other process that handles the data flow produce some other data flow returns the original data into the beginning process.

4) A Data flow to a data store means update (delete or change).

Data Flow Diagrams (DFD's)

DATABASE DETAIL

User → Query → 1.0 Process Request → Check for user Requirement

User need

1.1 Relevant Data → Feedback For User

Database → 1.1 Relevant Data

LEVEL 1 DFD

5.3 SYSTEM FEASIBILITY

1. Technical Feasibility:

   In this step, we verify whether the proposed systems are technically feasible
   or not. i.e., all the technologies required to develop the system are
   available readily or not.
   Technical Feasibility determines whether the organization has the
   technology and skills necessary to carry out the project and how this should
   be obtained. The system can be feasible because of the following grounds:

   - All necessary technology exists to develop the system.
   - This system is too flexible and it can be expanded further.
   - This system can give guarantees of accuracy, ease of use, reliability
     and the data security.
   - This system can give instant response to inquire.
     Our project is technically feasible because, all the technology needed
   for our project is readily available

2. Economic Feasibility:

Economically, this project is completely feasible because it requires no
extra financial investment and with respect to time, it's completely possible to
complete this project in 6 months.

In this step, we verify which proposal is more economical. We compare the financial benefits of the new system with the investment. The new system is economically feasible only when the financial benefits are more than the investments and expenditure. Economic Feasibility determines whether the project goal can be within the resource limits allocated to it or not. It must determine whether it is worthwhile to process with the entire project or whether the benefits obtained from the new system are not worth the costs. Financial benefits must be equal or exceed the costs. In this issue, we should consider:

➢ The cost to conduct a full system investigation.

➢ The cost of h/w and s/w for the class of application being considered.

➢ The development tool.

➢ The cost of maintenance etc...

3. Operational Feasibility:

In this step, we verify different operational factors of the proposed systems like man-power, time etc., whichever solution uses less operational resources, is the best operationally feasible solution. The solution should also be operationally possible to implement. Operational Feasibility determines if the proposed system satisfied user objectives could be fitted into the current system operation.

➢ The methods of processing and presentation are completely accepted by

the clients since they can meet all user requirements.

➢ The clients have been involved in the planning and development of the

system.

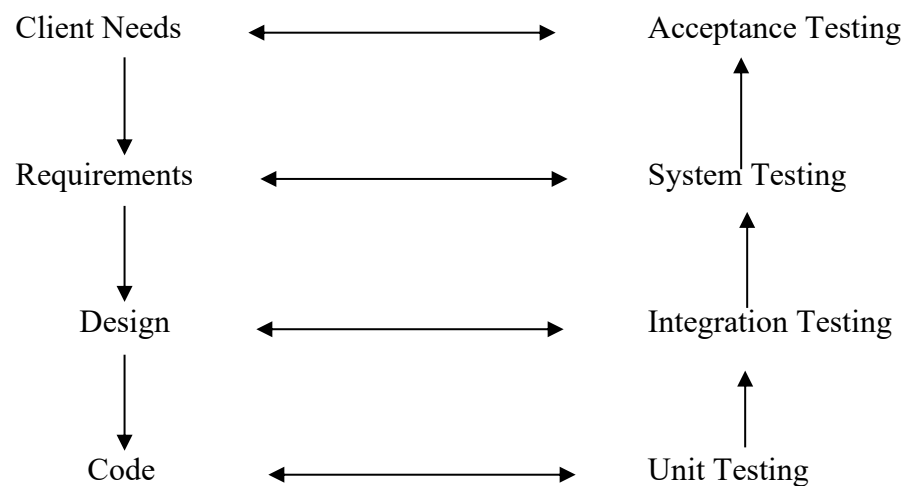➢ The proposed system will not cause any problem under any circumstances.

Our project is operationally feasible because the time requirements and personal

Requirements are satisfied .We are a team of four members and we worked on

This project for three working months.

5.4TESTING

As the project is on bit large scale, we always need testing to make it successful. If each components work properly in all respect and gives desired output for all kind of inputs then project is said to be successful. So the conclusion is-to make the project successful, it needs to be tested.

- **Levels of Testing**

In order to uncover the errors, present in different phases we have the concept of levels of testing. The basic levels of testing are:

```
Client Needs    <------------>    Acceptance Testing
     |                                   ^
     v                                   |
Requirements    <------------>    System Testing
     |                                   ^
     v                                   |
  Design        <------------>    Integration Testing
     |                                   ^
     v                                   |
   Code         <------------>    Unit Testing
```

A series of testing is done for the proposed system before the system is ready for the user acceptance testing.

The steps involved in Testing are:

- **Unit Testing**

Unit testing focuses verification efforts on the smallest unit of the software design, the module. This is also known as "Module Testing". The modules are tested separately. This testing carried out during programming stage itself. In this testing each module is found to be working satisfactorily as regards to the expected output from the module.

- **Integration Testing**

Data can be grossed across an interface; one module can have adverse efforts on another. Integration testing is systematic testing for construction the program structure while at the same time conducting tests to uncover errors associated with in the interface. The objective is to take unit tested modules and build a program structure. All the modules are combined and tested as a whole.

- **System testing**

System testing is the stage of implementation that is aimed at ensuring that the system works accurately and efficiently for live operation commences. Testing is vital to the success of the system. System testing makes a logical assumption that if all the parts of the system are correct, then goal will be successfully achieved.

- **Validation Testing**

At the conclusion of integration testing software is completely assembled as a package, interfacing errors have been uncovered and corrected and a final series of software tests begins, validation test begins. Validation test can be defined in many ways.

- **Output Testing**

After performing validation testing, the next step is output testing of the proposed system since no system could be useful if it does not produce the required output in the specified format. Asking the users about the format required by them tests the outputs generated by the system under consideration.
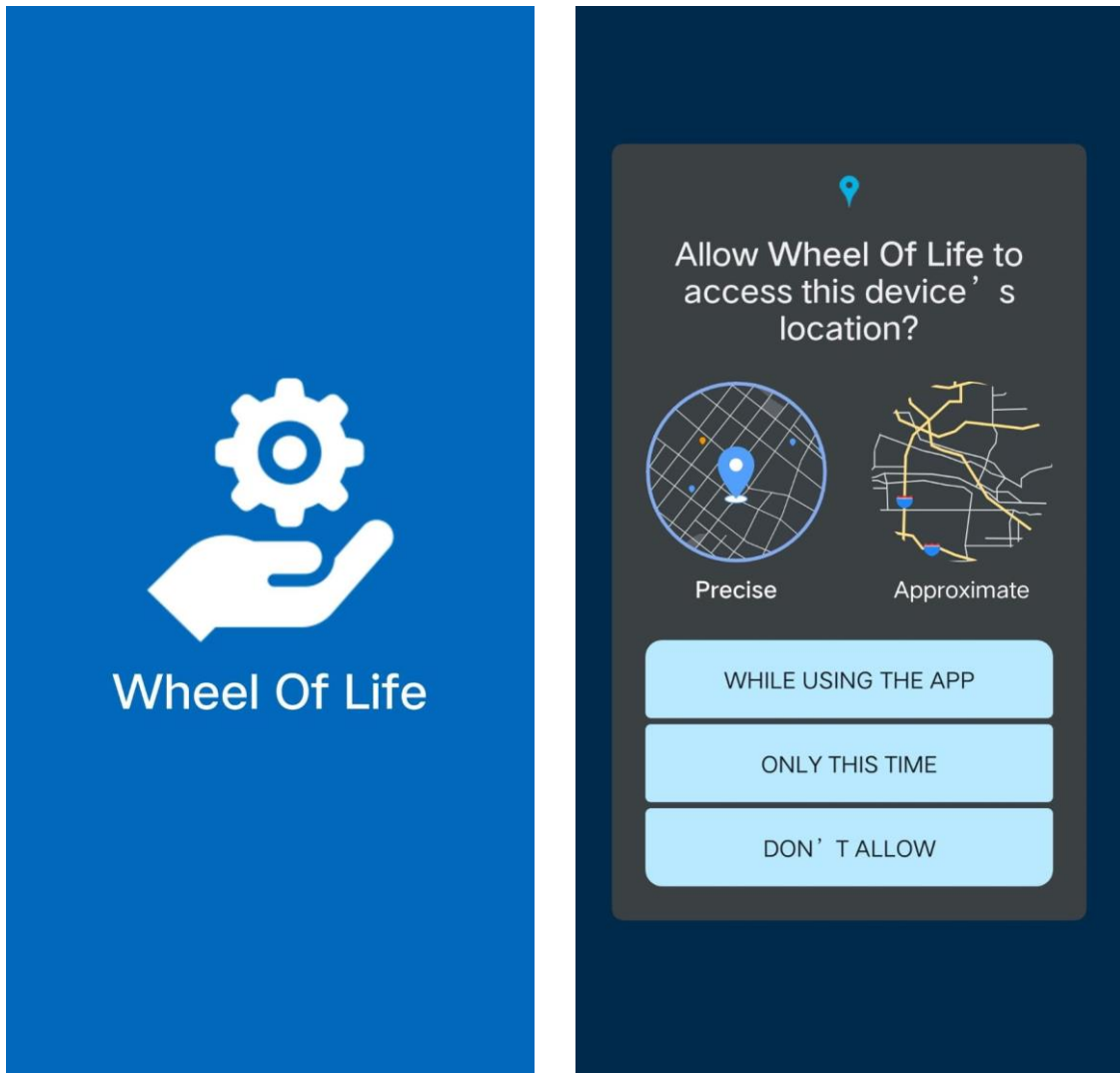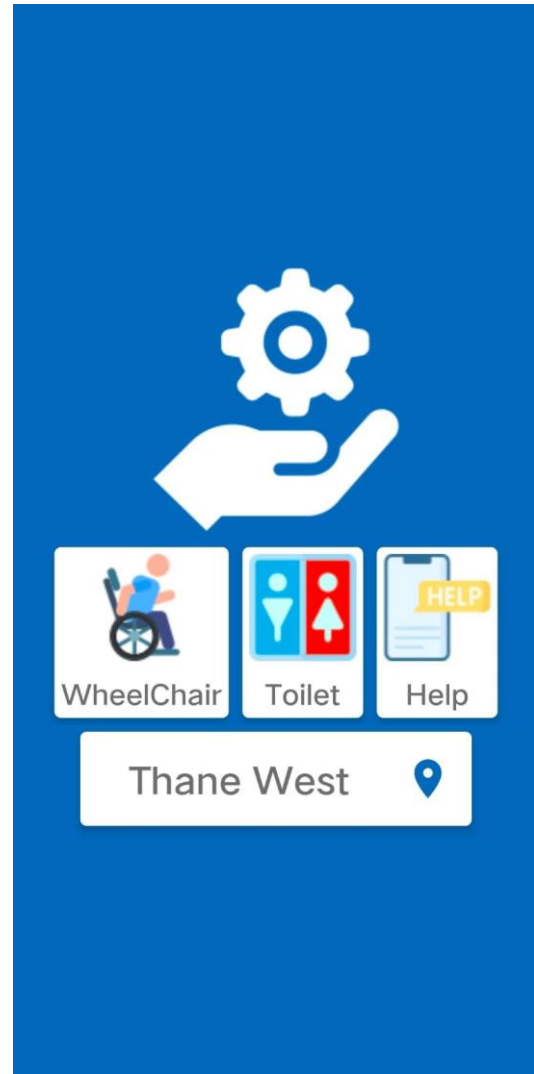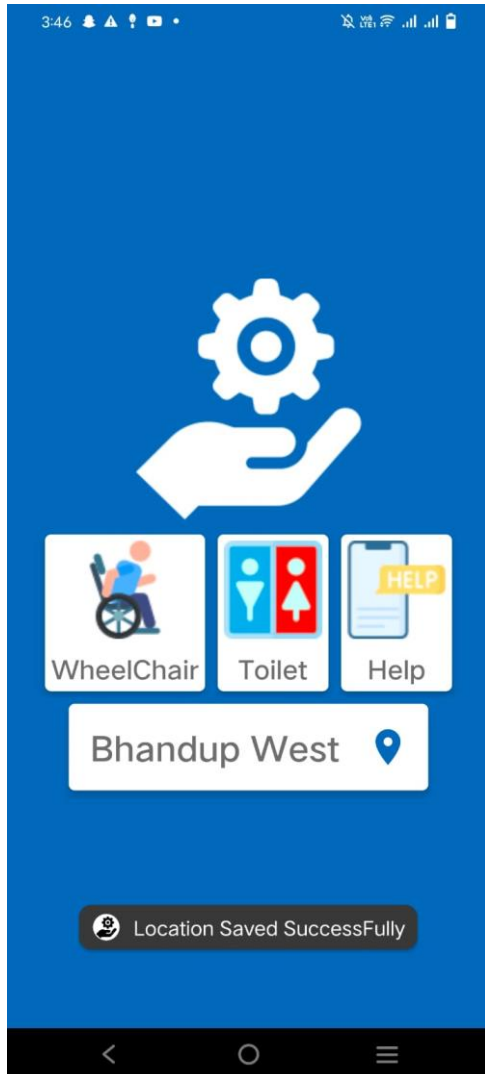
- **User Acceptance Testing**

User acceptance of a system is the key factor of the success of any system. The system under study is tested for the user acceptance by constantly keeping in touch with the prospective system users at the time of developing and making changes wherever required.

CHAPTER NO. 06

RESULT AND APPLICATION SCREEN SHOT

6.1 SCREEN SHOTS

Wheel Of Life ⋮

Vkumar Enterprises (Hospital Equipments) & Office Chair repairing

Distance: 0.99 km

Bafna Surgicals

Distance: 1.69 km

Health On Rent

Distance: 1.69 km

furniture payroll

Distance: 1.72 km

Health On Rent

Distance: 2.69 km

Maxtech Healthcare Pvt Ltd: Your Solution for Renting

Place Details

Vkumar Enterprises (Hospital Equipments) & Office Chair repairing

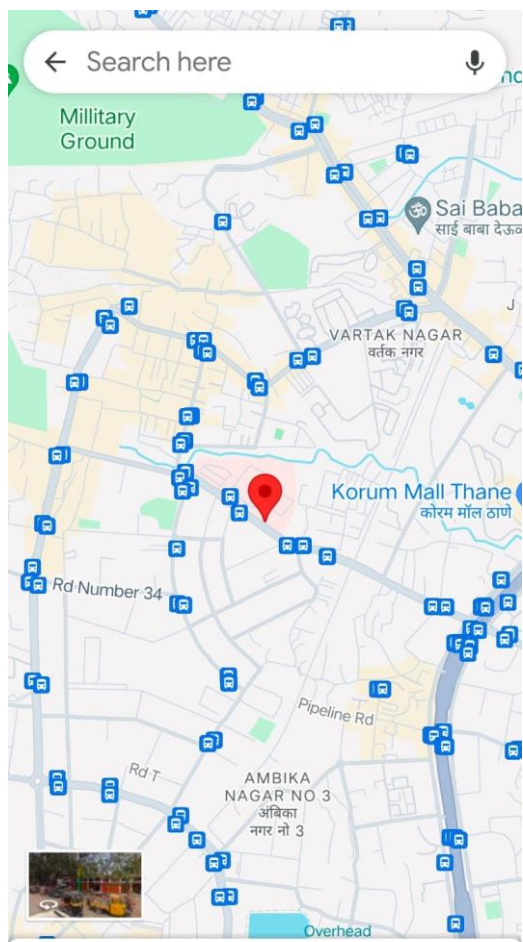|	
BUSINESS STATUS:	OPERATIONAL
ADDRESS:	Prasant cornar faktari, Shop No. 38, Road No. 33, near ESIC Hospital Road, Chaitraban Society, Wagle Industrial Estate, Thane West, Thane, Maharashtra 400604, India
STATUS:	Opened Now
WORKING HOURS:	Sunday: 10:00 AM – 10:00 PM

Place Details

SBM Toilet

BUSINESS STATUS:	OPERATIONAL
ADDRESS:	Near Laxmi Chawl, Hanuman Nagar, Wagle Industrial Estate West, Hanuman Nagar, Wagle Industrial Estate, Thane West, Thane, Maharashtra 400601, India
STATUS:	Opened Now
WORKING HOURS:	Sunday: Open 24 hours

NAVIGATE

← Search here 🎤

Army Ground

Millitary Ground
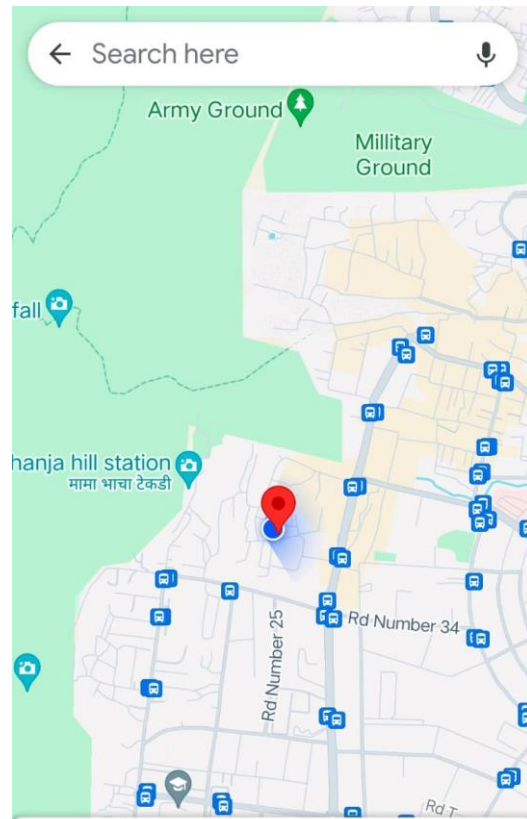
SBM Toilet

एसबीएम टॉयलेट

Near Laxmi Chawl, Hanuman Nagar, Wagle Indu...

Public bathroom · 🚶 3 min

Open 24 hours

◆ Directions   ▲ Start   🔖 Save   <

Wheel Of Life   ⋮

Saikrupa Hospital

Distance: 0.21 km

Lokmanya Hospital & ICU

Distance: 0.52 km

Sai Hospital

Distance: 0.61 km

Tilak Nagar Police Station

Distance: 0.63 km

All Star Hospital Multispeciality

Distance: 0.71 km

Lokmanya Nagar Police Station

Place Details

Saikrupa Hospital

H

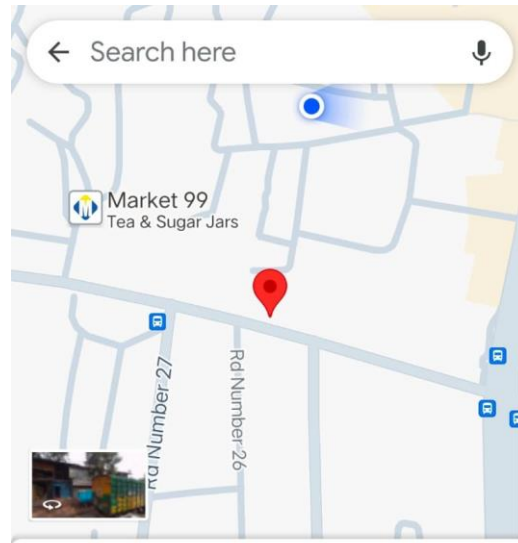|	
BUSINESS STATUS:	OPERATIONAL
ADDRESS:	326, Rd Number 34, near Wagle Depot, Hanuman Nagar, Wagle Industrial Estate, Thane West, Thane, Maharashtra 400604, India

★★★★⯪

NAVIGATE

CHAPTER NO. 07

CONCLUSION & FUTURE SCOPE

7.1 CONCLUSION

In conclusion, the development of the Wheel of Life app represents a significant step towards addressing the pervasive challenges faced by wheelchair users in accessing essential facilities and services. With nearly 1% of the global population requiring a wheelchair for mobility, the lack of proper accessibility, particularly in developing and underdeveloped countries, remains a pressing issue. By leveraging the power of technology and user-centric design, the Wheel of Life app offers a comprehensive solution to assist disabled individuals in navigating their surroundings with greater ease and confidence

Through its user-friendly interface, precise geolocation services, and extensive database of wheelchair-accessible amenities, the Wheel of Life app empowers users to locate essential facilities such as toilets, medical equipment vendors, repair shops, hospitals, NGOs, and police stations with ease. Moreover, its integration with mapping services ensures seamless navigation to desired destinations, enhancing overall mobility and independence. As the app continues to evolve and incorporate feedback from users and stakeholders, it holds the promise of fostering a more inclusive society where wheelchair users can participate fully and equally in all aspects of life

7.2 FUTURE SCOPE

1. **Expansion to Additional Regions:** Continuously update and expand the library of programming language PDFs and other learning materials. Include not only beginner-level resources but also intermediate and advanced content to cater to learners at different stages.

2. **Integration of Advanced:** Introduce interactive learning modules, quizzes, coding challenges, and exercises to reinforce learning and provide hands-on practice within the app. These interactive elements can significantly enhance user engagement and retention.

3. **Enhanced Community Engagement:** Collaborate with popular online learning platforms or MOOCs (Massive Open Online Courses) to integrate their courses and resources into the Learnify app. This partnership can broaden the range of available learning materials and provide users with access to certified courses and expert instructors.

4. **Collaboration with Government and NGOs:** Expand the chatting section into a robust community platform where users can connect with fellow learners, ask questions, share insights, and collaborate on projects. Implement features like forums, discussion boards, and live chat support to foster a vibrant learning community.

5. **Accessibility Certification Program:** Introduce real-time collaborative coding features, allowing users to work together on coding projects or assignments within the app. Integration with version control systems like Git can enable seamless collaboration and code sharing among users.

6. **Research and Development:** Implement machine learning algorithms to analyze user behavior, preferences, and learning patterns. Based on this analysis, offer personalized learning recommendations, suggested study paths, and tailored content to help users achieve their learning goals more effectively.

CHAPTER NO. 08

REFERENCES & BIBLIOGRAPHY

8.1 REFERENCES

1. Global statistics on wheelchair usage:

   - World Health Organization (WHO). (2011). World Report on Disability. Retrieved from https://www.who.int/disabilities/world_report/2011/report.pdf

2. Lack of wheelchair accessibility in developing countries):

   - World Health Organization (WHO). (2019). Wheelchair service provision in countries with fewer resources: WHO Guidelines. Retrieved from https://www.who.int/publications/i/item/9789241550516

3. Challenges in finding accessible facilities:

- Breen, L., Hassan, M. A., & McGrath, J. (2018). Identifying barriers to the accessibility of toilets for people with disabilities. Disability and Rehabilitation: Assistive Technology 13(8),753-761. https://doi.org/10.1080/17483107.2018.1466100Chatting Section Implementation:

4. Features of the Wheel of Life app:

- Islam, M. M., & Uddin, M. Z. (2017). An Android Based Smart Wheelchair with Assistive Features for Physically Disabled Persons. In 2017 International Conference on Electrical, Computer and Communication Engineering (ECCE) (pp. 256-261). IEEE. https://doi.org/10.1109/ECACE.2017.8161234

8.2 BIBLIOGRAPHY

1. World Health Organization (WHO). (2011). " World Report on Disability." Retrieved from
   https://www.who.int/disabilities/world_report/2011/report.pdf

2. World Health Organization (WHO). (2019). " Wheelchair service provision in countries with fewer resources WHO Guidelines." Retrieved from https://www.who.int/publications/i/item/9789241550516.

3. Breen, L., Hassan, M. A., & McGrath, J. (2018). " Identifying barriers to the accessibility of toilets for people with disabilities."

   Disability and Rehabilitation: Assistive Technology, 13(8), 753-761. https://doi.org/10.1080/17483107.2018.1466100.

4. Islam, M. M., & Uddin, M. Z. (2017)." An Android Based Smart Wheelchair with Assistive Features for Physically Disabled Persons."

   In 2017 International Conference on Electrical, Computer and Communication Engineering (ECCE) (pp. 256-261). IEEE. https://doi.org/10.1109/ECACE.2017.8161234

5. Deitel, P., & Deitel, H. (2017). " Android 6 for programmers"an app-driven approach.

Appendix-B

PROGRESSIVE ASSESSMENT(PA) OF CAPSTONE PROJECT-EXECUTION AND REPORT WRITING

Evaluation Sheet (ESE) for Internal Assessment

Name of Student: Farana N. Shaikh   **Enrolment No:** 2201440225

Name of Program: Information Technology   **Semester:** 6th

Course Title: Capstone Project: Execution and Report Writing **Code:** 22060.

Title of the Capstone Project: Wheelchair Guidance & Assistance For The Disabled.

A. POs addressed by the Capstone Project (Mention only those predominant POs)
   a) …………………………………………………………………………….
   b) ……………………………………………………………………………..
   c) …………………………………………………………………..................
   d) ……………………………………………………………………………..

B. COs addressed by the Capstone Project (Mention only those predominant POs)
   a) Implement the planned activity individually and/or as team.
   b) Take appropriate decisions based on collected and analysed information.
   c) Assess the impact of the project on society.
   d) Communicate effectively and confidently as a member and leader of team.

C. Other learning outcomes achieved through this project
   1. Unit Outcomes (Cognitive Domain)
   a)   ……………………………………………………………………..
   b)   ……………………………………………………………………..
   c)   ……………………………………………………………………..
   d)   ……………………………………………………………………..
   2. Practical Outcomes (in Psychomotor Domain)
   a)   ……………………………………………………………………..
   b)   ……………………………………………………………………..
   c)   ……………………………………………………………………..
   d)   ……………………………………………………………………..

   3. Affective Domain Outcomes
   a)   ……………………………………………………………………..
   b)   ……………………………………………………………………..
   c)   ……………………………………………………………………..
   d)   ……………………………………………………………………..

PROGRESSIVE ASSESSMENT PA Sheet			
Sr. No.	Criteria	Max Marks	Marks Obtained
1	Project Proposal/Identification	10	
2	Punctuality and overall contribution		
3	Project Diary		
4	Execution of Plan during sixth semester	20	
5	Project Report including documentation	15	
6	Presentation	05	
	Total	50	

Name & Signature of Project Guide: -

Prof. Mahesh Pimpalkar …………………………………...

Appendix B

Suggested Rubric for Capstone Project – Execution and Report Writing

Sr . No.	Characteristic to be assessed	Poor	Average	Good	Excellent
1	Problem/Task Identification (Project Title)				
2	Literature Survey/Industrial Survey				
3	Project proposal				
4	Project Diary				
5	Final Report Preparation				
6	Presentation				
'7	Defense				