

Chapter: 1

Introduction

1.1 Introduction

QUICK FIX SERVICE

Team

1. Vachhani Kruti- Pursuing Bachelor of Engineering in Computer
2. Gajjar Devisha- Pursuing Bachelor of Engineering in Computer
3. Koradia Yash- Pursuing Bachelor of Engineering in Computer

According to the knowledge of team members as well as the guidance provided by the mentors, Design engineering is not just the subject but the to think out of the box, identify the fundamentals along with broadening the view and recognize the real-world problem and turning it into reality in order to solve the problem. Selecting domain is process of skill to understand, interest to dive in and the career to build in. Building a project will let student explore the details and drive the journey in the basis of interests and technology used.

Guide

Prof. Amit Vyas– Assistant Professor at VVP Engineering College, has completed his Bachelor and Master of Computer Engineering and has experience of more than 6 years in the field of his specialization. His area of specialization is in Analysis and Design of Algorithms, Computer organization & Architecture, Database Management System.

1.2 Purpose of Project

This Project is mainly focusing on finding various service provider on same platform and providing job to service provider. Intension of this project is to solve problem face by people on same day as soon as possible. And service provider gets regular work.

1.3 Technology

Web Development Frameworks:

- **HTML (Hypertext Markup Language):** The backbone of web content, used to structure the website's content.
- **CSS (Cascading Style Sheets):** Used for styling and formatting web pages.
- **JavaScript:** Enables interactivity and dynamic features on websites.

Front-End Development:

- **Responsive Design:** Technology like media queries ensures websites display properly on various devices and screen sizes.
- **Frameworks and Libraries:** Popular ones include React and Angular for building dynamic web applications.
- **AJAX (Asynchronous JavaScript and XML):** Allows data to be fetched from a server without a full page reload.

Back-End Development:

- **Server-Side Scripting:** Using technologies like PHP or Node.js to process requests and manage data on the server.
- **Databases:** Using systems like Mongo DB, and Firebase for data storage.
- **APIs (Application Programming Interfaces):** Used for communication between the front-end and back-end components.

1.4 Reason for selecting domain

Quick Fix Service was chosen to address the common problem of people having to physically visit or call service providers like electricians, plumbers, and technicians, often resulting in delays and limited choices. This project offers a solution by providing a website where users can access multiple service providers, enabling them to connect with those available on the same day for immediate problem resolution. This saves time and allows users to compare and choose service providers offering competitive rates, ultimately saving them money. Additionally, for those unfamiliar with local service providers, the website provides a convenient way to discover and book professionals. Service providers can also benefit from increased visibility and regular work opportunities by registering on the website.

1.5 Importance of domain

Quick Fix Service it play important role in life of people and service provider. It tries to help people to find service provider of their problem and various service provider are available so people can select as per their problem. And it provides regular work to service provider also.

1.6 Summary Of Learning From Design Thinking

Design Thinking is a human centered approach to innovation that draws from the designer's toolkit to integrate the need of people, the possibilities of technology and the requirement for business success.

Design thinking's user-centric approach requires you to deeply understand customers' motivations, fears, dreams for the future, daily habits, and pain points. Developing empathy for the people who use your product allows you to innovate for their actual needs rather than what you think they need.

Design thinking is a non-linear, iterative process that teams use to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test.

Design Thinking is part of the broader project-based learning educational model. It uses a creative, systematic approach to teach problem-solving. Students' progress through the stages of Discovery, Ideation, Experimentation, and Evolution in search of innovative solutions to vexing problems.

A skill allows a designer to align what people want with what can be done and produce a viable business strategy that create customer value and market opportunity.

1.7 Summary Of Prior Art Research Paper

1.7.1

The profuse use of Mobile Applications has made them a part and parcel of our lives, be it for personal use, corporate based task or entertainment. "Domestic Android Application for Home Services", is a Corporate based mobile application for android users that brings together the client and service providers and connects them using the GPS (Global Positioning System). Clients request for the home services and based on the location by fetching the latitude and longitude of the client, the nearest service provider is allotted to serve the client's needs. By enhancing the existing system "Facility Kart" application which does not implement GPS into its application, this application has a wide scope for integrating maps to allow drag and drop to another location, and make this application available for other mobile operating systems other than android.

https://www.researchgate.net/publication/306127943_Domestic_Android_Application_for_Home_Services

1.7.2

Dealing with household services like plumbing, pest control, carpentry, electricity, etc. is major problem in the urban areas where people are busy in their daily activities. It is also difficult because of non-availability of service-providers around a certain region/ area or locality. So, in such a situation developing an Android App is very useful which can provide all the basic household services at fingertip. As we all know, how apps have changed our lives in all aspects. So, taking this into consideration, an app is developed which will provide all the basic household services like plumbing, carpentry, electricity, etc., which will help the users in all the aspects. This app is developed using different programming languages like Java, C, etc. and using different approaches. In this application, any user after creating his profile can look up for any type of household services. The user gets a list view of all the service providers of that particular service. Also, the user can apply filter to the list so that he/she gets a list of service providers around that particular region/ area. The user can make online payments through this app only. It is fully secure. After completion of the job, user can also give feedback for the service. The service providers get jobs by this app, so they get employed also. This app is very useful as it provides all the services within this app only. The app is user-friendly and provides a safer environment for both the customers and service providers.

https://ijirt.org/master/publishedpaper/IJIRT151595_PAPER.pdf

1.7.3

Home appliances are electrical/mechanical machines which accomplish some household functions, such as cooking or cleaning. The maintenance and repair of these kinds of products. Brown goods usually require high technical knowledge and skills (which get more complex with time, such as going from a soldering iron to a hot-air soldering station), while white goods may need more practical skills and "brute force" to manipulate the devices and heavy tools required to repair them. Today in digital world which makes user easy to get services online on single click. The online platform serves both the buyers and sellers community by establishing effective communication. To design and develop a system that provides variety of services like plumbers, movers and packers, repair persons services at your doorstep in just one click. A generic platform providing two way communications between service provider and service receiver can eliminate the exhausting efforts of searching the suitable service provider and also ensures the intended job for the service provider. A feedback based rating system can improve the skills of any service provider and service receiver can eventually get better service. To provide real time tracking of technician based on geo-location to provide faster service.

<https://www.ijedr.org/papers/IJEDR2009067.pdf>

1.7.4

In present scenario, people are buried up in a heavy work culture, as everyone is engaged with busy schedules, and hectic tasks which make them deviate from family life. If any issues encounter unexpectedly, it distracts them and makes them choose over the work they have to accomplish primarily. It is important to manage both professional and family life. In such circumstances, every one of us would have fantasized about a kind of house which doesn't have any leaks in pipes, if it doesn't have any mess in fixing a furniture and a kind of house which never face any maintenance issues and every one of us have thought that a life would be much better if no point of issue arises in getting a service at your door step and if there is no mess in bargaining a labor for home service. In such situation's E-Commerce plays a vital role in today's life as it has so many advantages in our life because it makes convenient in daily life of the people [1]. So, giving a thought to that aspect of life is to design and develop a system that provides many services at your doorstep in just one click. A System that provides variety of services like plumbers, movers and packers, repair persons, cleaners, electricians, painters, taxi service laundry and many more. To make it comfortable for all the users our system also provides a mobile environment which offers ease in accessing our services. A very simple process is carried out to book a service(s), and our system is specialized with providing a confirmation email about the selected service. People can choose the particularity of service required by uploading the image of desired specification. System is versatile as service can be booked from everywhere to anywhere you desire.

<https://www.ijert.org/research/an-online-system-for-household-services-IJERTCONV6IS13012.pdf>

1.7.5

This project is focused on how on-demand apps have disrupted majority of traditional industries. From the way we travel, eat, shop, and even date, all has undergone a tremendous change. So, why not our household chores and errands? After all we all need an Irona in our lives who can complete our household chores and run our errands in a jiffy. Before we understand the nitty gritty of on-demand home services apps, let us start from the basic at what exact services that it provides. As the name suggests it serves as a platform where you can hire professionals for all your household chores at your fingertips. Like all other on-Demands it is inbuilt with all the essential functionality. Got a leakage issue at home, hire a plumber near your locality who will fix it in no time. Got issues with your AC, call an air conditioning expert who will fix your AC in just a matter of few minutes. Similarly, these apps help in fixing problems of carpentry, house cleanliness, home appliances, and all other household problems. The home service marketing niche in India is still in the nascent stage. With Indian cities seeing a significant growth.

<https://www.irjet.net/archives/V7/i5/IRJET-V7I520.pdf>

Chapter: 2

Design Canvas

2.1 AEIOU Canvas



Fig 2.1.1: AEIOU canvas

- AEIOU stands for 5 elements to be coded: Activity, Environment, Interaction, Object, and User. Activities are goal-directed sets of actions—paths towards things people want to accomplish. AEIOU is a method that provides ethnographic researchers with a framework for recording and classifying observations and information about their subject's Activities, Environments, Interactions, Objects, and Users.
- The AEIOU stands for,
 - A- Activities
 - E- Environment
 - I- Interaction
 - O- Objects
 - U- Users

2.1.1 Activities of Users

- These are goal directed set of actions path towards people thinks people want to accomplish. What are modes people work in and the specific activities and processes they go through.
- In general impression we describe that what is going on site.

- People engaged in some activities are as mentioned below:
 1. Electrician solves issue related to wire and switchboard.
 2. Find service provider
 3. Mason solves issue like crack in mortar.
 4. Cook prepares food.
 5. Fix an appointment.
 6. Gardener maintain garden.
 7. Carpenter solves issue related to furniture.
 8. Technician solves issue related to electrical appliances.

2.1.2 Environment

- Environments include the entire arena where activities take place.
- In summary of ENVIRONMENT, We describe general impression, elements and features.
 1. Schools / College / university
 2. Offices
 3. Hospitals
 4. Bus station / Airport / Railway station
 5. Shops / Malls
 6. Industry
 7. House
 8. Temple
 9. Banks
 10. Hotels / Restaurant

2.1.3 Interactions

- Interactions are between a person and someone or something else; they are the building blocks of activities.
- In summary of INTERACTION, We describe interaction that how people should interact with each other. We describe general impression and elements.
 1. Manager / housemaker/ shop keeper / Government officer to Service provider
 2. Service provider to Service seeker

2.1.4 Objects

- Objects are building blocks of the environment.
- What are objects and devices people have in their environments and how they relate to their activities.
- In summary of OBJECT, we describe object which is included are:
 1. Electrical instrument
 2. Water pipeline
 3. Electrical appliances
 4. Furniture
 5. Food
 6. Gas pipeline

2.1.5 Users

- Users are people whose behaviors, preferences and needs are being observed.
- In summary of USERS, we describe general impression and elements as below:
 1. Servants
 2. Manager
 3. Homemaker
 4. Shopkeeper
 5. Carpenter
 6. Plumber
 7. Gardner
 8. Washerman
 9. Electrician
 10. Painter

2.2 Mind Mapping

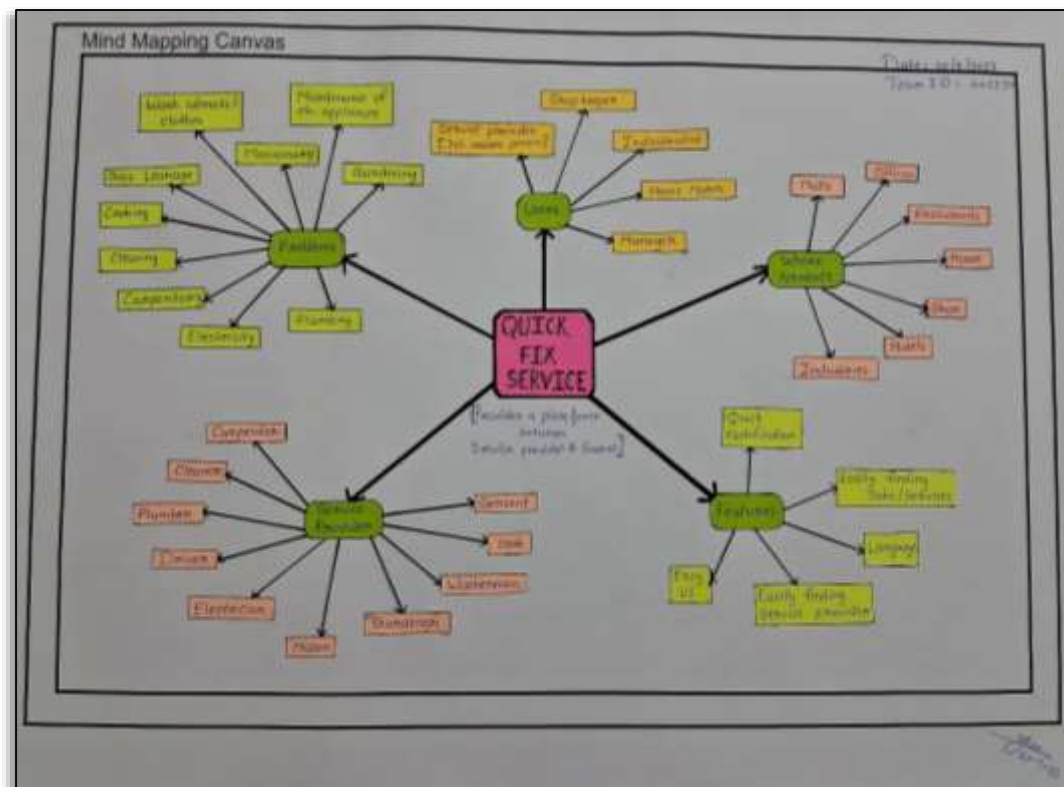


Fig 2.1.2: Mind mapping canvas

- Mind mapping is canvas is the easy way to know about what the project is and what is done after completion of project.

2.3 Ideation Canvas

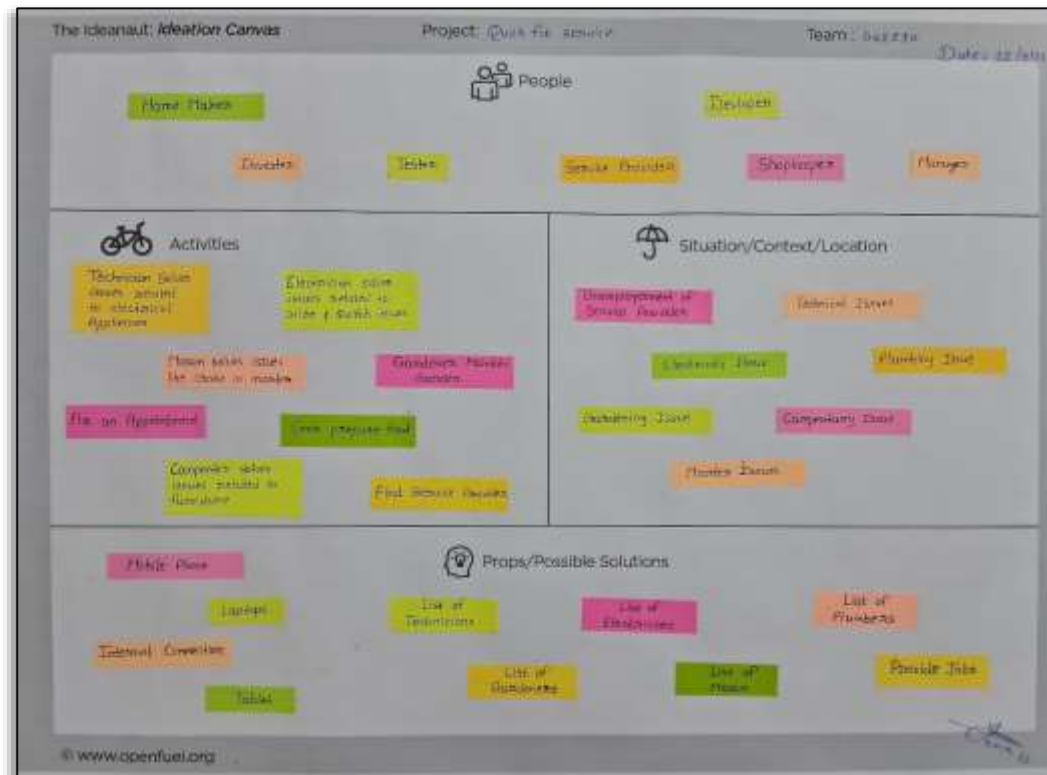


Fig 2.1.3: Ideation canvas

- We started with ideation canvas where first we started with peoples, where we simply thought about the peoples of for whom we want to solve the problem.

2.3.1 People

- People need guidance, inspiration and activities, in a physical and cognitive manner, in order to get the process started.
- Some of people mention below which are effected indirectly:
 1. Home maker
 2. Developer
 3. Service provider
 4. Manager
 5. Tester
 6. Shopkeeper
 7. Investor
 8. Designer

2.3.2 Activities

- People engaged in some activities are as mentioned below:
 1. Fix an appointment
 2. Electrician solve issue related to wire and switchboard.
 3. Find service provider
 4. Mason solves issue like crack in mortar.
 5. Cook prepare food.
 6. Fix an appointment.
 7. Gardener maintain garden.
 8. Carpenter solves issue related to furniture.
 9. Technician solve issue related to electrical appliances.
 10. Service seeker pays to service provider

2.3.3 Props/Possible Solution

- Following are props/ possible solution:
- **Props:**
 1. Smart phone
 2. Laptop
 3. Tablet
 4. Internet Connection
- **Possible Solution:**
 1. Software
 2. Provide jobs
 3. List of service provider
 4. Coding and designing skill
 5. Proper server maintenance team

2.3.4 Context/Location/Situation

- The thought for context/location/situation and finally for possible solution. We conclude that people's emotion when using an interactive system do not only influence the current interaction itself. Some of context/situation/location are as follow:
 1. Gardening Issue
 2. Electricity issue
 3. Technical issue
 4. Plumbing issue
 5. Unemployment of service provider
 6. Mortar issue and Carpentry issue

2.4 Empathy Canvas

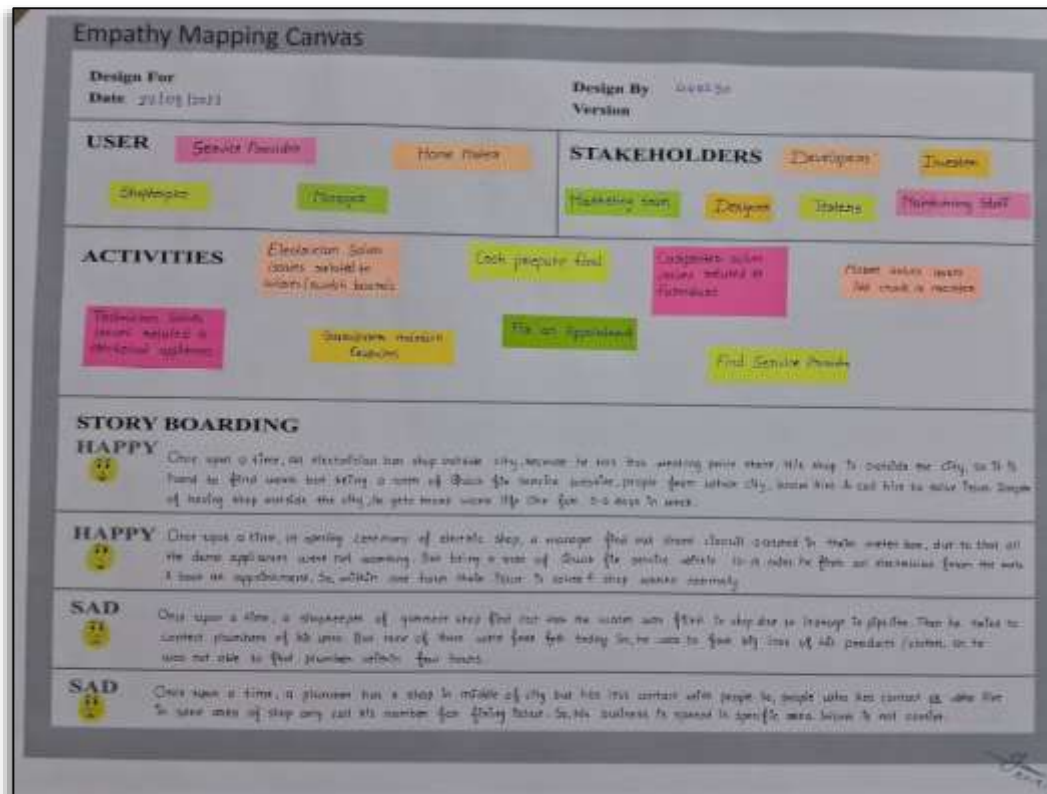


Fig 2.1.4: Empathy canvas

- An empathy map is a collaborative tool teams can use to gain a deeper insight into their customers. Much like a user persona, an empathy map can represent a group of users, such as a customer segment.

2.4.1 Users:

- Users are people whose behaviors, preferences and needs are being observed.
- In summary of USERS, we describe general impression and elements as below:
 1. Manager
 2. Service provider
 3. Homemaker
 4. Shopkeeper

2.4.2 Stockholders:

- Stakeholders are the persons who are involved in the activities of user. We mention some of Stack holder as below:
 1. Developer
 2. Investor
 3. Tester

4. CEO, CFO, MD
5. Maintenance staff
6. Server Manager
7. Designer
8. Marketing team

2.4.3 Activities:

- People engaged in some activities are as mentioned below:
 1. Electrician solves issue related to wire and switchboard.
 2. Find service provider
 3. Mason solves issue like crack in mortar.
 4. Cook prepares food.
 5. Fix an appointment.
 6. Gardener maintain garden.
 7. Carpenter solves issue related to furniture.
 8. Technician solves issue related to electrical appliances.
 9. Fix an appointment
 10. Service seeker pays to service provider

2.4.4 Story Boarding:

HAPPY:

A manager of big electronic shop finds that at opening of shop a short-circuit occur in meter box and all demo appliances were off. But being a user of Fix It Finder within 10-15 minutes he find an electrician from app and book an appointment and within one hour that issue of shop solve and shop working normally.

HAPPY:

A electrician has shop outside city at less renting price as his shop is outside the city so it is hard to find work but being user of Fix It Finder app, people from whole city know him and call him to solve issue. In spite of having shop outside city he gets regular work like for 5-6 days in week.

SAD:

A shopkeeper of garment shop find that the water was filled in shop due to leakage in pipeline. He then call 1-2 plumber of his contact but none of them are free for today. So he has to face a big loss as 70-80% of cloth material damage as he is not able to fix this problem with in few hours.

SAD:

A plumber has shop inside city with high renting price but has less contact with people. So people who have contact with him or who live in same area of shop only call this plumber for fixing issue. So his business is spread in specific area and he not get regular work like 2-3 days per week.

2.5 Product Development Canvas

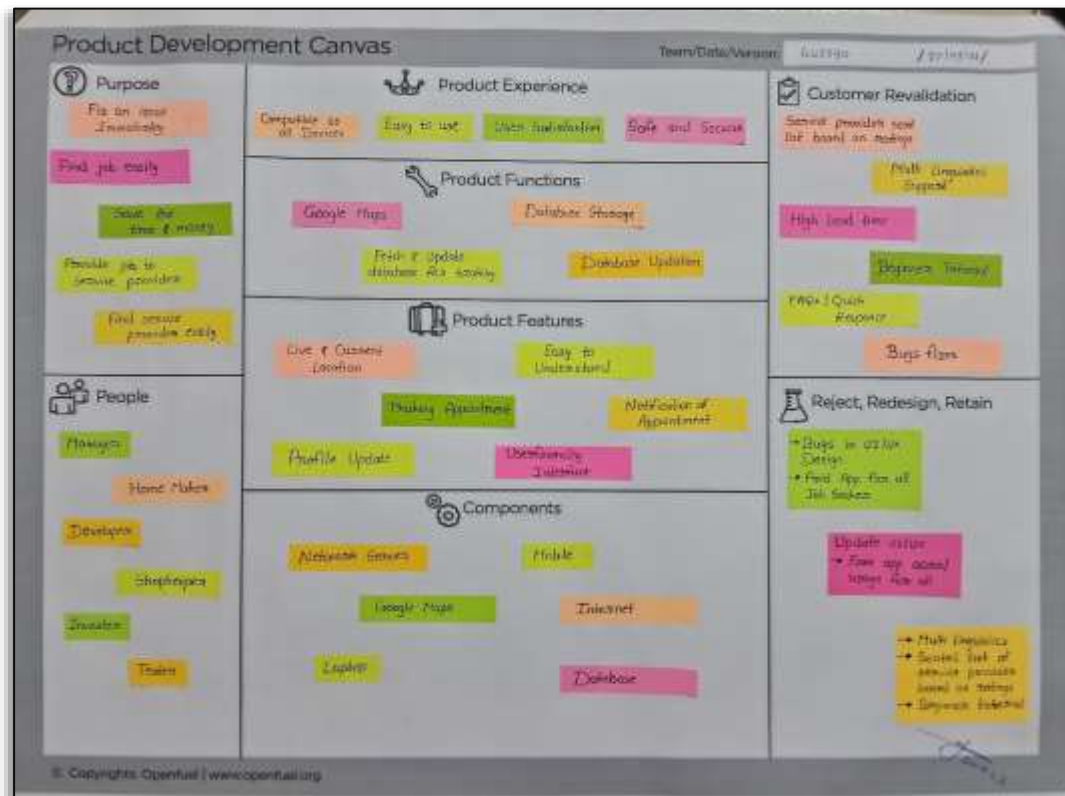


Fig 2.1.5: Product Development Canvas

- A product canvas is a planning tool designed to help build products that have a great user experience through a focus on feature development. It combines agile methodologies with UX principles to help validate product solutions.

2.5.1 Purpose:

- Purpose of our domain are mention below:
 1. Find service provider easily
 2. Fix an issue immediately
 3. To find job easily
 4. Save time and money
 5. Provide job to service provider

2.5.2 Product Experience:

- Product experience is a subset of the entire user experience. It focuses on the entirety of the customer journey that takes place within the product itself. It's from the first time a customer logs in until the final time they quit using an application.

- Product experience of user are as follow:
 1. Easy to use
 2. User satisfaction
 3. Better UI/UX experience
 4. Compatible to all device
 5. Safe and secure

2.5.3 Product Function:

- Function of product are as mention below:
 1. Google maps
 2. Database storage
 3. Database updation
 4. Fetch and update database for tracking
 5. People can view profile of service provider any time.
 6. People can book appointment with service provider

2.5.4 Product Features:

- Product features are a product's discrete areas of new and upgraded functionality that deliver value to your customers. Product features can refer to capabilities, components, user interface (UI) design, and performance upgrades.
- Features of product are as mention below:
 1. Profile Update
 2. Live / current location
 3. User-friendly Interface
 4. Tracking appointment
 5. Notification to appointment
 6. Easy to Understand

2.5.5 Components:

- Components of product are as follow:
 1. Mobile / Tablet
 2. Laptop
 3. G-map
 4. Network/server
 5. Database
 6. Internet

2.5.6 People:

- People need guidance, inspiration and activities, in a physical and cognitive manner, in order to get the process started. Some of people mention below which are effected indirectly:
 1. Home maker
 2. Developer
 3. Service provider
 4. Manager
 5. Tester
 6. Shopkeeper
 7. Investor
 8. Designer

2.5.7 Customer Revalidation:

- Customer Revalidation: Thoughts of the people for whom you are making the product
- Customer revalidation are as follow:
 1. Frequently Asked Question
 2. Bug fixes
 3. High load time
 4. Service provider list sorted based on rating
 5. Beginner Tutorial
 6. Multilinguistic support

2.5.8 Reject, Redesign And Retain:

- **Reject:** Bugs in UI/UX design, paid app for service provider
- **Redesign:** Update UI/UX , free app access for all
- **Retain:** Beginner tutorial, Multilanguage support, sorted list of service provider based on rating.

2.6 PROTOTYPE MODEL

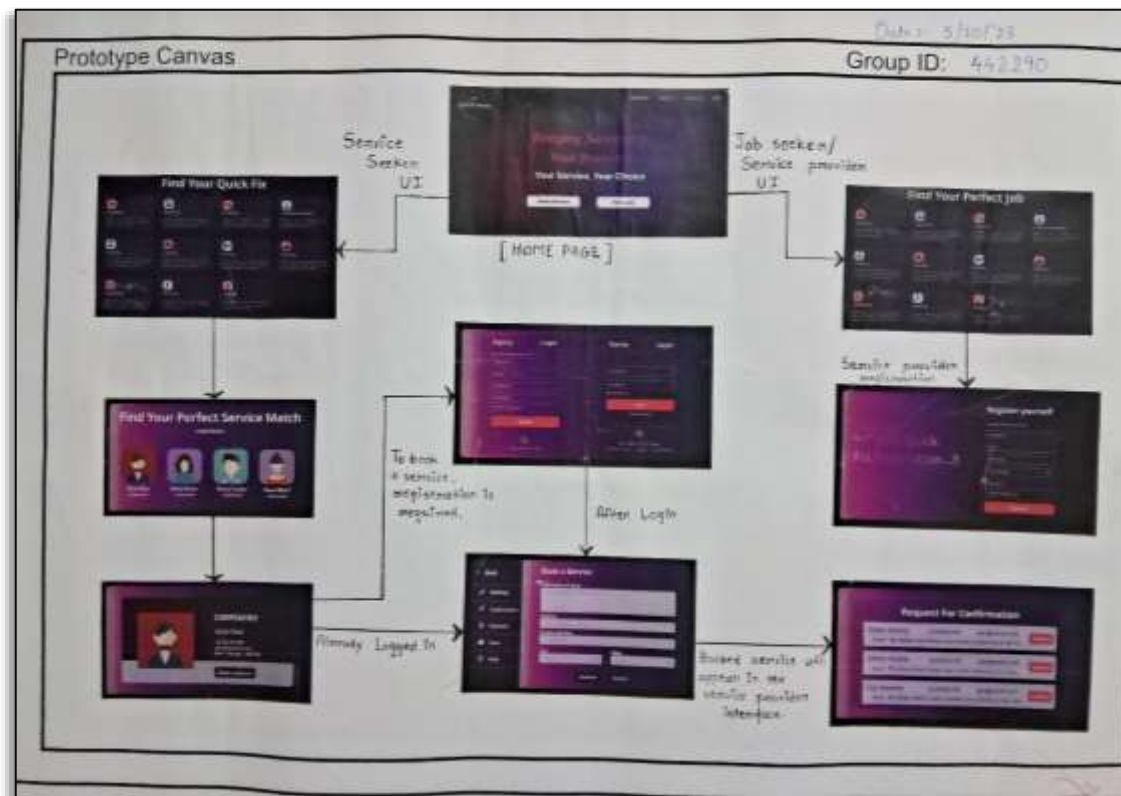


Fig 2.1.6: Prototype

- The Prototype Canvas helps you test a certain aspect of the product of service you have in mind. According to Design a Better Business simply put, prototyping is the art and science of faking it before making it, where 'it' refers to an innovative product or service.

Learning Needs Matrix		Group ID :- 442290	Date :- 20/04/23
Tools/ Methods/ Theories/ Application process involved	<p>During BE IV</p> <p>Applicable standards and design specifications/ Principles and Experiments</p>		
	<p>During BE III</p> <p>During BE II</p> <p>Purpose / Product concept</p> <ul style="list-style-type: none"> → To find Service Provider easily → To get on Taxi Immediately → To find Job easily → To find best & money → Provide Job to service Provider. 		
Software/ Simulation/ Skill/ Mathematical Requirement	<p>Component materials' strength criteria (exploration - varieties/ testing requirements)</p>		

- Learning Needs Matrix will help to identify the learning requirements that are much needed in industry or in their career at an early stage along with prioritization of specific learning. Identification will be focused with listing out Syllabus based and out of syllabus learning & skill development.

- Effective Database
- Application Management
- API development
- G-Map
- G-pay

- Easy to use
- UI/UX
- Single platform solution

2.7.3 Component Material and Strength Criteria

- User Interface
- Security of user data
- Effective Database Management
- Emulator – Mobile phone (Android)

2.7.4 Software/ Tools/ Simulation Methods/ Skill

- Secure payment- G-pay
- Authentication- G-mail
- Data storage and database- Firebase
- App Develop- Flutter
- Software for app development- Android Studio
- Simulation- Emulator

Chapter: 3

UML Diagram

3.1 CLASS DIAGRAM

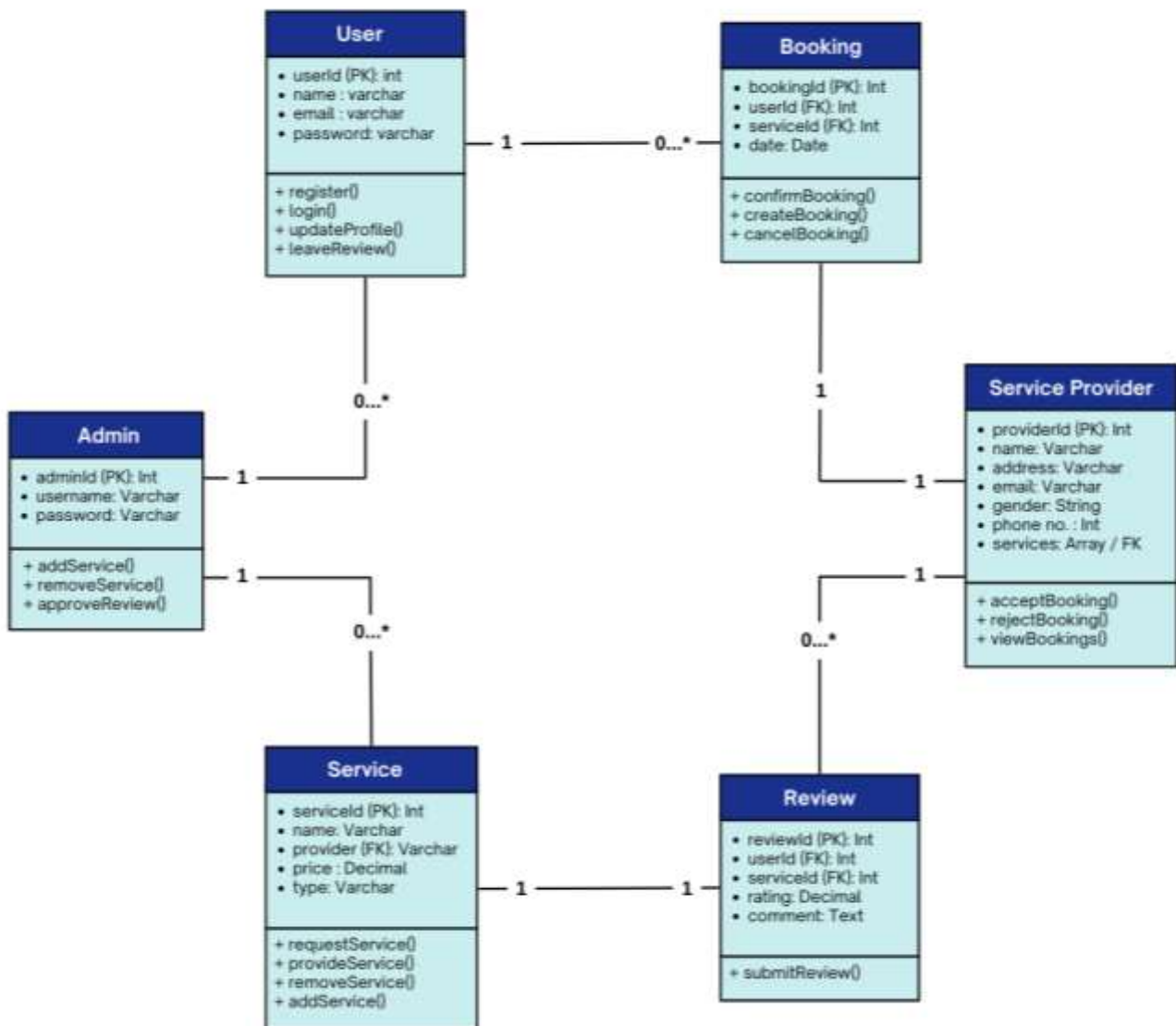


Fig 3.1: Class Diagram

3.2 E-R DIAGRAM

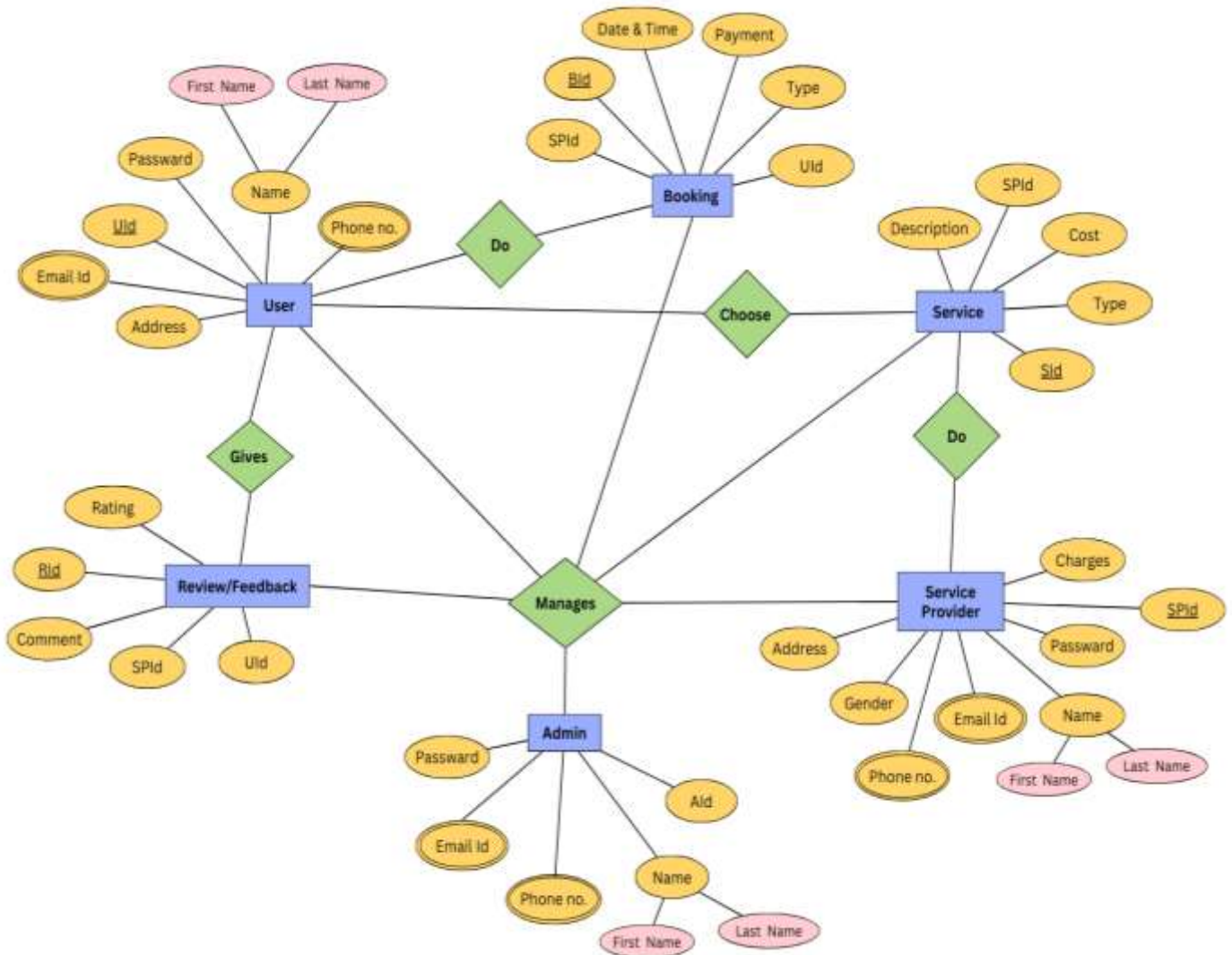


Fig 3.2: E-R Diagram

3.3 DATA FLOW DIAGRAM

LEVEL 0

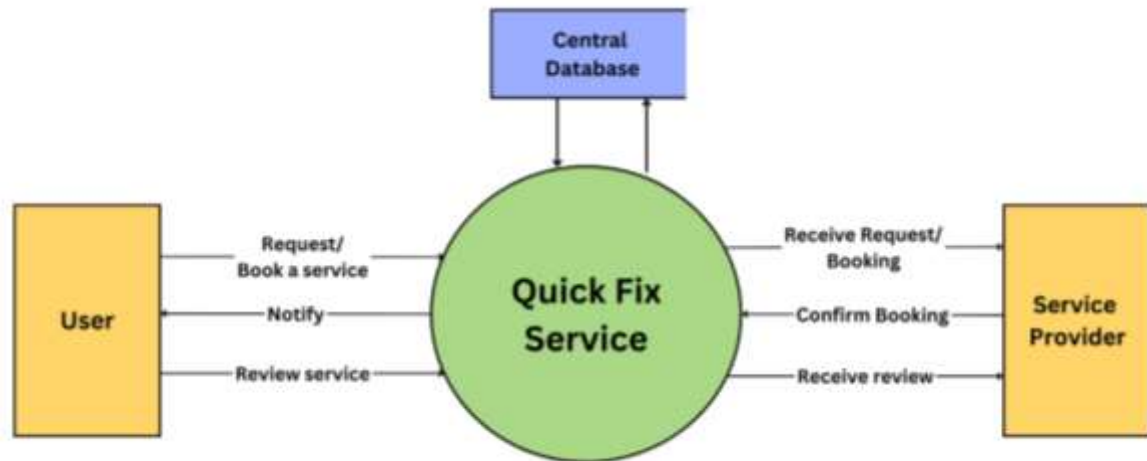


Fig 3.3.1: Data Flow Diagram level 0

LEVEL 1

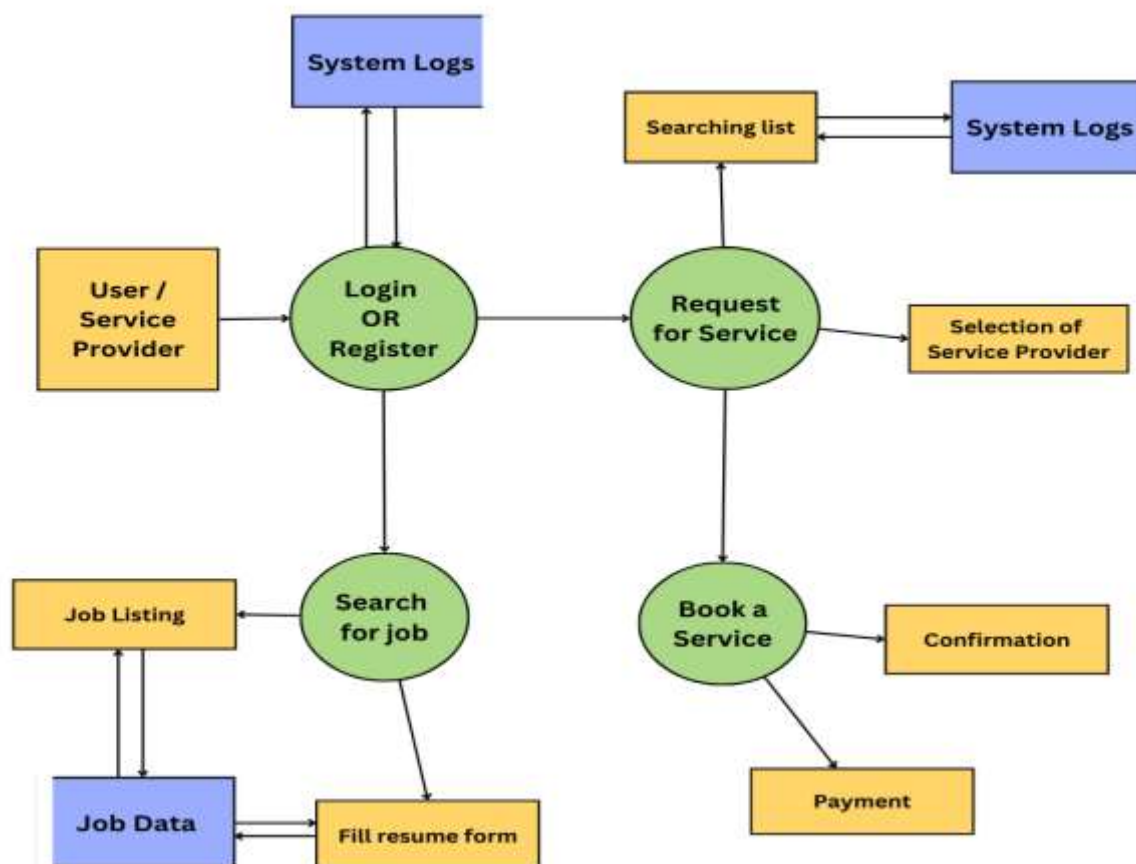


Fig 3.3.2: Data Flow Diagram level 1

LEVEL 2

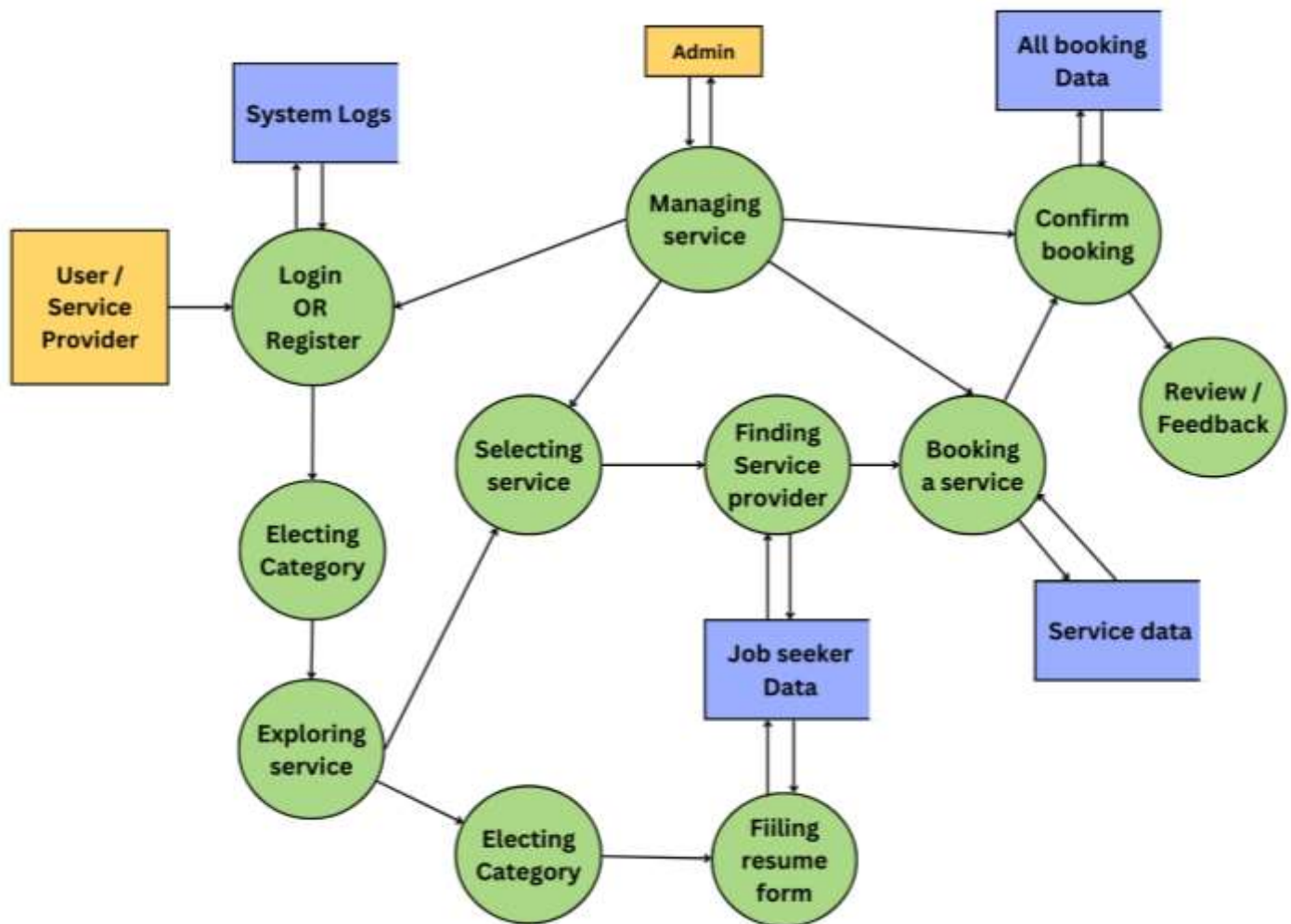


Fig 3.3.3: Data Flow Diagram level 2

3.4 USE CASE DIAGRAM

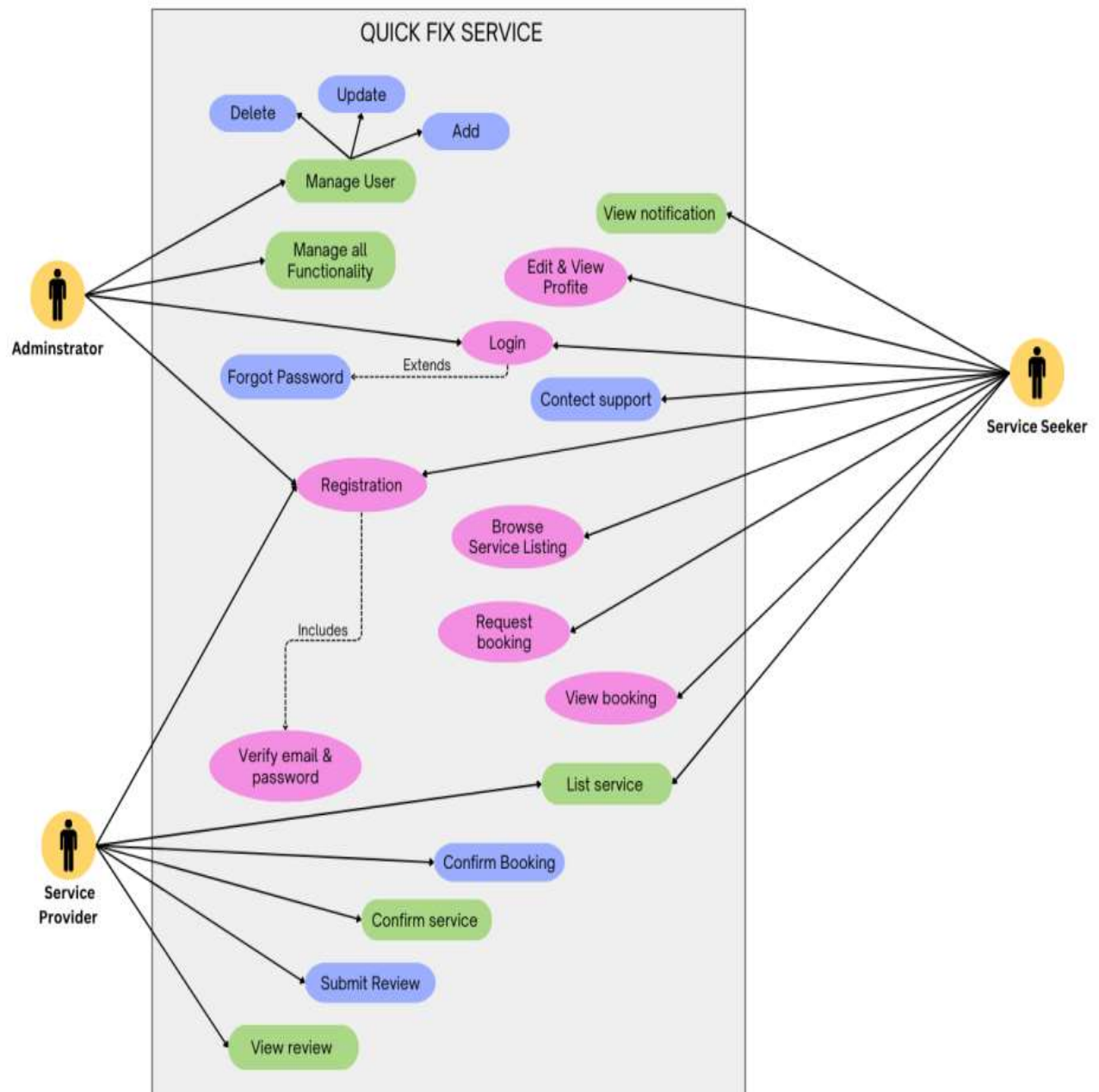


Fig 3.4: Use Case Diagram

3.5 ACTIVITY DIAGRAM

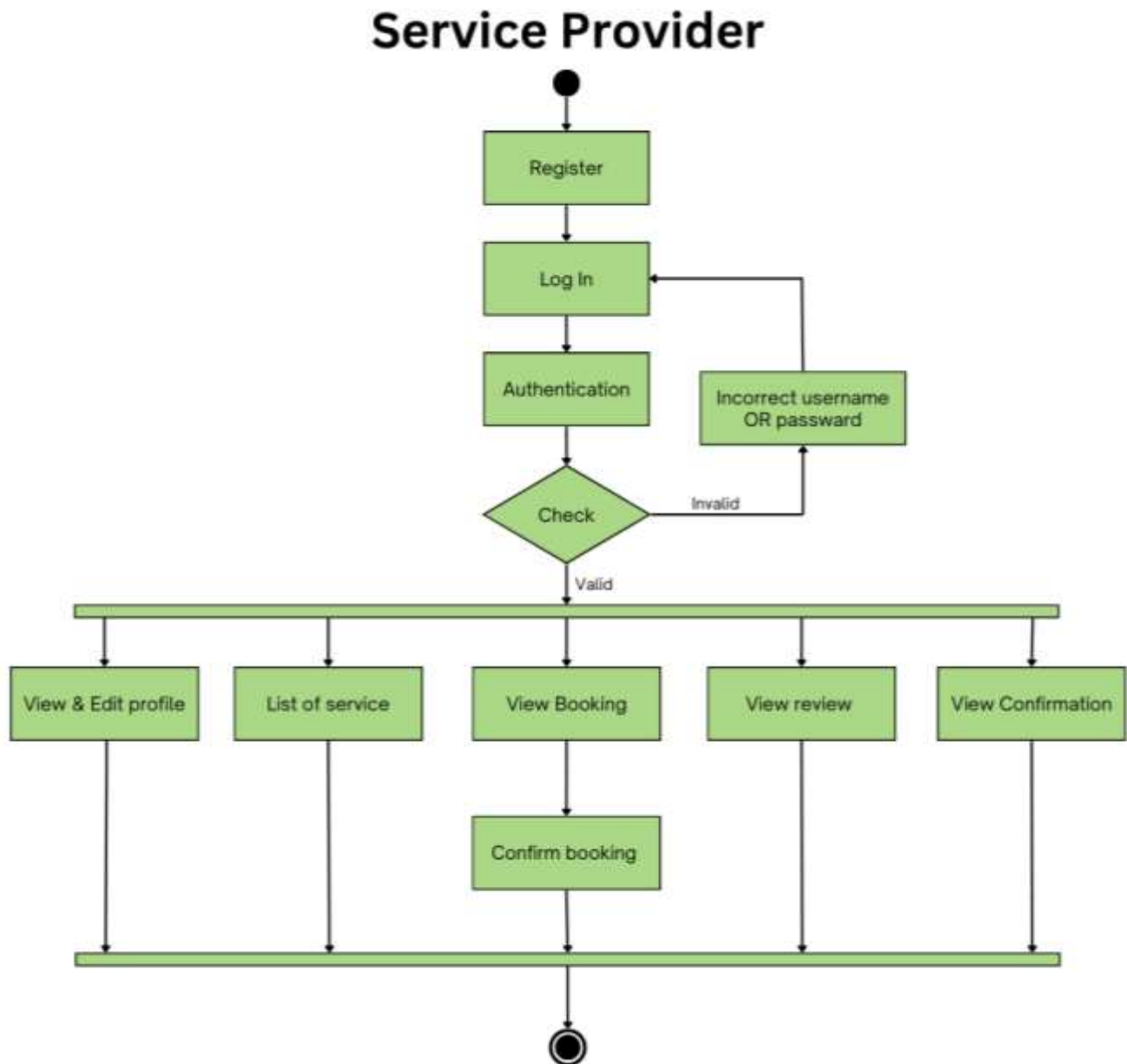


Fig 3.5.1: Activity Diagram -1

Service Seeker

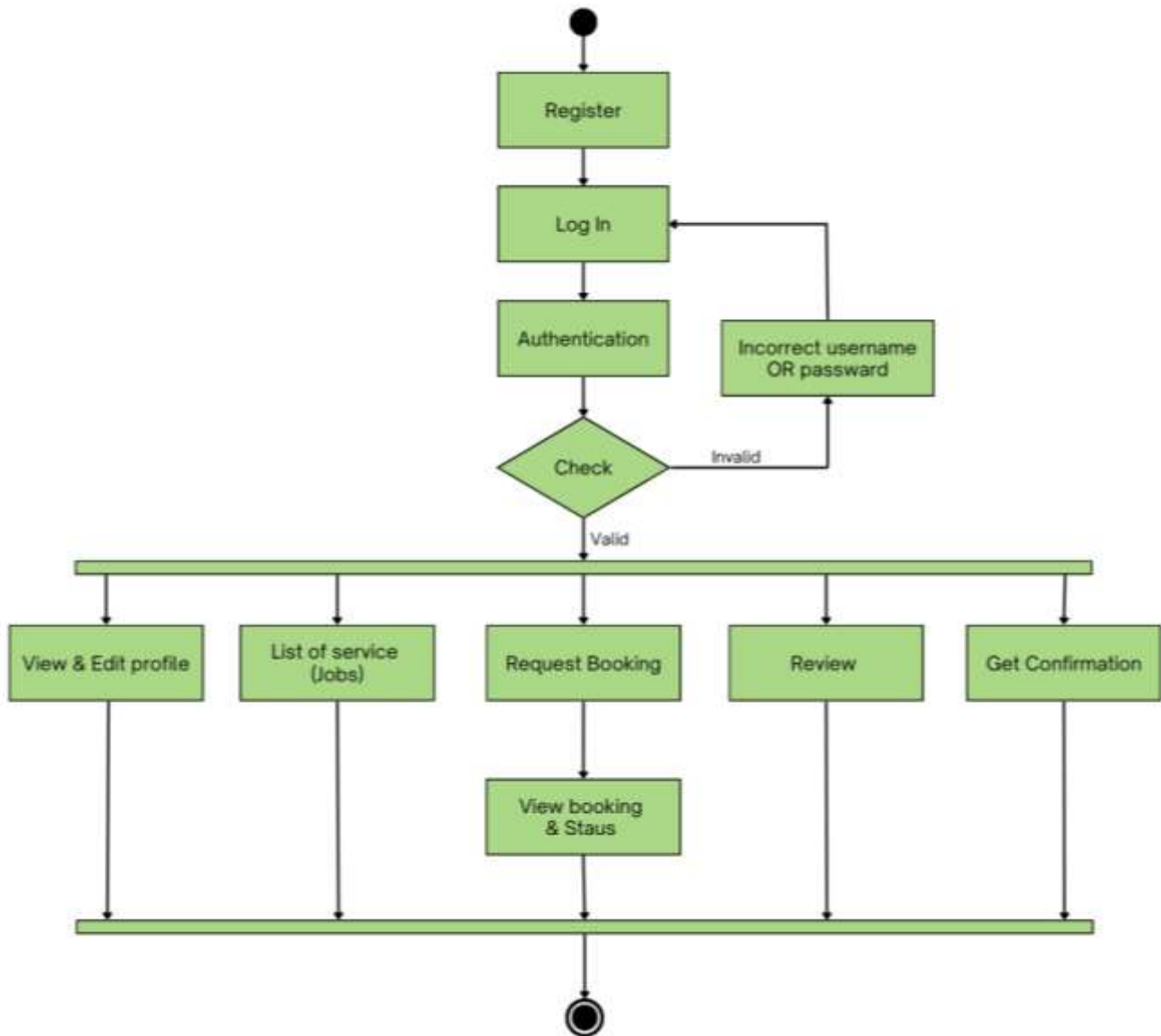


Fig 3.5.2: Activity Diagram -2

Chapter: 4

Implementation

4.1 IMPLEMENTATION

Creating a Quick fix Service web application involves a multifaceted approach. Begin by defining the application's purpose and scope, considering the various home services it will offer. Thoroughly research competitors to identify your unique selling points, and create a comprehensive project plan to guide development.

In the design phase, prioritize user experience and create a visually appealing, intuitive interface. Develop wireframes and prototypes to visualize the application's layout and flow. Ensure a responsive design that adapts to different devices, as mobile accessibility is critical in today's market.

For development, select an appropriate technology stack for the front-end like HTML,CSS,JS, back-end like NODE JS, and database like MongoDB, Firebase. Core features like user registration, service listings, scheduling, and secure payment processing are pivotal. Empower service providers to list their services and manage their profiles seamlessly.

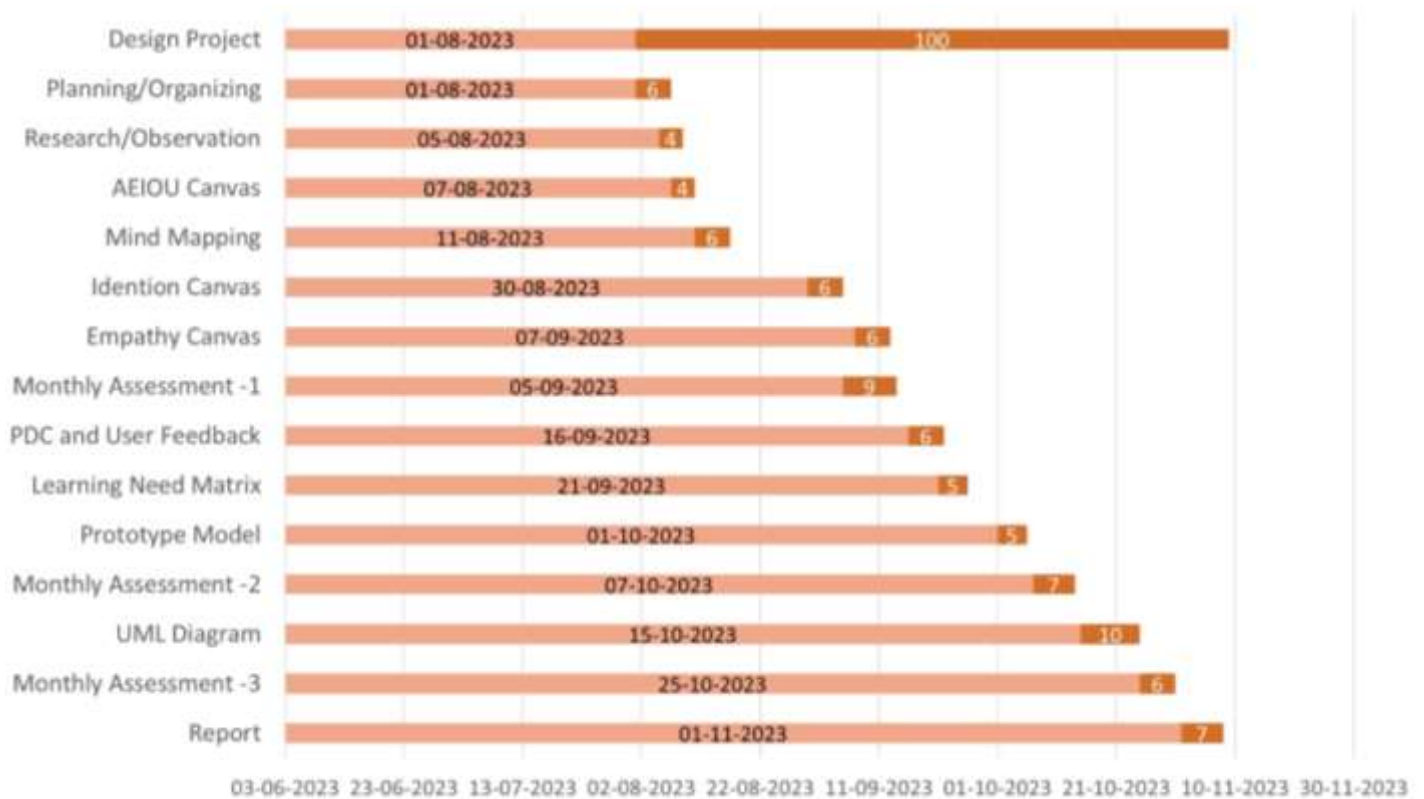
Robust user authentication and data security are imperative. Implement mechanisms to protect user data and transaction information.

The heart of your application lies in its service listings and search functionality. Users should easily discover and book services, and service providers need tools to manage their offerings and schedules. Enable user reviews and ratings to foster trust among the community.

Build an admin panel for efficient platform management, allowing you to oversee users, services, and resolve issues. Rigorous testing, both functional and user experience testing, is crucial to deliver a reliable and user-friendly application.

After thorough testing, deploy the web application and design a marketing strategy to attract users and service providers. Ongoing maintenance and updates are essential to address user feedback, fix bugs, and introduce improvements, ensuring the application's continued success and user satisfaction. Comply with legal and regulatory requirements specific to home services, such as background checks and insurance, to establish a safe and trustworthy platform.

4.2 GAIN CHART



Chapter: 5

Conclusion

CONCLUSION

After putting all the efforts from the beginning till the implementation phase, it is clear that the development done till now will be beneficial to the users in all different perspectives along with the changing trend; one is adopting in the business as well as personal life. Continuing the implementation ahead we will try to provide more features and try to solve the real-life problems related to the domain, also the feedback from the existing users will help us to fix the bug and serve the users in best possible way. Our vision is to make the user-friendly web application with more benefit to the user.

Chapter: 6

Future Scope

FUTURE SCOPE

Looking to the scenario and the statistics, the people are moving towards Digital and so our project Quick Fix Service based on home services, it could be anything right from cleaning services to hiring a beautician. The demand for home services is increasing with the convenience that comes in. Moreover, the increased use of smartphones or laptops has contributed lot, where you will see an app for your every need. When it comes to availing on-demand home services, household services apps have become hot buzz nowadays. From hiring somebody to repair faulty home appliances to getting beauty treatment done at home, all such services just a click away. With the changing lifestyle, the world has become fast-paced and people have less time to rest, the home services apps have become the utmost need of everybody. That is why; an increasing number of start-up entrepreneurs are putting efforts to take this industry and introducing on-demand home services with user-friendly apps that set them apart. Before going deep into the facts, let's have a look at the current stats of “on-demand home services” economy: Recently, the demand for online on-demand home services market has started witnessing huge growth due to convenience and accessibility.

Chapter: 7

Bibliography

BIBLIOGRAPHY

- <https://www.nobroker.in/home-services-in-ahmedabad>
- <https://www.handy.com>
- <https://www.codiant.com/blog/top-10-on-demand-home-service-apps>
- <https://homeservice.in/>

VIDEO REFERENCE

- https://youtu.be/RWnISK_FHo8