



**Daffodil**  
*International*  
**University**

**TITLE OF THE PROJECT**

**Symptoms Checker Healthcare App**

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**Computing & Information Systems**

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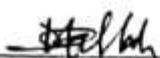
**DAFFODIL INTERNATIONAL UNIVERSITY**

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## APPROVAL

This Project titled "Symptoms Checker Healthcare App system", Submitted by Halima Islam Shampa, ID No: 192-16-456 to the Department of Computing & Information Systems, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computing & Information Systems and approved as to its style and contents. The presentation has been held on-19-07-2023.

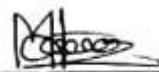
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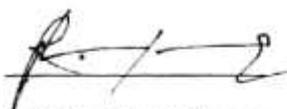
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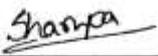
I hereby declare that; this project has been done by me under supervision of **Mr. Md Sarwar Hossain Mollah, Chairman Associate Professor and Head** of department of Computing and Information System (CIS) of Daffodil International University. I am also declaring that this project or any part of there has never been submitted anywhere else for the award of any educational degree like, B.Sc., M.Sc., Diploma or other qualifications.

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I would like to give thanks to the Almighty for helping me create this project, and I would also like to convey my heartfelt thanks to my project supervisor, Professor and Head of the Department of CIS, Mr. Md. Sarwar Hossain Mullah sir, who helped me do this project. As well as other faculty members and staff from Daffodil International University's CIS department, for their assistance in completing my internship (DIU). Also, thanks to my father and mother, who took care of me while doing this project and watched out for me for any kinds of help.

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## Executive Summary

The implementation of the Symptoms Checker Healthcare App System will prove to be very beneficial to its users, as it can be easily accessed. Additionally, this innovative solution provides valuable insights to patients by suggesting the appropriate specialist for consultation based on patient-reported symptoms. Through the system, patients can effortlessly enter their symptoms and, in return, receive a list of specialists from various hospitals. Additionally, this holistic approach is designed to enable patients to make informed decisions about their healthcare journey, ensuring they receive the medical care they need while also being aware of the financial aspects involved.

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## Abstract

The proposed solution aims to address the common problem that patients are unsure of what diseases they may have and which specialists to consult. By allowing patients to enter their symptoms, the solution provides a comprehensive list of specialists available in hospitals and associated fees and costs. In addition, the platform provides detailed information on diseases and symptoms, improving patient understanding. The goal of this solution is to empower patients with the knowledge they need to make informed healthcare decisions, ultimately improving their overall experience and outcomes.

# Chapter 1 – Introduction

## 1.1 Introduction:

In the rapidly evolving field of healthcare, advancements in technology have played an important role in improving accessibility and providing effective solutions to patients worldwide. And here is the Symptom Checker healthcare app system, a project that aims to revolutionize the way patients seek medical advice and connect with appropriate specialists. Harnessing the power of technology, the system offers various benefits that allow users to access it from anywhere, receive personalized advice based on their symptoms, and consult their respective disease specialists to make informed decisions. This presentation gives a detailed overview of the key benefits of the Symptom Checker healthcare app system and highlights its ability to provide patients with comprehensive information on appropriate specialists, hospital selection, the cost of doctor visits, and associated costs, ultimately empowering them to make informed healthcare decisions that guide treatment.

The main goal of the Symptoms Checker healthcare app system is to empower patients by providing them with the knowledge they need to make informed decisions about their healthcare. By entering their symptoms into the app, users are provided with a detailed list of possible illnesses or conditions that match their symptoms. This feature will allow users to better understand their health issues and make informed decisions about seeking medical advice

Additionally, the Symptom Checker healthcare app system offers more than just information about potential illnesses. It also offers a unique feature that connects users with the most suitable medical specialists based on their symptoms and geographic location. Through partnerships with hospitals and healthcare facilities, the app provides users with a curated list of specialists who specialize in treating specific conditions related to their symptoms.

The Symptom Checker healthcare app system not only supports users in finding the right specialist but also provides valuable information about the associated costs. Users can access details of doctor's visit fees as well as other relevant expenses, thus effectively planning their medical consultation. This price transparency enables patients to make informed decisions and manage their healthcare costs efficiently.

Overall, the Symptoms Checker healthcare app system promises to revolutionize the way individuals access health information and connect with the right medical experts. By providing an easy-to-use interface, a comprehensive disease database, and information on specialist availability and cost, the project aims to empower patients and ease their path to better health outcomes.

## Chapter 2 – Initial Study

### 2.1 Background of the project:

The Symptoms Checker Healthcare App System is a groundbreaking project that aims to revolutionize the way users access health information and connect with appropriate medical experts. With this innovative solution, users have easy access to a comprehensive database that provides valuable information about their symptoms and the diseases they may be suffering from.

### 2.2 Problem Statement:

There are numerous apps that help with medical issues and provide services to patients and doctors. All of the apps have undoubtedly made our lives easier than before, but there is one

issue that I, and I believe many other people, have encountered: most people or patients do not know which disease they have or which specialist they should consult with when they become ill. As a result, they consult with the wrong doctor, which causes a loss of time and money. Also, sometimes it becomes too late to identify the exact diseases that could be the cause of death.

### 2.3 Proposed Solution:

As most people or patients do not know which disease they have or which specialist they should consult with when they become ill or facing symptoms, I'm proposing a solution that would inform the patient about which diseases should be consulted with which specialists. Where patients will be providing their symptoms, then I'll provide the list of specialists according to the hospital, along with the doctor's visiting fees and other costs. There will also be a lot of information about diseases and symptoms.

## Chapter3 – UI/UX (User Interface / User Experience)

### 3.1 About UI/UX

UI stands for User Interface and UX stands for User Experience. UI and UX are two interrelated design disciplines that focus on creating a positive and engaging experience for users when interacting with a product such as a website, mobile application or software.

### 3.2 What is UI Design?

UI design refers to the visual elements and aesthetics of a product that users interact with. It involves designing layouts, colors, typography, icons, buttons, and other graphical elements to create attractive and intuitive user interfaces.

### 3.3 What is UX?

UX design focuses on the overall experience of users when interacting with a product. It encompasses the entire product acquisition and setup process, including aspects such as ease of use, accessibility, functionality, and user satisfaction. In a very simple way, it can be said that user experience is how a person, the user, feels when interacting with or experiencing a product.

### 3.4 Goals of UI/UX Design?

The goal of UI and UX design is to create user-centric designs that provide users with a positive and engaging experience. The main goals and importance of UI/UX design are:

**User Satisfaction:** UI/UX design aims to create products that meet user needs and expectations. By focusing on usability, intuitive interfaces, and well-designed interactions, UI/UX designers strive to increase user satisfaction and create a positive perception of the product or brand.

**Ease of Use and Accessibility:** UI/UX design focuses on making products easy to use and accessible for a wide range of users, including people with disabilities. Well-designed user interfaces and intuitive navigation contribute to an improved user experience, allowing users to perform their tasks efficiently and effectively.

**User Engagement:** UI/UX design helps create engaging and interactive experiences for users. With thoughtful and visually appealing designs, designers can capture user attention, encourage discovery, and increase user interaction with the product.

**Brand Consistency:** UI/UX design plays a crucial role in building and maintaining brand consistency. Consistent visuals, typography, colour schemes, and overall design language help reinforce brand identity and create a recognisable and cohesive experience across platforms and devices.

**Competitive Advantage:** In today's competitive digital landscape, UI/UX design can be a key differentiator. Well-designed products that prioritise user experience have a better chance of attracting and retaining users, giving companies a competitive advantage in the marketplace.

**User Feedback:** UI/UX design involves conducting user research, collecting feedback, and analysing user behaviour. This process provides valuable information about user preferences, vulnerabilities, and needs that can be used to continuously iterate and improve the product.

In summary, the goal of UI/UX design is to create user-centric designs that increase user satisfaction, engagement, and ease of use. By prioritising the user experience, businesses can gain a competitive advantage, increase conversions, and build long-term customer loyalty.

### 3.5 What does a UI Designer do and will be responsible for?

A UI (user interface) designer is responsible for creating the visual and interactive elements of a digital product or application. They focus on designing user interfaces that are visually appealing, intuitive to use and provide a positive user experience. The main responsibilities of a UI designer include:

**User Interface Design:** UI designers create the overall look and feel of the user interface, including the layout, color schemes, typography, and visual elements. Their goal is to create visually appealing and harmonious designs that are compatible with the product's brand and target audience.

**Wireframing and prototyping:** UI designers often start by creating wireframes, which are basic visual representations of the structure and layout of the user interface. These wireframes help define the information architecture and the layout of elements. They also create interactive prototypes to demonstrate the flow and functionality of the interface before beginning development.

**Interaction Design:** UI designers define how users interact with the interface by designing the behavior and response of elements. They consider user flows, transitions, animations and micro-interactions to provide a seamless and engaging user experience.

**Visual Design:** UI designers work on the aesthetics of the user interface by choosing appropriate colors, typography, icons, and other visual elements. They create a visual hierarchy that draws users' attention and makes the user interface easier to understand.

**Collaboration with UX designers:** UI designers often work closely with UX (user experience) designers. While UX designers focus on overall user experience and user research, UI designers take their insights and transform them into visually appealing and user-friendly interfaces.

**Working with Developers:** UI designers work closely with developers to ensure their designs are implemented accurately and effectively. They provide design specifications, assets, and documentation to streamline the development process.

**User Testing and Iteration:** UI designers can conduct user testing sessions to collect user interface feedback and make necessary improvements. They iterate their design based on user feedback and usability test results.

**Keeping up with design trends:** UI designers stay abreast of the latest design trends, new technologies and best practices in the field. They continuously improve their skills and knowledge to create modern and innovative user interfaces.

Overall, UI designers play a crucial role in creating visually appealing and user-friendly interfaces that enhance the overall user experience of digital products and applications.

### 3.6 What does a UX Designer do and will be responsible for?

A UX (User Experience) Designer is responsible for creating and enhancing the overall experience that users have when interacting with a product such as a website, application, or software. They focus on making the user's journey intuitive, efficient, and enjoyable. The key responsibilities and duties of a UX designer include:

**User Research:** UX designers conduct user research to understand the needs, behaviours, and preferences of the target audience. This can include interviews, surveys, and usability tests.

**Wireframe Creation and Prototyping:** You create wireframes, which are fictional visual representations of the structure and layout of the product. Prototypes, on the other hand, are interactive examples that allow users to interact with the product before it is fully developed.

**Information architecture:** UX designers organise and structure information within the product to make it easily navigable and accessible for users. They define the information hierarchy and create sitemaps and navigation systems.

**Interaction Design:** You design the product's interactions and interface elements, including buttons, menus, forms, and other interactive elements. They focus on making these elements intuitive, coherent, and visually appealing.

**Visual Design:** While UX designers primarily focus on user experience, they often work with visual designers to provide a consistent and visually appealing user interface. They work on colour schemes, typography, and other visual elements that enhance the overall user experience.

**Usability Tests:** UX designers conduct usability tests to evaluate the product's performance and collect feedback from users. It observes how users interact with the product, identifies pain points or areas for improvement, and iterates the design based on the findings.

**Collaboration and communication:** UX designers work closely with stakeholders such as product managers, developers, and other designers to align design with business goals and technical constraints. They effectively communicate design decisions and represent user needs throughout the development process.

**Accessibility:** Ensuring that the product is accessible to all users, including those with disabilities, by following accessibility guidelines and best practises.

**Iterative Design:** Continuous iteration and improvement of the design based on user feedback, usability testing, and evolving project needs.

In general, the main goal of a UX designer is to ensure that the product meets users' needs, is easy to use, and provides a positive and satisfying experience. It combines user research, design principles, and usability testing to create intuitive and enjoyable experiences for the target audience.

## Chapter4– Literature Review

### 4.1 Problem domain based on published article

The problem domain is based on an healthcare symptoms checker mobile application that allows people to book an appointment and gives health tips and hospital information near

them. However, there are many other needs, like the fact that most people, or patients, do not know what disease they are suffering from or which specialist doctor to contact if they are sick. As a result, they consult the wrong doctor, wasting time and money. Also, sometimes it is too late to detect the exact diseases that can cause death.

#### 4.2 Solution based on published article

This literature review examines the key benefits of the Symptom Checker health app system and emphasizes its potential to provide comprehensive information about medical specialists, hospital selection, doctor visit costs, and associated costs, ultimately empowering patients to make informed health decisions.

#### 4.3 Comparison of leading solutions-

Here I discuss some leading solutions. Those discussed below are:

**DoctorDekhao app:**

It's an online based health app service-



Figure 1: DoctorDekhao Mobile Application

### Best features:

- ✓ Connect with licensed doctors and, receive consultations through video calling.
- ✓ E-prescription to Electronic Health Record.

### Limitations:

- ✓ There is no option for symptoms tracking.
- ✓ Do not have any facilities of health tracking.
- ✓ This app is not user friendly.
- ✓ It's user interface is very poor.

### MetLife 360Health app:

This is a health care application which is focused on only online based services-



Figure 2: MetLife 360Health app

### Best features:

- ✓ provides free doctor consultation and specialist doctor appointment.
- ✓ Online Medicine order.
- ✓ Health assessment.

### Limitations:

- ✓ There is no option for symptoms tracking.
- ✓ There is no option to take physical appointment.
- ✓ There are many technical issues.
- ✓ Not user friendly.

### DocTime App:

It is a medical online service provider-



Figure 3:DocTime app

### Best features:

- ✓ Provides telemedicine service.
- ✓ Online consultation booking.
- ✓ Online payment.

### Limitations:

- ✓ Not user friendly.
- ✓ Only focused on online doctor consultations.
- ✓ Bad user experience.

### Patient Aid App:

It's a healthcare mobile application-



Figure 4: Patient Aid app

### Best features:

- ✓ Provides telemedicine service.
- ✓ Enables users to find doctor, hospital.
- ✓ Gives health tips.

### Limitations:

- ✓ Poor user interface
- ✓ There is nothing that can help you for checking symptoms.

### Shebaghar App:

“Sebaghar” is a digital health service provider app-



Figure 5: Shebaghar app

### Best features:

- ✓ Can get video consultation from reputed doctors.
- ✓ Enables users to find doctor, hospital and book an appointment.
- ✓ Gives ambulance service.

### Limitations:

- ✓ Have some issues with online consultations.
- ✓ There is nothing that can help you for checking symptoms.

#### 4.4 Competitor Analysis:

UX competitive analysis is a technique used by UX researchers to understand the competition, identify opportunities, and uncover strengths.

Competitor analysis for "HEALTHSPOT"							
		Features					
		Symptoms Checking	Appointment Taking	Health Tracking	Health Blogs	Use Of Blockchain	PAYMENT
Competitors	HealthSpot	YES	YES	YES	YES	YES	YES
	Doctor Dekhao	NO	YES	NO	NO	NOT SURE	YES
	MetLife 360Health Bangladesh	NO	NO	YES	NO	NOT SURE	Yes
	DocTime	NO	YES	NO	NO	NOT SURE	YES
	Patient Aid	NO	NO	NO	YES	NOT SURE	NO
	Sebaghar: Online Doctor Video	NO	YES	NO	YES	NOT SURE	YES

Figure 6: Competitor Analysis Table

#### 4.5 Conclusion of competitor analysis:

After analysing my competitors, I found that there is no application that solves most of the problems of many patients at once, but on the other hand, my application will solve most of the problems that a user may face.

## 4.6 Recommended approach

By observing phases, I've discovered some key points that should be remembered by my system. These are listed below:

1. The user should complete registration before using this app.
2. They need to complete the symptom-checking stages before identifying the possible disease.
3. The user interface and navigation bar should be attractive.
4. The user can book an appointment or skip it.
5. The user can make payment for their appointment safely.
6. This system will provide many important health tips.
7. By using this system, users can track their health.
8. It provides comprehensive information about medical specialists, hospital selection, doctor visit costs, and associated costs.

## Chapter 5 – Project Planning

### 5.1 Project Plan

When planning a UI/UX design project, it is important to consider the specific needs and requirements of the design process. Here are some key steps to include in your project plan:

**Define Project Goals:** Clearly state the goals and objectives of the UI/UX design project. Determine what you want to achieve with the design, e.g., improving user engagement, improving the user experience, or complying with brand guidelines.

**Conduct user research:** Start by understanding the target audience and their needs. Conduct user research using methods such as interviews, surveys, and usability testing. Gather insights that serve as the basis for design decisions and help create a user-centric experience.

**Determine design requirements:** Define design requirements and specifications based on user research. Outline the features, functionality, and content that should be included in the UI/UX design.

**Develop an information architecture:** Build a solid information architecture that outlines the structure and organisation of the product or interface. Define the main navigation elements, content hierarchy, and classification to enable intuitive user flows.

**Wireframe Creation and Prototyping:** Begin the design process by creating wireframes, which are faithful visual representations of the interface layout and structure. Iterate over wireframes to refine the design and create interactive prototypes that allow users to experience the design and provide feedback on the design.

**Visual Design:** Develop visual design elements such as colour schemes, typography, icons, and images that fit the brand identity and improve the user experience. Create a visual style guide that ensures consistency across the user interface.

**Iterative design and feedback:** Involve an iterative design process that includes collecting feedback from users, stakeholders, and team members. Use usability testing and feedback sessions to validate design decisions, identify improvement opportunities, and improve UI/UX design.

**Development Transfer:** Prepare necessary design deliverables such as style guides, design specs, and assets for seamless transfer to the development team. Maintain open communication and collaboration with developers to effectively execute the design.

**Quality Assurance and Testing:** Work closely with the development team to conduct extensive testing of the implemented design. Identify and fix any UI/UX issues, verify functionality, and ensure the final product meets desired design standards.

**Launch & Evaluation:** Coordinate launch of UI/UX design, monitor its performance, and collect user feedback after rollout. Analyse metrics and user behaviour to evaluate design effectiveness and identify opportunities for further optimisation.

It's important to maintain open communication with stakeholders throughout the project, collaborate with team members, and effectively manage project schedules and resources. Adapting to changes and incorporating user feedback into the design process helps create a successful UI/UX design that meets user needs and business goals.

## Project Timeline

This Project took us 6 months[24 weeks] to complete

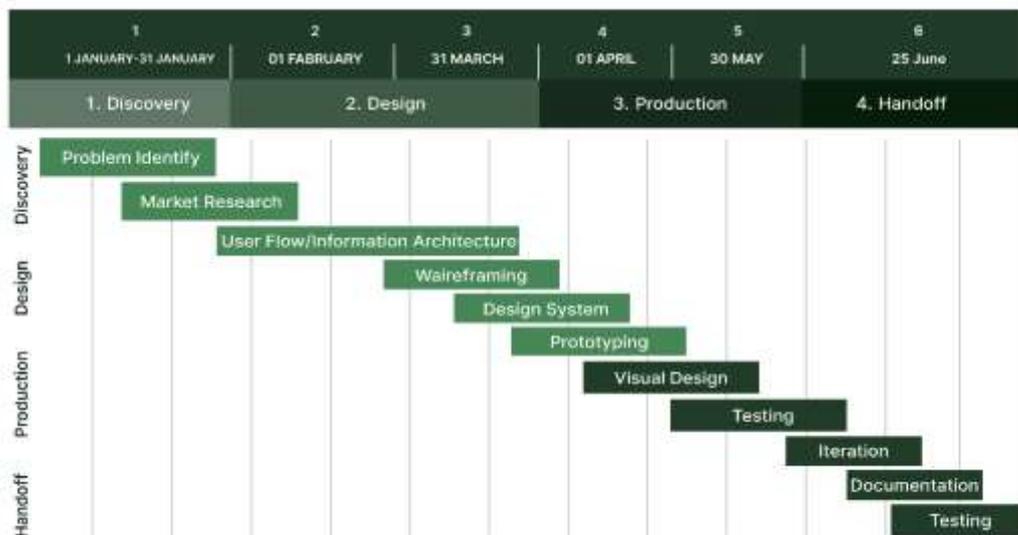


Figure 7: Work Break-Down Structure

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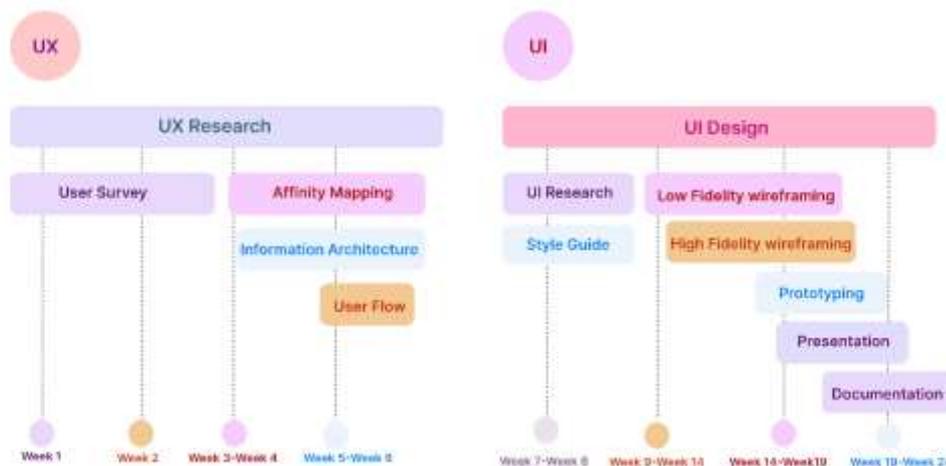


Figure 8: Project Timeline

## 5.2 Business Opportunity:

A business opportunity in UI/UX refers to the chance for a company or organization to use user experience design to achieve specific business goals or to gain a competitive advantage. Investing in creating design offerings and exceptional user experiences. As a result, they can increase customer satisfaction, accelerate business growth, differentiate themselves from the competition, and drive long-term success.

**Here, I'll earn money by advertising. In a mobile app, ads are displayed and monetized in multiple ways (like CPM, CPC, CPV, and CPA). Here, CPV and CPA will be perfect, I think.**

- ✓ CPV - earning is based on the number of views by app users.
- ✓ CPA - user actions like installing the advertised app or purchases through the link lead to the developer's commission.

## Chapter 6 – Methodology

### 6.1 UX Design Process

In UI/UX design, a methodology refers to a structured approach or set of principles and practises that guide the design process. It provides designers with a framework to follow and ensures that design decisions are based on research, user needs, and industry best practises.

Here, I've chosen the UX design process. A UX design process typically follows a design-thinking approach. Design Thinking is a user-centric design methodology that offers a hands-on approach to analysing complex problems to find innovative solutions. Instead of finding solutions directly, designers challenge assumptions and ask questions to uncover the real problem. There is tremendous regular collaboration between users and stakeholders to ensure the solution is aligned with project goals. I've described the UX design process below:

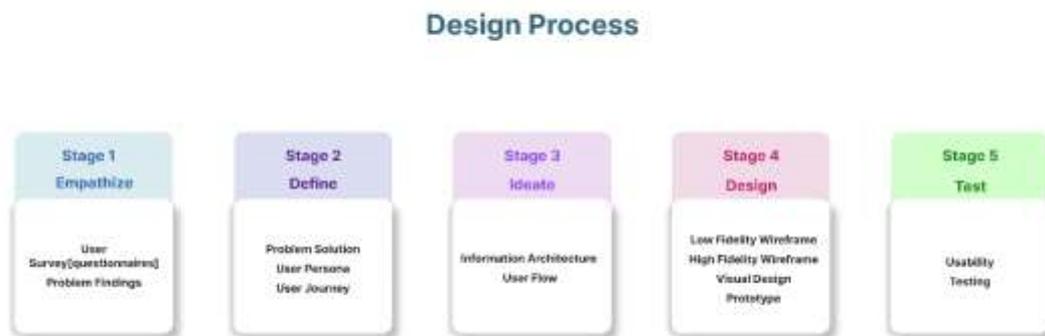


Figure 9: Design Process

**Empathize:** This phase of the design process is crucial and has a major impact on the outcome of the product. Knowing your users allows you to understand their needs and consider the best possible solution. For example, if you are designing a product for doctors,

design the product to meet their needs. A doctor may need a patient record, appointment details, bills, and the type of treatment being offered to the patient. Now, UI/UX designers only know all these requirements if they have gone through the process of empathising with users.

**Define:** In the next step, we combine the findings from our research. We analyse data carefully, looking for repeating patterns and gaining valuable insights about our users. Our goal is to gain a deep understanding of their needs, desires, and pain points. We approach the problem from multiple angles, enabling us to delve deeper into all the angles and possibilities. This extensive research allows us to pinpoint the core issue we need to address in order to provide meaningful solutions to our users. Because solving the right problem is crucial to delivering a valuable and effective user experience, it's important to make sure we're focusing on the right problem.

**Ideate:** After the "empathise" and "define" phases in the design process, the idea generation phase follows. The identification phase is about interpreting the information and defining the problem(s), while the idea generation phase focuses on generating possible solutions. These phases overlap significantly, as both contribute to the generation of problems. Design teams use a variety of methods, such as body storms and "How Can We Be" questions, in both the identification and ideation phases. These methods help stimulate creativity, exploration, and the development of innovative ideas to solve identified problems. The common techniques and processes in these phases allow for a smooth transition from understanding the problem to creating a solution in the design process.

**Design:** After gathering insights and generating potential design guidelines during the idea generation phase, the next step is to turn those ideas into actionable plans. This phase emphasises collaboration and interaction, as it is crucial to gather feedback and input from others to improve product development. By actively seeking criticism and involving

stakeholders, the design team can refine the design concept, making it more applicable and effective. This iterative and collaborative approach enables the final product to benefit from different perspectives and insights, ultimately leading to a higher-quality result.

**Test:** Validation and testing are critical final steps in the user experience (UX) design process. These steps include evaluating the end product's usability with real users. Validation occurs after the creation of the first prototype, and during the user testing phase, both end users and stakeholders participate in evaluating product performance.

## Chapter 7 – Empathize

This phase of the design process is crucial and has a major impact on the outcome of the product. Knowing your users allows you to understand their needs and consider the best possible solution. For example, if you are designing a product for doctors, design the product to meet their needs. A doctor may need a patient record, appointment details, bills, and the type of treatment being offered to the patient. Now, UI/UX designers only know all these requirements if they have gone through the process of empathising with users.

### 7.1 User Survey

I conducted a user survey by reaching out to more users through multiple-choice questions and random questions. With the results from the survey, I was able to reach more users and gather initial or follow-up insights. This provided a useful basis for scripting interview questions that can dig deeper into survey findings.

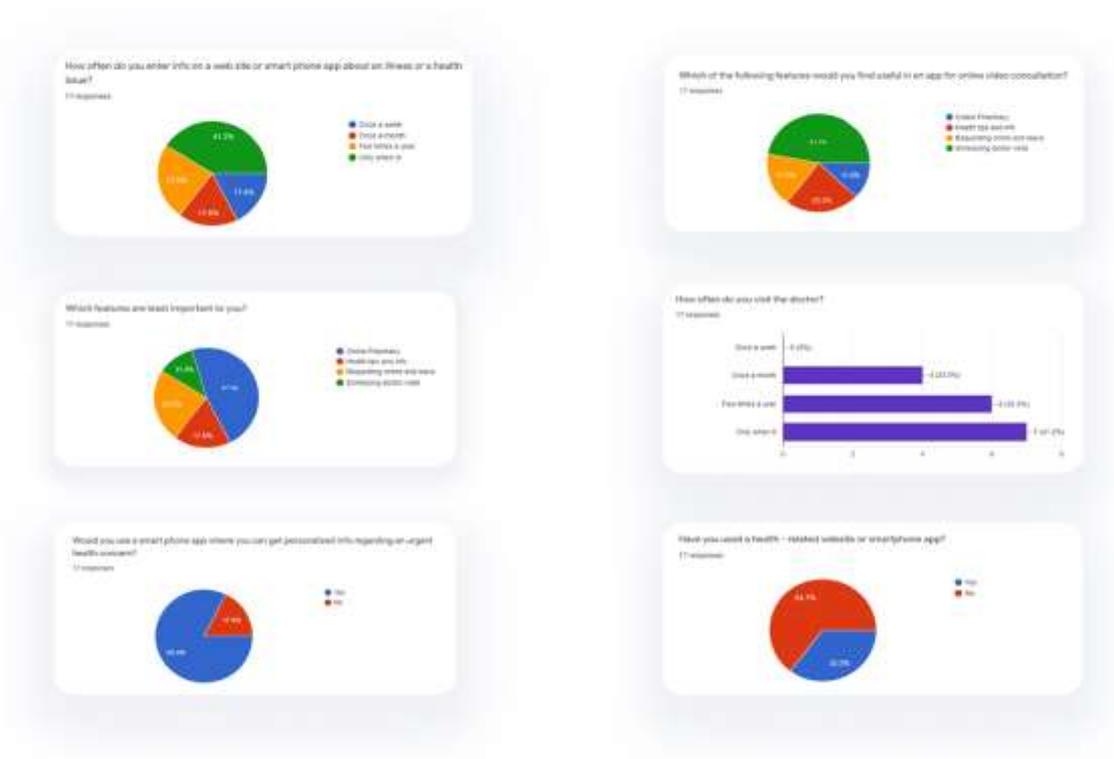


Figure 10: User Survey

### General Questions for users:

1. How old are you? [Most of them between the range of 25-45]
2. Are you using any medical or healthcare app currently? [70% people currently use healthcare app]
3. What kind of feature do you expect that a medical or healthcare app should have? [symptom checking, Appointment booking, Smooth online consultation]
4. What kind of feature or action makes you bored? [Unnecessary action]
5. Do you think using a medical or healthcare app can make your life easier? [60% people think that an app can make life easier]
6. Do you ever face a problem like you or your family suffering from illness but you don't know exactly which specialist you should consult with? [95% people face this problem]

## 7.2 User Survey Insights

- ✓ 41% of the 17 participants visited the doctor only when ill. Visit once a month and a few times a year.
- ✓ Over 60% of the participants have sent and received emails from the doctor and also make use of health-related websites or applications.
- ✓ Participants would rather use smartphone apps for health-related issues.
- ✓ The main reason why participants would rather use an app for online consultation is the time it takes to get consulted by a doctor.
- ✓ Participants find scheduling appointments more important than other features. Participants find including an online pharmacy more important than other features.
- ✓ Most people facing problems find a rights specialist based on their symptoms.

## 7.3 Problem Findings

There are numerous apps that help with medical issues and provide services to patients and doctors. All of the apps have undoubtedly made our lives easier than before, but there is one issue that I, and I believe many other people, have encountered: most people or patients do not know which disease they have or which specialist they should consult with when they become ill. As a result, they consult with the wrong doctor, which causes a loss of time and money. Also, sometimes it becomes too late to identify the exact diseases that could be the cause of death.

**Lack of disease detection:** Users are challenged to accurately identify their health condition or disease without proper guidance or knowledge.

**Unclear Specialist Choices:** Users often have difficulty finding the appropriate specialist or healthcare provider to consult for their specific condition or symptom.

**Misguided consultations:** Due to a lack of education, patients may consult the wrong doctor or specialist, resulting in wasted time and money and potential delays in receiving appropriate care.

**Delayed Diagnosis:** Without timely and accurate detection of the disease, there is a risk of delayed diagnosis, which can lead to disease progression and potentially life-threatening consequences.

**Inefficient navigation of healthcare:** It is difficult for users to navigate healthcare efficiently, especially when they are unsure of which doctor to contact.

**Potential Consequences:** The inability to identify the right disease or consult the right specialist can lead to inadequate treatment, aggravation of symptoms, and, in some cases, even fatal consequences.

**Disempowerment:** Users can feel disempowered and overwhelmed by the complexities of healthcare decisions, leading to frustration and insecurity about their own well-being.

**Limited access to information:** The difficulty in accessing reliable, comprehensive, and user-friendly resources or platforms that provide accurate disease information and guidance further exacerbates the problems.

**Financial Burden:** Seeing multiple physicians or having unnecessary tests and treatments performed due to misguided consultations can place a financial burden on patients and their families.

**Emotional Stress:** Dealing with the uncertainty and frustration of not knowing the exact disease or not receiving timely and appropriate care can create emotional distress for patients and their loved ones.

These pain points highlight the challenges users face when it comes to disease identification, specialist selection, and healthcare navigation. Addressing these issues through improved information resources, user-friendly interfaces, and accurate guidance can greatly improve the healthcare experience for patients and ultimately save lives.

## Chapter 8 – Define

### 8.1 Problem Solutions

**Symptom-Based Disease Identification:** Develop a symptom checker feature that allows users to enter their symptoms, and the system generates a list of possible diseases or conditions based on the input. This helps users narrow down possible diagnoses and better understand their health concerns.

**Expert Advice:** Once possible diseases have been identified, provide users with a list of recommended specialists or healthcare professionals who specialise in treating these specific conditions. This allows patients to connect with appropriate specialists for their specific healthcare needs.

**Physician Profiles and Information:** Provide detailed profiles of physicians, including their qualifications, specialties, experience, and patient reviews. This allows patients to make informed decisions about choosing a healthcare provider based on their preferences and needs.

**Visiting Fees and Costs:** View information on visit fees and related consultation, testing, procedure, or treatment costs offered by different specialists or hospitals. This allows patients to consider the financial aspect and choose accordingly.

**Comprehensive Disease Information:** Provide reliable and comprehensive information about a variety of diseases and conditions, including symptoms, causes, risk factors, and treatment options. This educates patients and gives them a better understanding of their health concerns.

**User-Friendly Interface:** Design a user-friendly interface that simplifies the process of entering symptoms, navigating disease information, and selecting appropriate specialists. Intuitive design and a clear presentation of information contribute to a smooth user experience.

**Personalised Recommendations:** Implement a personalised recommendation system that takes into account factors such as user history, previous diagnoses, and treatment records. This tailors advice and information to each individual's specific health needs and medical history.

**Integration with Healthcare Providers:** Collaborate with hospitals, clinics, and healthcare providers to ensure the accuracy and timeliness of specialist information, fees, and appointment schedules. Real-time integration helps users access the most relevant and up-to-date information.

**Reliable and Trusted Sources:** Ensure that the information provided about diseases, symptoms, and specialists is sourced from reputable medical references and authoritative sources. This builds trust among users and instills confidence in the platform's reliability.

**Continuous Improvement and Feedback:** Collect user feedback and data regularly to improve the accuracy and relevance of the system. Actively incorporate user suggestions and iterate the functionality of the platform to improve the overall user experience and meet changing user needs.

By applying these solutions, patients can have a trusted resource to guide them in understanding their symptoms, identifying appropriate specialists, and making informed health decisions. Such a platform enables individuals to take responsibility for their health and receive timely and effective care.

## 8.2 Five [5] Features of This Service

**Symptoms Checking:** People will be able to identify any disease by providing symptoms.



**Appointment Taking:** They'll be able to book an appointment with their preferred specialist after analysing their disease.



**Payment:** People will be able to pay medical fees through the mobile banking system by using this app.



**Health tracking:** This app will provide health related tips by tracking user health.



**Health Blogs:** This feature will provide health related blogs.



**Use Of Blockchain:** Blockchain is an emerging technology in the field of mobile application development. The technology runs on an encrypted network and, combined with other features, makes transactions (such as online consultation payments) secure and safe from any cyber-attacks.



### 8.3 User Persona

A UX persona is a fictional character that represents your target users. Personas are an extremely valuable UX tool that will help you better understand your target audience and make design decisions accordingly. A persona is a fictional character that represents certain traits and qualities of real users. In UX, personas are an important tool to understand and empathise with your target audience.

Personas are usually captured in a document or presentation platform and provide an easy-to-understand visualisation of your target users. Personas are a mix of text and icons or graphics, and you can also give them a face. For example, you can receive an individually drawn illustration or use an archive image.

Although personas are fictional, they should be based on facts and data from real users. This is determined through user research and any behavioural data you may have collected in relation to the product you are designing.

Here, I've created four different user personas:

 <b>Rafiqul Islam</b> <b>Ages Gender</b> <b>Location</b> 35/male      Dhanmondi, Dhaka <b>Occupation</b> <b>Family Status</b> Accountant      Married	<b>Bio</b> Rafiqul Islam is 35 years old. he is an accountant living in dhaka. He is always looking for ways to take care of his and his family's health.	<b>Motivations</b> Rafiqul Islam is motivated by his need to take care of his health & his family's health. Also his desire to get the best medical care.	<b>Devices</b> Uses an Android phone and a laptop.
	<b>Goals</b> Rafiqul islam wants to easily keep track of his health and be able to easily find the right specialist for his medical needs.	<b>Pains</b> Rafiqul islam finds it difficult to keep track of his health and find the right specialist for his medical needs.	<b>Brand Affiliations</b> Facebook , YouTube, Bkash

Figure 11:User Persona (1)

 <p><b>Nahi Anan</b></p> <p><b>Ages Gender</b>      <b>Location</b> 25/Female      Mirpur-1,Dhaka</p> <p><b>Occupation</b>      <b>Family Status</b> Sales Executive      Single</p>	<p><b>Bio</b></p> <p>Nahi Anan is 25 years old. She is a sales executive living in dhaka. She is single and loves using new technology to help with her health and wellness.</p>	<p><b>Motivations</b></p> <p>Nahi Anan is motivated by her need for quick and accurate information on her health, and her desire to be proactive with her health.</p>	<p><b>Devices</b></p> <p>Nahi uses an iPhone and a laptop.</p> <p><b>Brand Affiliations</b></p> <p>Facebook ,YouTube, Bkash.</p>
	<p><b>Goals</b></p> <p>Nahi wants to easily find information on her symptoms, and be able to book doctor's appointments and track her health.</p>	<p><b>Pains</b></p> <p>Nahi anan finds it difficult to find accurate information on her symptoms. She also finds it hard to coordinate doctor's appointments.</p>	

Figure 12: User Persona (2)

 <p><b>MD. Liton Ali</b></p> <p><b>Ages Gender</b>      <b>Location</b> 45/male      Mirpur-1,Dhaka</p> <p><b>Occupation</b>      <b>Family Status</b> Gov. Service holder      Married</p>	<p><b>Bio</b></p> <p>MD. Liton Ali is 45 years old Government service holder in Dhaka, bangshal. he is married and has three kids . He is very health conscious and wants to stay on top of her health.</p>	<p><b>Motivations</b></p> <p>MD. Liton Ali is motivated by his need to stay healthy and to make sure her family is healthy. Also his desire to get the best medical care.</p>	<p><b>Devices</b></p> <p>Uses iPhone 10.</p> <p><b>Brand Affiliations</b></p> <p>Facebook ,YouTube, Bkash,Nagad,Uber</p>
	<p><b>Goals</b></p> <p>MD. Liton Ali wants to easily check his symptoms and find the best specialist according to his possible disease.</p>	<p><b>Pains</b></p> <p>Md. Liton all finds it difficult to find accurate health information and the right doctor forr his illness. He is also facing difficouites to find right specialist recomendations.</p>	

Figure 13: User Persona (3)

 <p><b>Antara Ridha Nabila</b></p> <table border="0"> <tr> <td><b>Ages Gender</b></td> <td><b>Location</b></td> </tr> <tr> <td>25/Female</td> <td>Mirpur,Dhaka</td> </tr> <tr> <td><b>Occupation</b></td> <td><b>Family Status</b></td> </tr> <tr> <td>Student</td> <td>Single</td> </tr> </table>	<b>Ages Gender</b>	<b>Location</b>	25/Female	Mirpur,Dhaka	<b>Occupation</b>	<b>Family Status</b>	Student	Single	<p><b>Bio</b></p> <p>Antara Ridha Nabila is 25-year-old student living in dhaka. She is single, live with her parents. She is always looking for ways to improve her and her family's health.</p>	<p><b>Motivations</b></p> <p>Antara Ridha Nabila is motivated by her need to ensure her family's health and wellbeing. Her desires to have better understanding of her and her family's health.</p>	<p><b>Devices</b></p> <p>She uses an android phone and a laptop.</p>
	<b>Ages Gender</b>	<b>Location</b>									
25/Female	Mirpur,Dhaka										
<b>Occupation</b>	<b>Family Status</b>										
Student	Single										
<p><b>Goals</b></p> <p>Antara Ridha Nabila wants to be able to quickly and accurately diagnose symptoms. Also she wants to be able to book specialist appointments quickly and efficiently.</p>	<p><b>Pains</b></p> <p>Antara Ridha Nabila finds it difficult to access the best medical advice and find the right specialist for her family's needs.</p>	<p><b>Brand Affiliations</b></p> <p>Facebook,Instagram, YouTube,Bkash,Pathao, Uber.</p>									

Figure 14: User Persona (4)

## 8.2 User Journey Map

A UX journey map visually presents a user's experience while interacting with a particular product, such as an app or website. It helps designers create more intuitive and user-friendly software by analysing user interactions, vulnerabilities, and preferences. These maps provide a deeper understanding of the user's perspective, enabling the design of an optimised and more satisfying user experience.

# The user journey of....

## User goal or problem

What is the user trying to accomplish? What is the problem to be solved?



## User action

What actions are they currently taking? How are they doing it? What information are they seeking?



## Quotes and sentiment

How do they feel in this moment?

Drag one of these stickers or write a quote...



## Opportunity

What are some things that could improve this moment? Could this be skipped or solved elsewhere?



Figure 15: User Journey

### 8.3 Brand Identity (Logo)

Name of the system: "HealthSpot".



Figure 16: System's Logo

**Tag Line:** "Take Right Decision At Right Time".

**Name Rational:** I've chosen this name ("HealthSpot") because it is short, memorable, and easy to spell. This app will assist you in identifying any disease by providing symptoms, as well as providing all health-related information. Also, I believe this name will be able to grab users' attention and help them understand what kind of services this app may provide.

## 8.4 Logo Rationale:

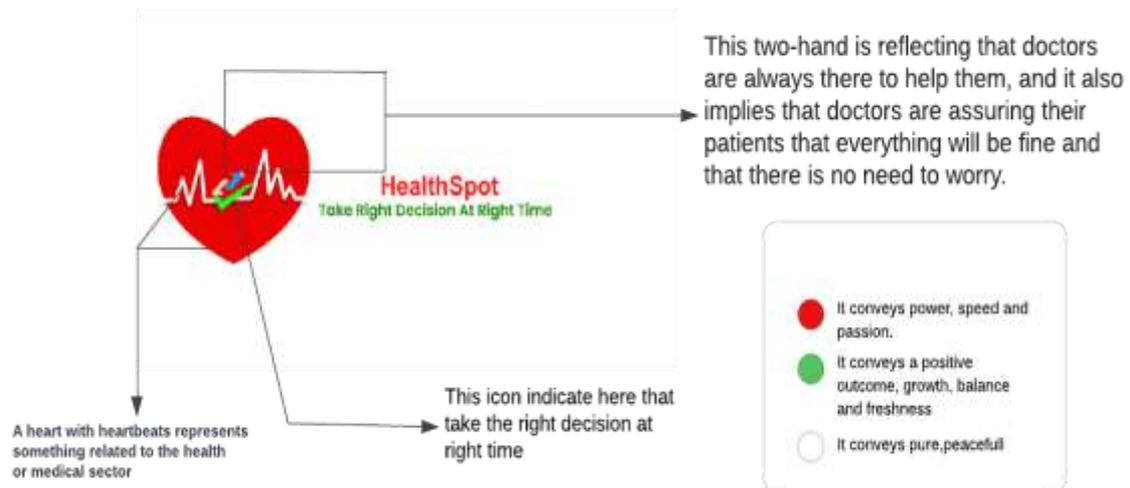


Figure 17: About Logo Details

## Chapter 9 – Ideate

### 9.1 Information Architecture

Information Architecture (IA) is the art of organising and presenting information in a way that users can easily find and understand. It involves structuring and categorising information in both online and physical spaces to create intuitive and accessible environments.

IA plays an important role in a variety of contexts, such as websites, apps, museums, and retail stores. It ensures that information is organised and presented in a logical and coherent manner, allowing people to find what they need with ease. Just as a museum organises exhibits by historical eras or a supermarket places similar products in specific aisles, internal intelligence makes meaningful connections between information and its context.

From a user's perspective, IA recognises that people perceive information as places constructed by language. This language includes visuals, labels, menus, and content that collectively shape the user experience. By carefully organising and structuring this language, IA improves understanding and facilitates efficient information retrieval.

The purpose of IA is to optimise availability and understandability. This is achieved by creating clear routes, intuitive navigation systems, and efficient search functions. Sophisticated AI enables users to effortlessly discover, browse, and search relevant information so they can make informed decisions and derive value from their interactions with information environments.

Whether it's a website, an app, a museum, or a store, effective AI enables users to effortlessly navigate and understand their surroundings. It converts knowledge into meaningful experiences, allowing users to discover what they are looking for while seamlessly grasping the relationships between disparate pieces of information.

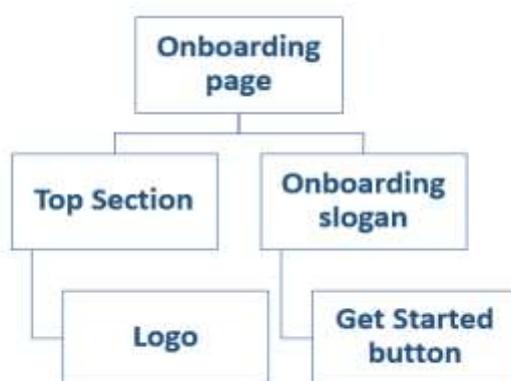


Figure 18: Onboarding open app Information Architecture

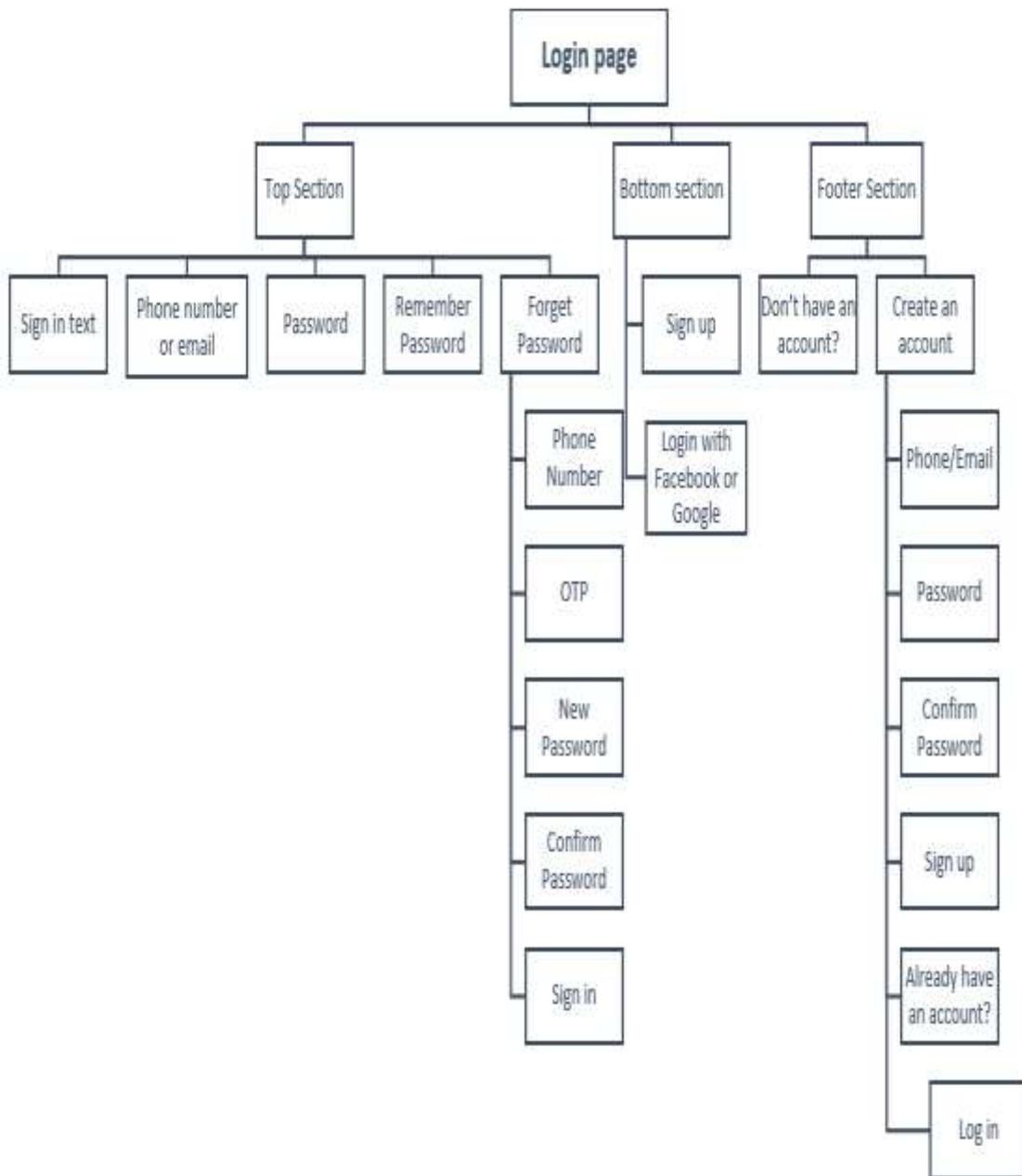


Figure 19: Login/Signup/Forget password Information Architecture

## Full App Information Architecture

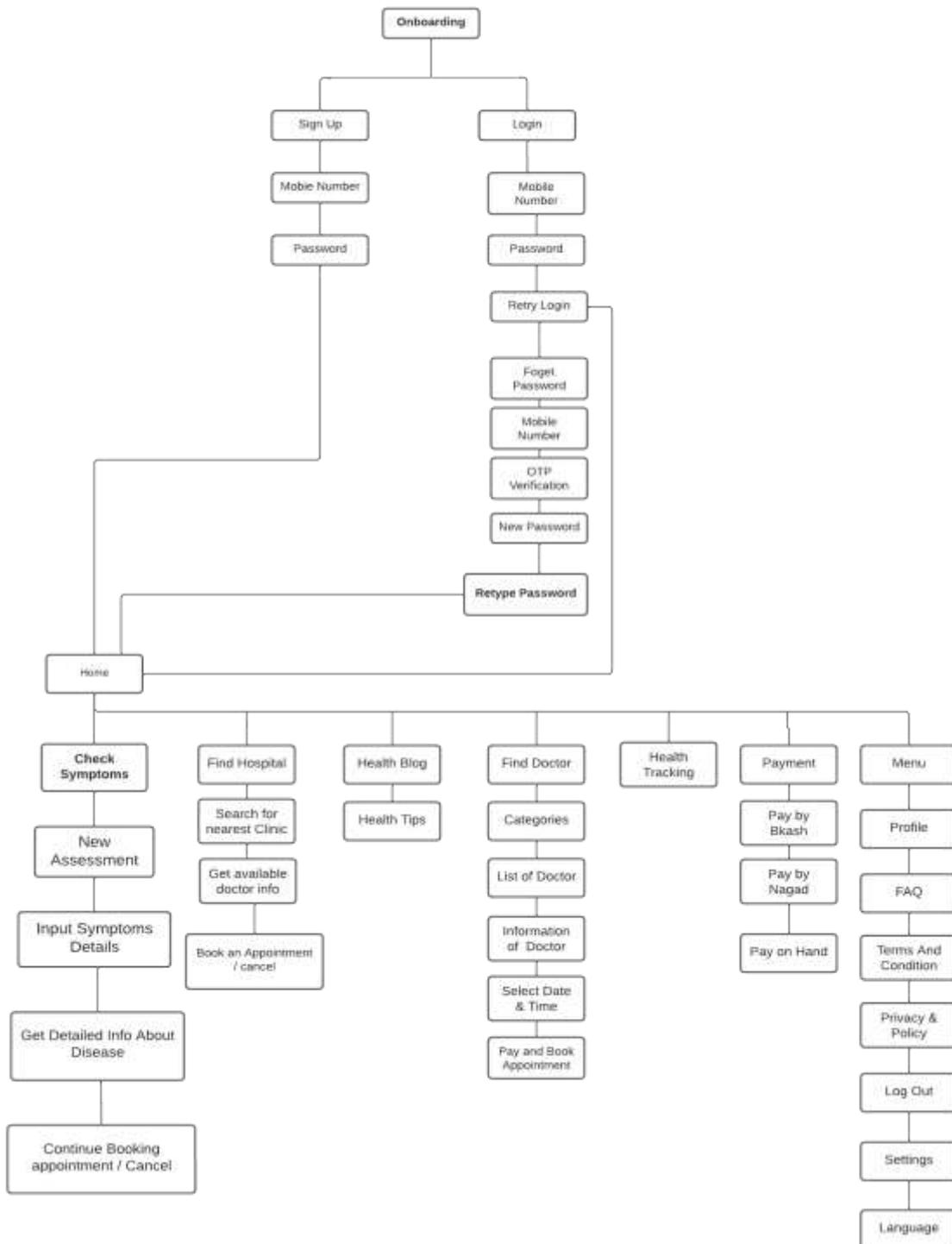


Figure 20: System's Information Architecture

## 9.2 User Journey Map

A UX journey map is a visual representation that highlights the user's experience when interacting with a specific product, such as an app or website. It provides valuable insights into user interactions, weaknesses, and areas for improvement. By analysing the journey map, designers can create user-friendly and intuitive software that meets users' needs and expectations.

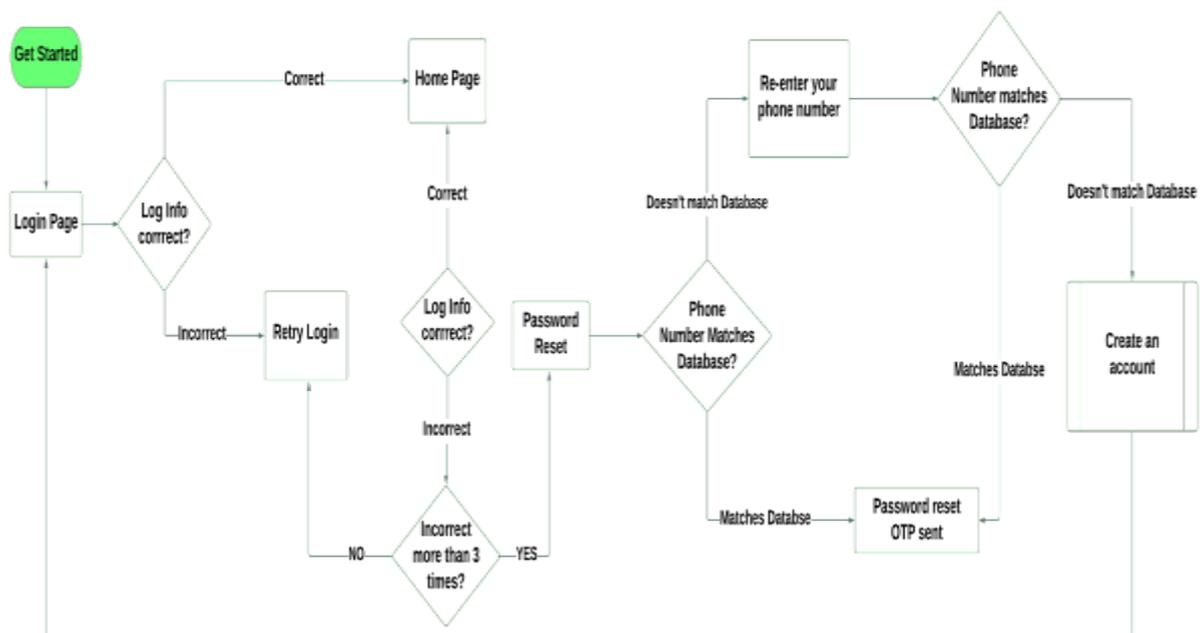


Figure 21: A use case diagram for login and signup process

User Flow Diagram

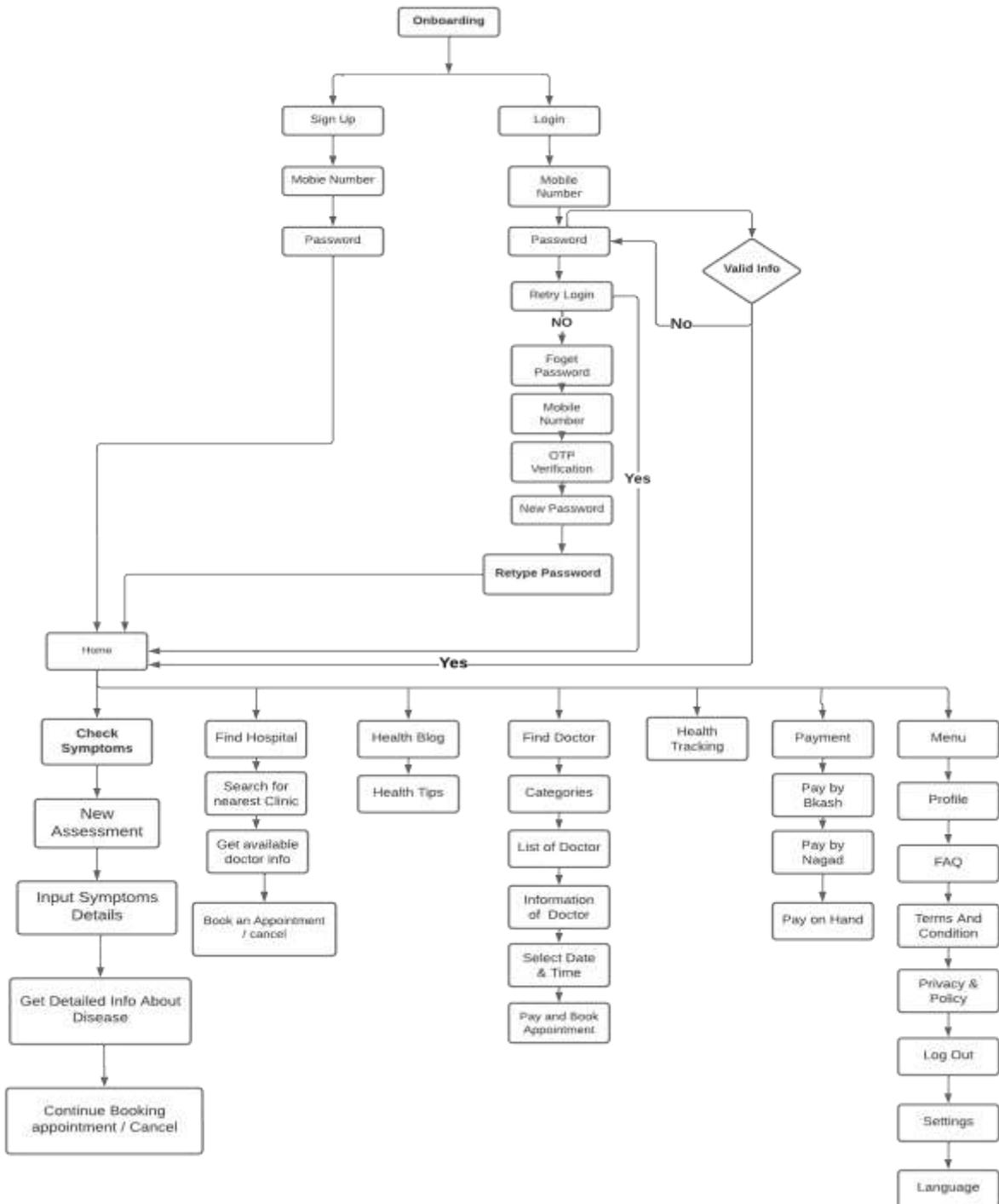


Figure 22: User Flow diagram

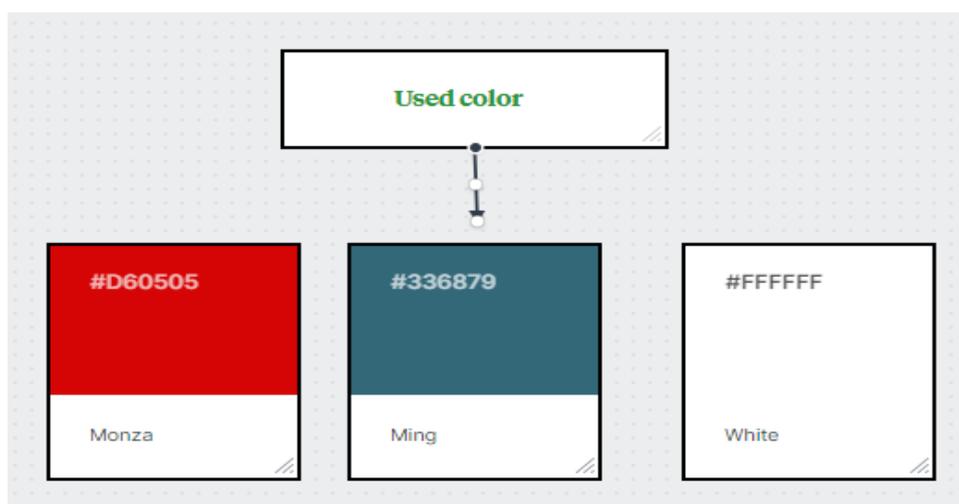
## 9.3 Color

A high-fidelity wireframe serves as a detailed and realistic representation of a project's final design. It is very similar to the actual user interface, which includes elements like typography, colors, images, icons, and interactive components like buttons. High fidelity wireframes often require more time and resources to develop than low- or medium-fidelity wireframes.

These wireframes are typically created after the project has received approval from all stakeholders and is ready for production. They provide a clear visual reference for designers, developers, and other team members to understand the full look and feel of the user interface.

Typically created using digital design tools, high-fidelity wireframes allow for fine detail and an elegant appearance. They provide a level of accuracy that accurately reflects the end product and gives stakeholders a more realistic view of the user experience.

It's important to note that high-fidelity wireframes must be developed after the overall design direction has been solidified and key decisions regarding visuals and interaction patterns have been made. They are best used in projects that have reached an advanced stage and are about to be implemented.



## 9.4 Typography

Typography in UI/UX design refers to the use and arrangement of fonts, typefaces, and text elements within user interfaces to enhance usability, readability, and visual appeal. It plays a crucial role in shaping the user experience and conveying information effectively. Here are some key considerations for typography in UI/UX design:

- **Font Selection:** Choose fonts that align with the brand identity and the overall user experience. Consider legibility, readability, and the emotions or associations that different fonts evoke.
- **Hierarchy and Visual Hierarchy:** Establish a clear hierarchy in the text elements to guide users' attention and understanding. Use font size, weight, and colour to differentiate between headings, subheadings, body text, and other important elements.
- **Readability and Legibility:** Ensure that text is easily readable across different devices and screen sizes. Pay attention to font size, line spacing (leading), and letter spacing (tracking) to enhance legibility and prevent eye strain.
- **Contrast:** Create a visual contrast between text and background to improve readability. Use sufficient contrast in colour, brightness, or opacity to ensure text stands out and remains accessible to users with visual impairments.
- **Alignment and Alignment Consistency:** Maintain consistent alignment of text elements to create visual harmony and improve the overall user experience. Align text elements horizontally and vertically to create a sense of order and organisation.
- **Responsive Typography:** Adapt typography to different screen sizes and responsive layouts. Use responsive font sizes and scaling techniques to ensure readability and usability across various devices.
- **Text Formatting:** Apply appropriate formatting to emphasise key information or improve scanability. Use techniques like bolding, italics, colour, or underlining sparingly and consistently to enhance the user's understanding and interaction with the interface.

- **Accessibility:** Consider the needs of users with visual impairments by adhering to accessibility guidelines. Ensure adequate colour contrast, provide alternative text for images, and use accessible font styles for improved inclusivity.
- **Consistency:** Maintain consistency in typography choices throughout the interface to establish a cohesive and polished user experience. Consistent use of fonts, sizes, and styles contributes to visual harmony and familiarity for users.

By applying thoughtful typography principles in UI/UX design, designers can create interfaces that are visually pleasing, easy to read, and enhance the overall user experience. Effective typography helps users navigate and interact with digital products efficiently, ensuring clear communication and a positive user impression.

**Used Typography for this project:** Poppins & Inter.

Type	Weight	Front-Size
Heading 1	Semi-bold	24 px
Heading 2	bold	18 px
Subtitle 1	Semi-bold	15 px
Subtitle 2	Medium	12 px
Small Text	Regular	12 px

## 9.5 Component & Icon

In UI/UX design, components and icons are key elements that play a crucial role in creating visually appealing and user-friendly interfaces. Here is an overview of the components and icons in UI/UX design:

**Components:** Components are pre-designed elements or modules used to create the user interface. They are reusable and can be combined and arranged in a variety of ways to create consistent and cohesive designs. Components can range from simple elements such as buttons, forms, and cards to more complex components such as navigation menus, sliders, and mods. By using components, designers can maintain consistency, save time, and maintain a unified design system across the application or website.

**Icons:** Icons are visual representations of actions, objects, or concepts that help users understand and interact with the interface. Icons are used to convey information quickly and efficiently, increasing the usability and visual appeal of the design. They are often used to represent objects such as documents, folders, or user profiles, as well as common actions such as saving, deleting, or printing. Icons should be clear, intuitive, and consistent with the overall design style. They can be custom-designed or available from icon libraries to provide a consistent visual language throughout the interface.

Both components and icons play a crucial role in UI/UX design, improving usability, creating visual hierarchy, and enhancing the overall user experience. By using a library of well-designed components and icons, designers can streamline the design process, maintain consistency, and provide users with intuitive and visually appealing interfaces.



## Chapter 10– Design

### 10.1 About Low Fidelity

Low-fidelity wireframing refers to the creation of rough and simplified sketches or mockups of a user interface (UI) design. These wireframes focus on the core structure, layout, and placement of content without rich visuals or elaborate interactions. The importance of Low-fidelity wireframing lies in the following aspects:

**Fast Iteration:** Low-fidelity wireframes allow designers to quickly iterate and experiment with different design ideas. Because it takes less time to create, it's easier to make changes and explore different concepts without investing a lot of effort or resources.

**Conceptualising and Communicating Ideas:** Low-fidelity wireframes help designers and stakeholders visualise and communicate design concepts early in the design process. They facilitate discussions by providing a high-level representation of the user interface and soliciting feedback on the overall structure and content arrangement.

**Focus on functionality and information hierarchy:** Low-fidelity wireframes focus on functional aspects of the design, such as navigation, content flow, and hierarchy. By avoiding distracting visual details and focusing on effectively organising information, designers can provide a clear and intuitive user experience.

**Identify and address issues early:** Low-fidelity wireframes allow designers to spot potential usability issues and design flaws early in the process. By testing and validating the underlying layout and interactions, designers can make necessary adjustments and improvements before investing more time and effort in the low-fidelity design stages.

**Collaboration and Feedback:** Low-fidelity wireframes serve as a valuable collaboration tool. They allow designers to share ideas and gather feedback from stakeholders, developers, and users. Being less pretentious and more abstract, they encourage constructive discussion without visual or aesthetic distraction.

**Cost and Time efficiency:** The creation of low-fidelity wireframes is relatively quick and inexpensive compared to high-end design phases. By focusing on core structure and functionality, they save time and allow designers to explore and improve the overall user experience before committing to detailed design elements.

**Flexibility and Adaptability:** Low-fidelity wireframes provide the flexibility to explore different design aspects and iterate on concepts based on feedback and evolving needs. They allow for easy modifications and adjustments, facilitating an agile design process.

Overall, low-fidelity wireframing is an important step in the UI design process because it helps designers conceptualise ideas, collect feedback, and iterate quickly. By focusing on functionality and avoiding visual distractions, designers can lay a solid foundation for UI design and provide a solid user experience.

## 10.2 Low Fidelity wireframing for my Project

Here are my low-fidelity designs for my project:

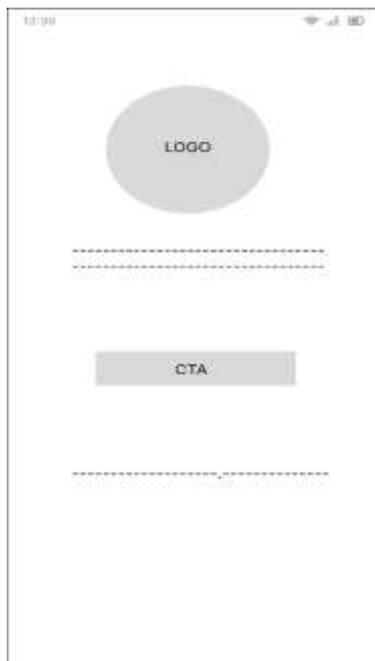


Figure 23: Log In

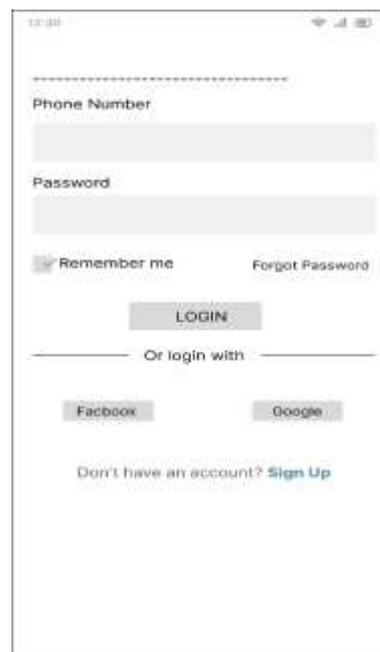


Figure 24: Onboarding

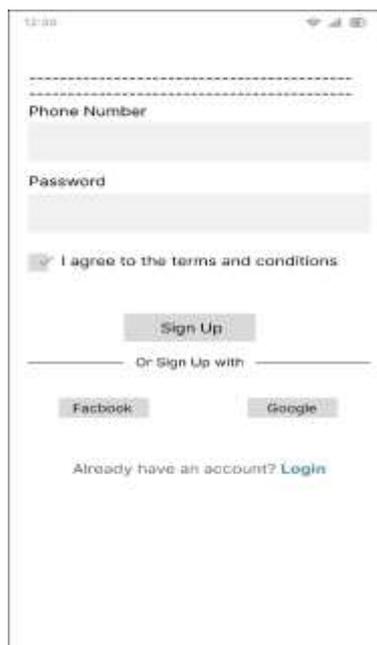


Figure 25: Create Account

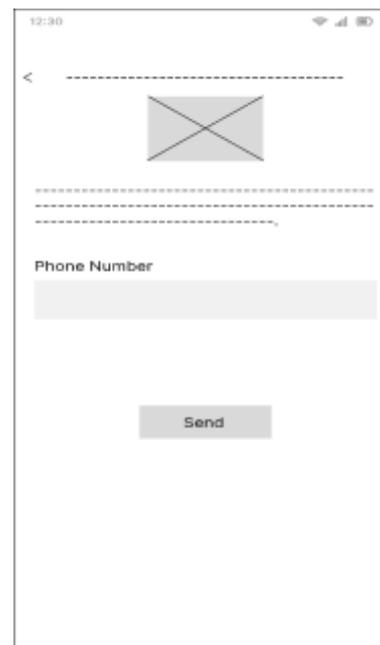


Figure 26: Forget Password

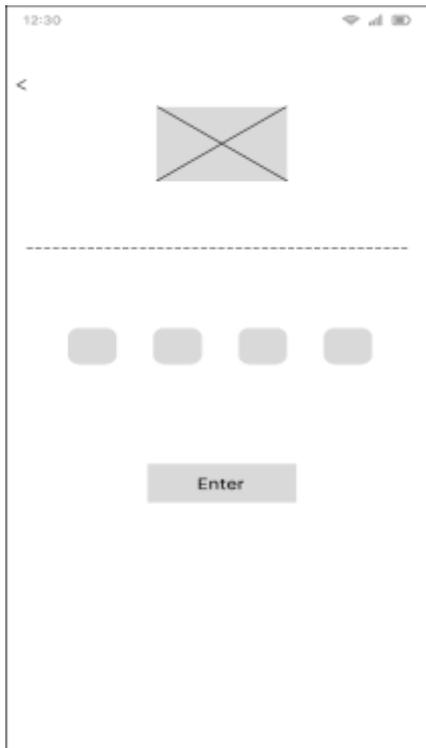


Figure 27: Confirmation Code



Figure 28: Reset Password

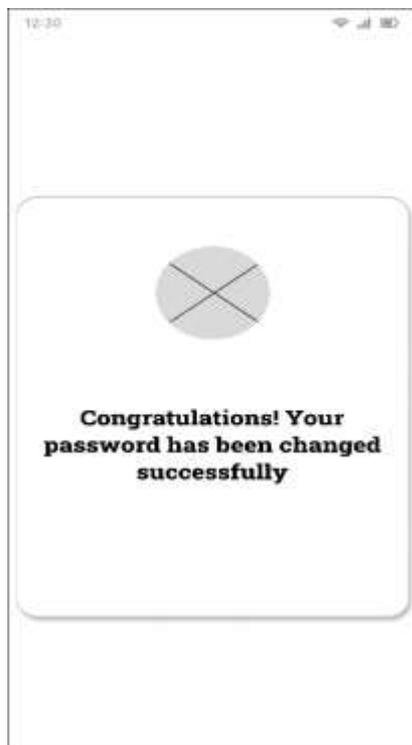


Figure 29: Congratulate for successful login

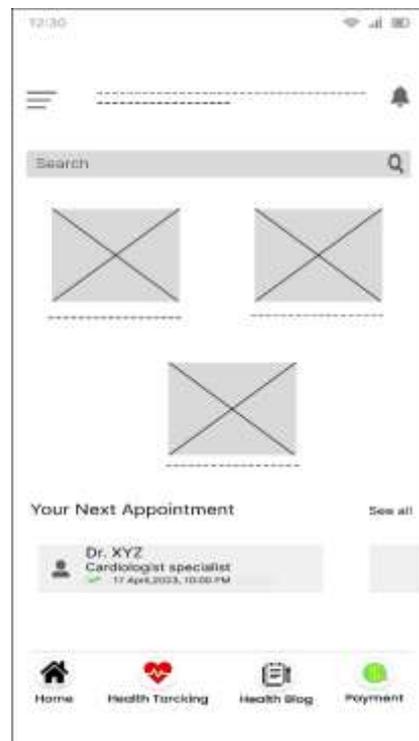


Figure 30: Home

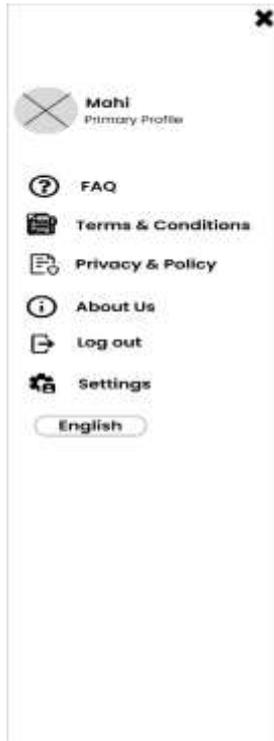


Figure 31: Menu Bar

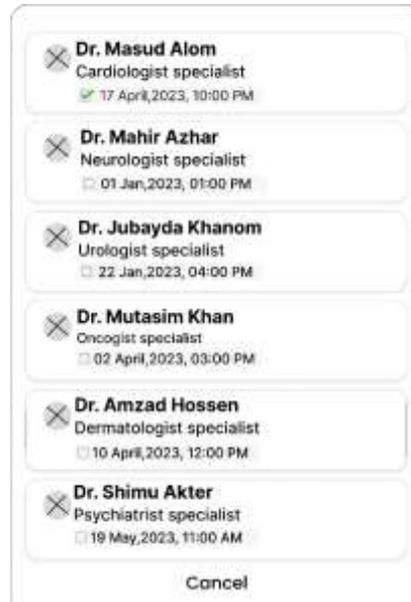


Figure 32: Next Appointment List



Figure 33: Health Tracking

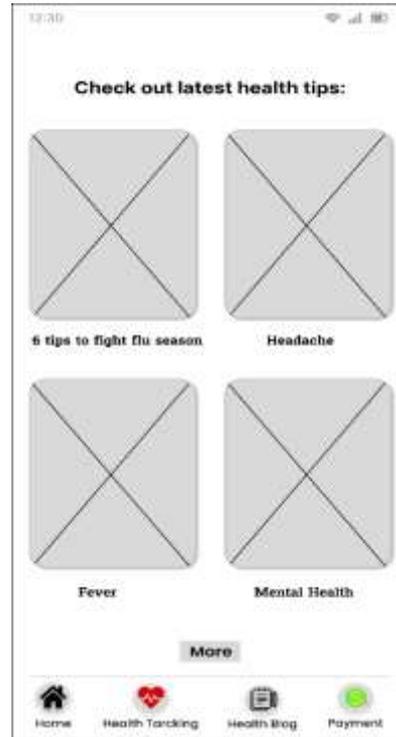


Figure 34: Health Blogs

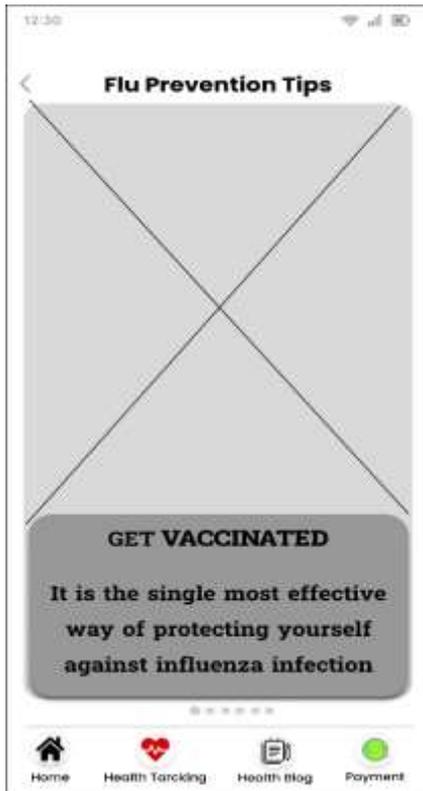


Figure 35: Health Tips

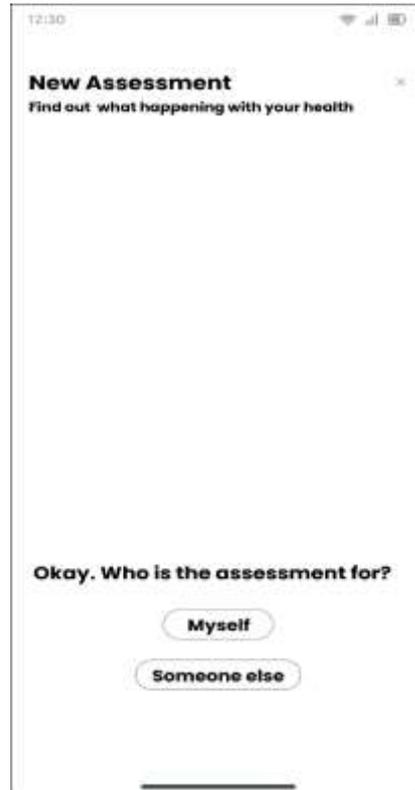


Figure 36: Health Assessment



Figure 37: Health Assessment



Figure 38: Health Assessment

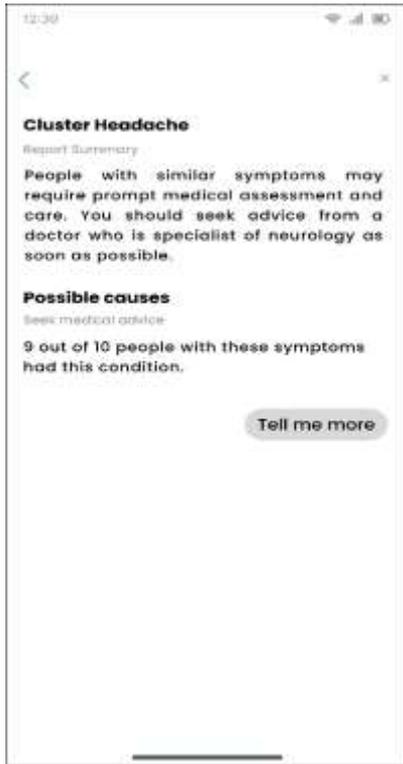


Figure 39: Possible Disease

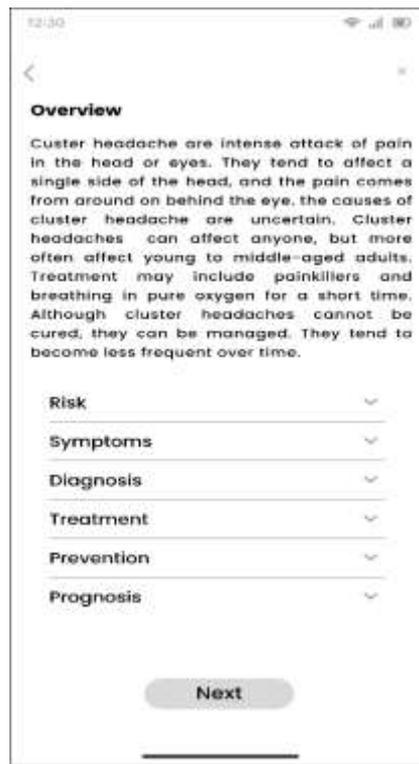


Figure 40: Possible Disease Overview

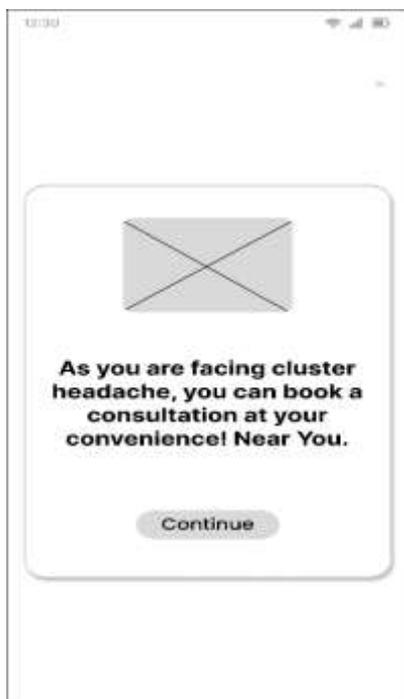


Figure 41: Continue or skip booking

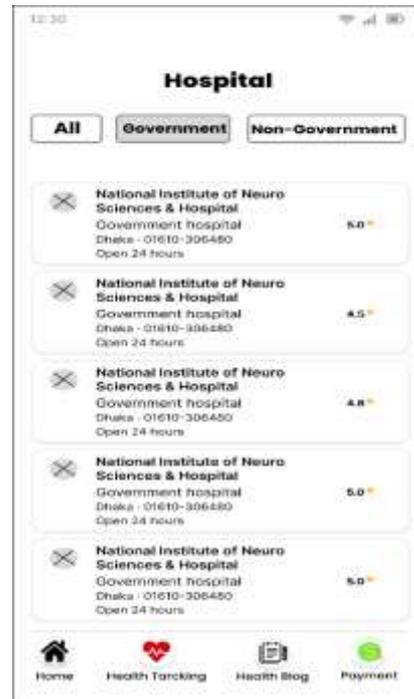


Figure 42: Find Gov. Hospital

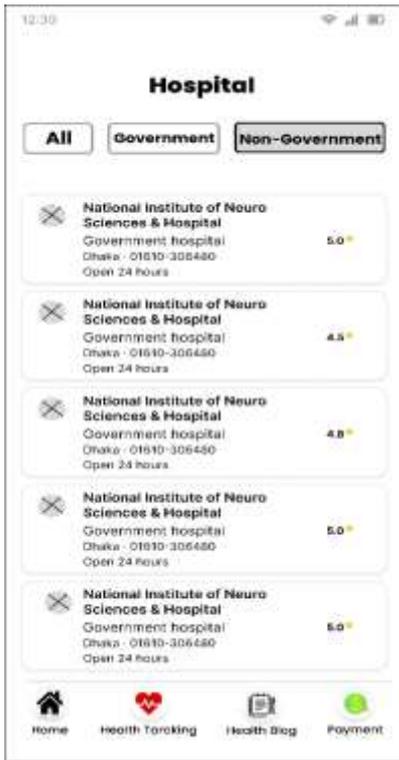


Figure 43: Find Non-Gov. Hospital

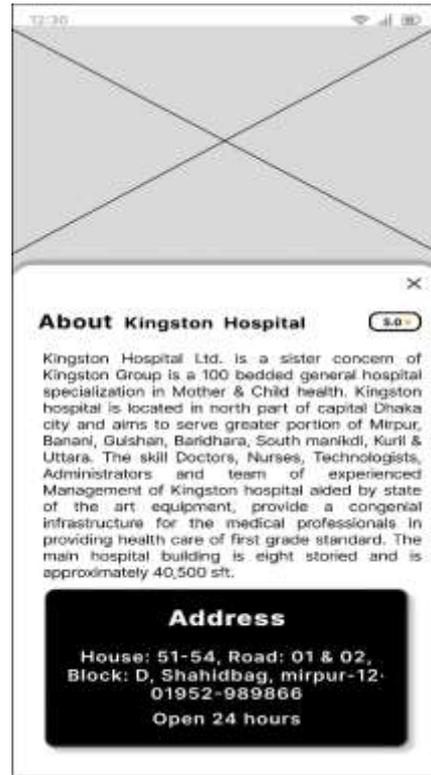


Figure 44: Hospital Details

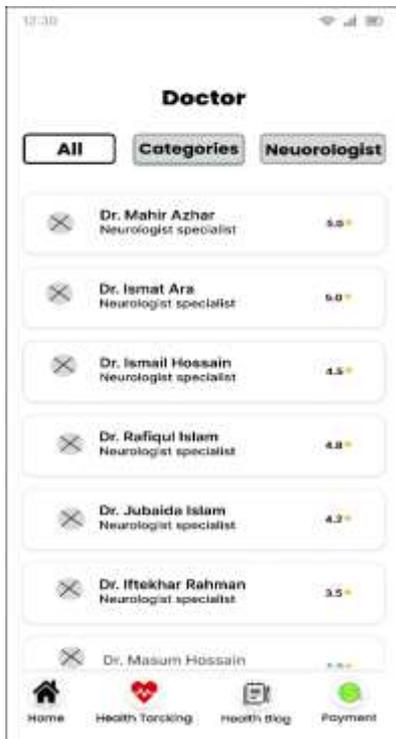


Figure 45: Find Doctor By Categories



Figure 46: Doctors Details



Figure 47: Appointment Booking



Figure 48: Make Payment

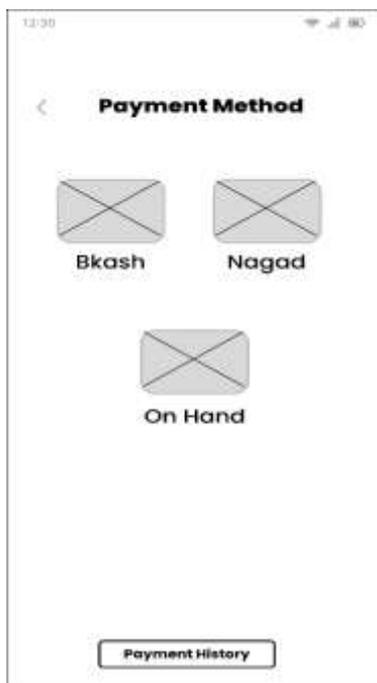


Figure 49: Payment Categories



Figure 50: Bkash Payment



Figure 51: Nagad Payment



Figure 52: Successful Payment



Figure 53 : Payment History

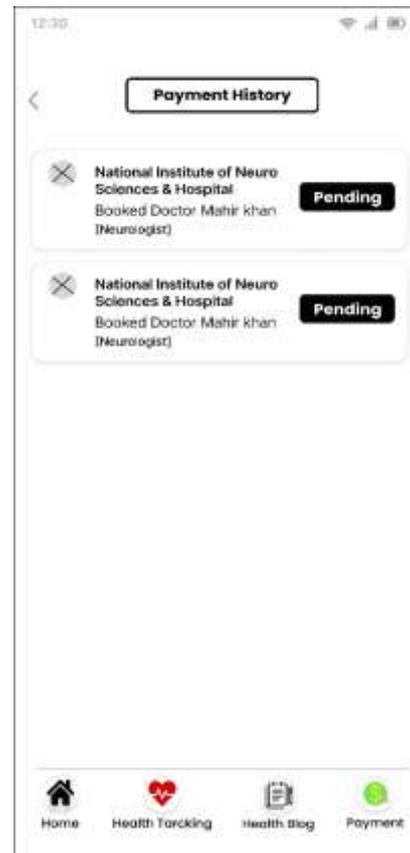


Figure 54: Pending History

## 10.2 About High Fidelity

A visual design prototype in UI/UX is a high-fidelity representation of the user interface that closely resembles the final look and feel of the product. It focuses on the visual aesthetics, branding elements, and overall visual design of the interface. Here are key aspects of creating a visual design prototype in UI/UX:

- ✓ **Visual Elements:** The prototype includes the visual elements that contribute to the interface's appearance, such as color schemes, typography, icons, images, and graphical elements. These elements should align with the brand identity and convey the desired mood or tone.
- ✓ **Layout and Grid System:** The prototype demonstrates the arrangement and composition of various interface components, including headers, navigation bars, content sections, and footers. It follows a grid system to establish consistent alignment and spacing.
- ✓ **Interactive Elements:** The visual design prototype incorporates interactive elements that simulate user interactions and transitions, such as hover effects, button states, dropdown menus, and modal overlays. This helps stakeholders and users understand the interface's functionality and behaviour.
- ✓ **Consistency and Branding:** The prototype ensures consistent visual elements and branding across different screens and pages. This includes maintaining uniformity in colors, typography, iconography, and other design elements throughout the interface.
- ✓ **Responsive Design:** The visual design prototype demonstrates how the interface adapts and responds to different screen sizes and devices. It includes responsive layouts and breakpoints to showcase how the design adjusts dynamically.
- ✓ **Motion and Animation:** If applicable, the prototype can incorporate motion and animation effects to showcase dynamic interactions, transitions, or micro-interactions. This helps bring the interface to life and enhances the user experience.

- ✓ **Usability Considerations:** While the focus is on visual aesthetics, the prototype should also consider usability principles. Elements such as legible typography, appropriate contrast, and intuitive navigation should be incorporated to ensure a user-friendly design.

Creating a visual design prototype allows stakeholders, clients, and users to visualise the final appearance of the user interface. It helps in refining the design, gathering feedback, and ensuring that the visual elements align with the overall UX goals of the project.

### 10.3 High Fidelity wireframing for my Project

Here are my High-fidelity wireframing designs for my project:



Figure 55: Onboarding

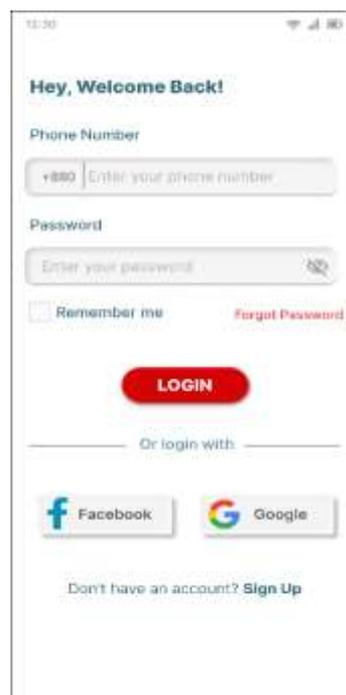


Figure 56: Log In

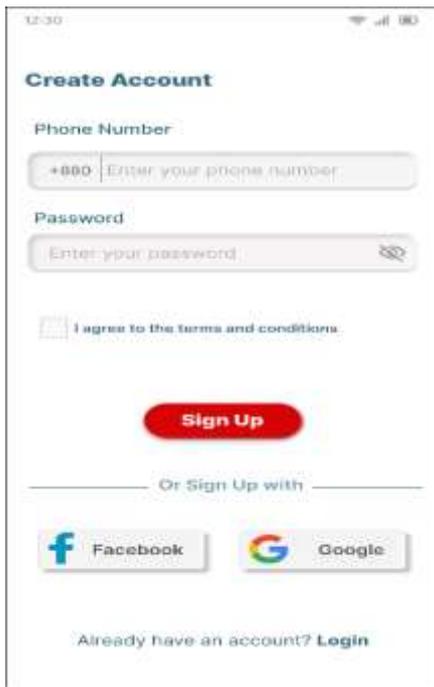


Figure 57: Create Account



Figure 58: Forgot Password



Figure 59: Confirmation Code



Figure 60: Reset Password

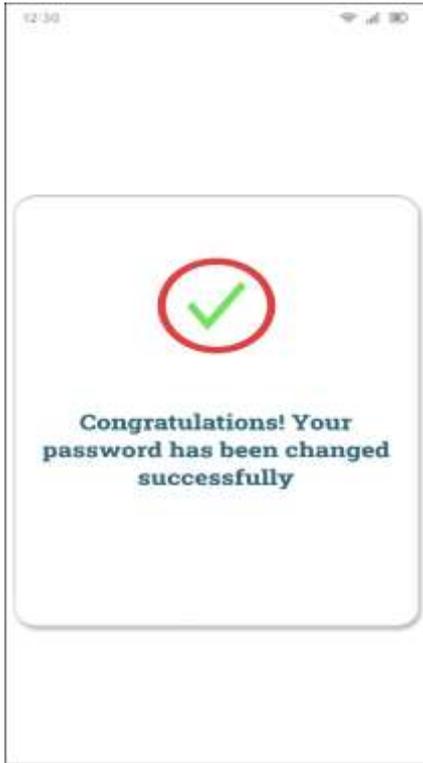


Figure 61: Congratulate for successful login

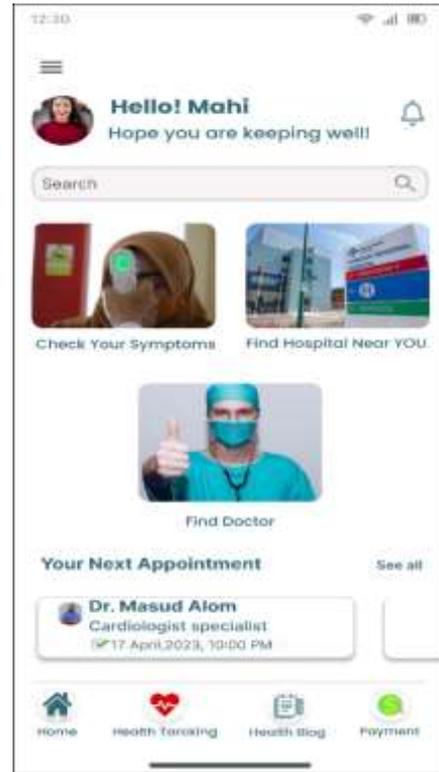


Figure 62: Home

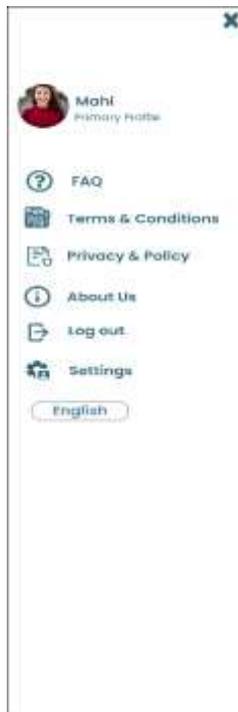


Figure 63: menu Bar



Figure 64: Next appointment list

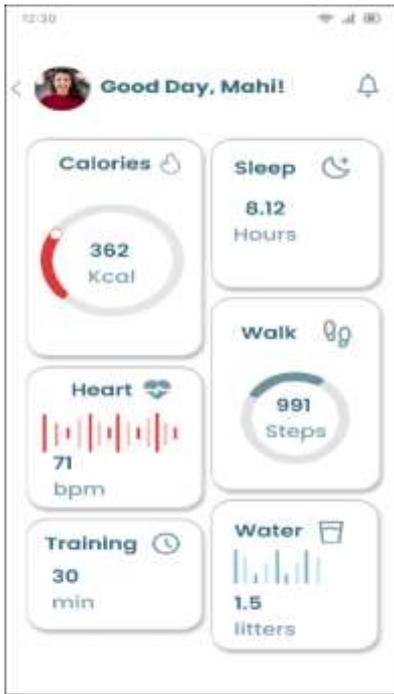


Figure 65: Health Tracking



Figure 66: Health Blogs



Figure 67: Health Blogs



Figure 68: Health Tips



Figure 69: Health Tips

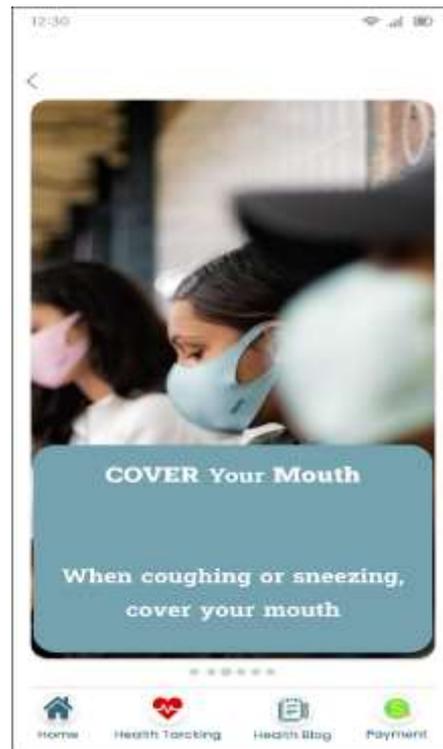


Figure 70: Health Tips

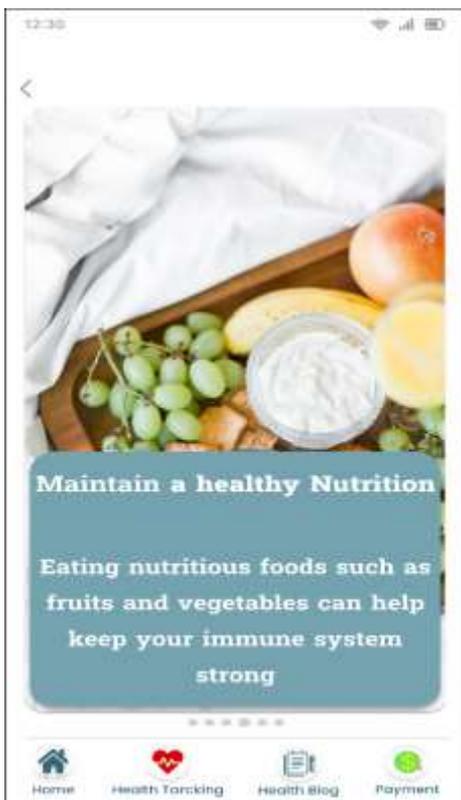


Figure 71: Health Tips



Figure 72: Health Tips



Figure 73: Health Tips

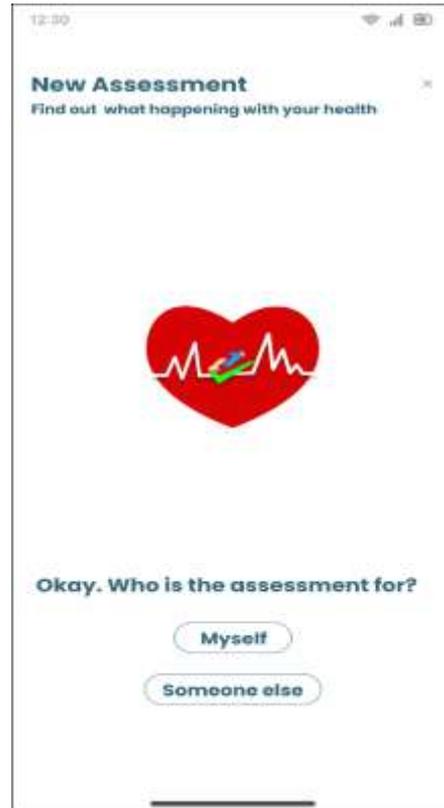


Figure 74: Health Assessment



Figure 75: Health Assessment

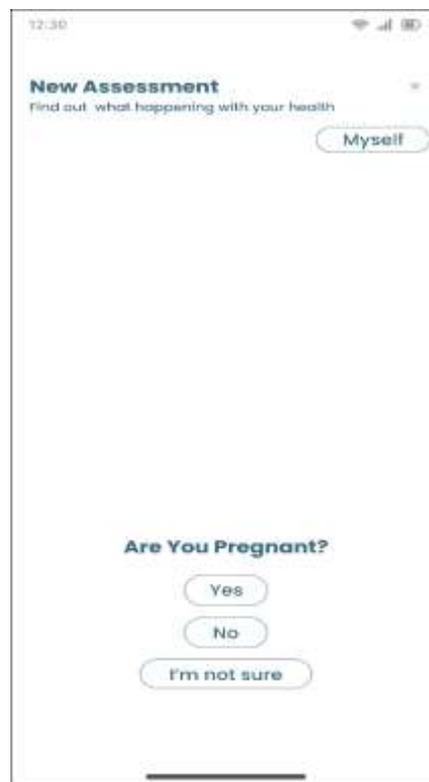


Figure 76: Health Assessment



Figure 77: Possible Disease



Figure 78: Possible Disease Overview

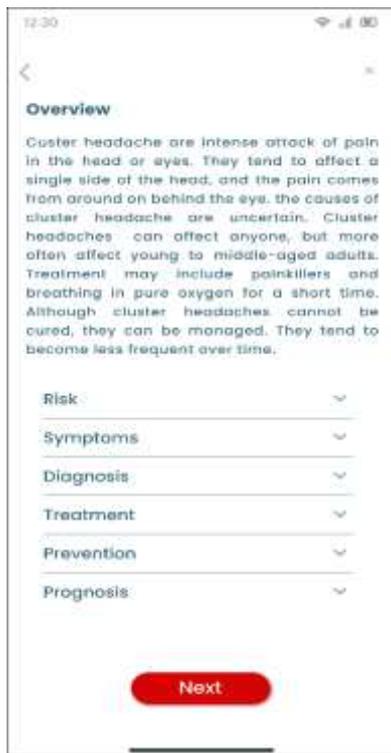


Figure 79: Possible Disease Overview

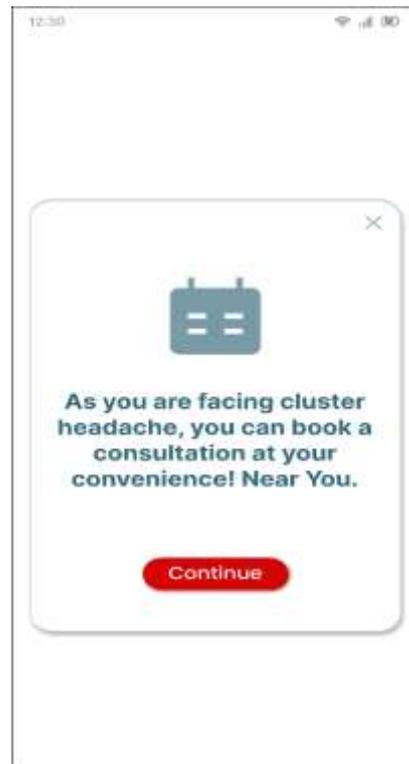


Figure 80: Continue or skip booking

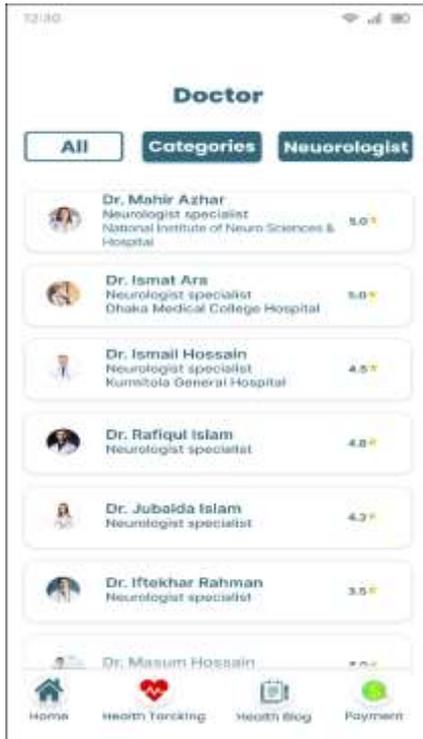


Figure 81: Find Doctor By Categories



Figure 82: Doctors Details



Figure 83: Appointment Booking



Figure 84: Make Payment



Figure 85: Payment method

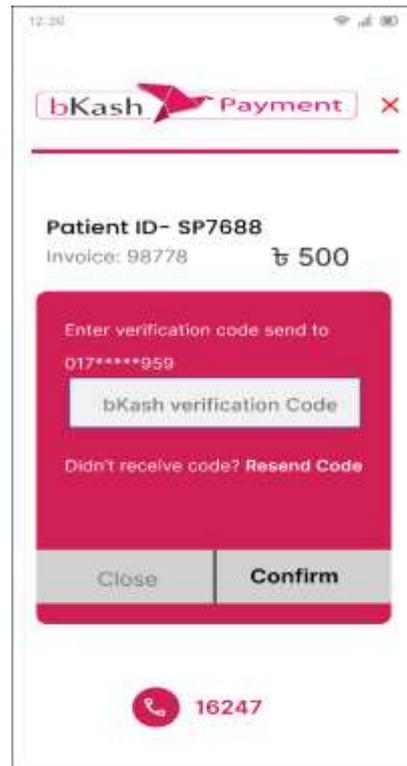


Figure 86: Bkash Payment

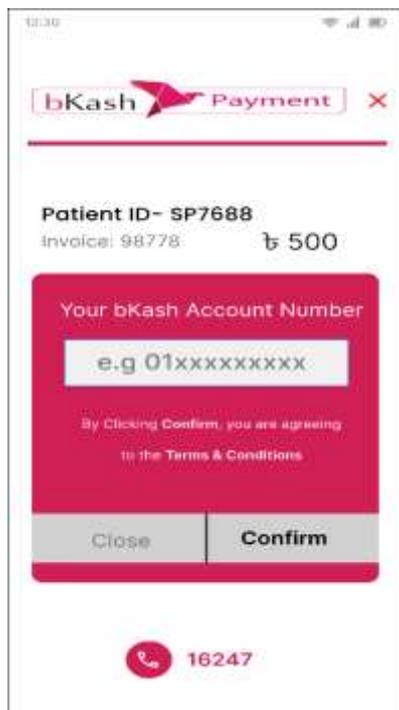


Figure 87: Bkash Payment

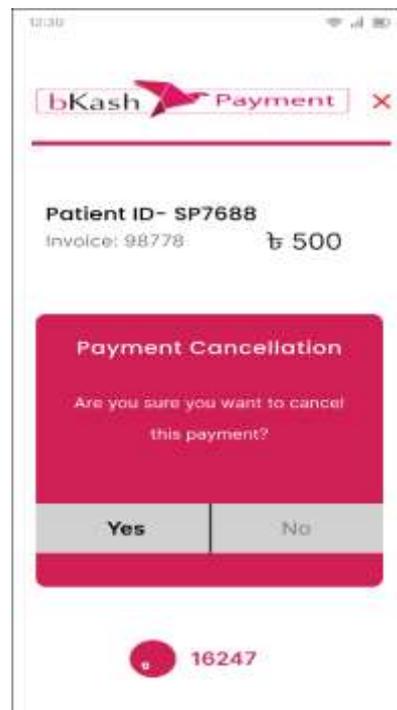


Figure 88: Bkash Payment

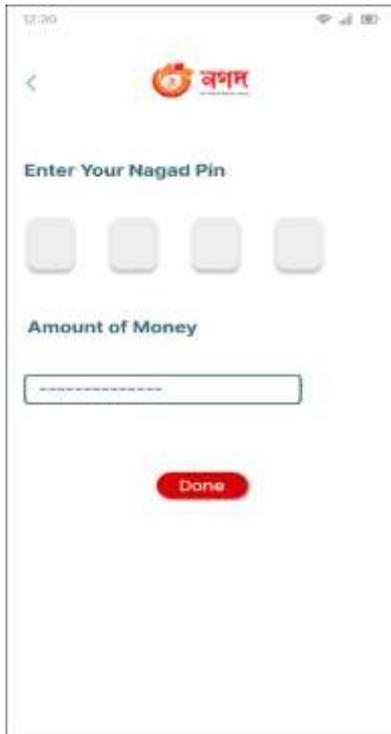


Figure 89: Nagad Payment

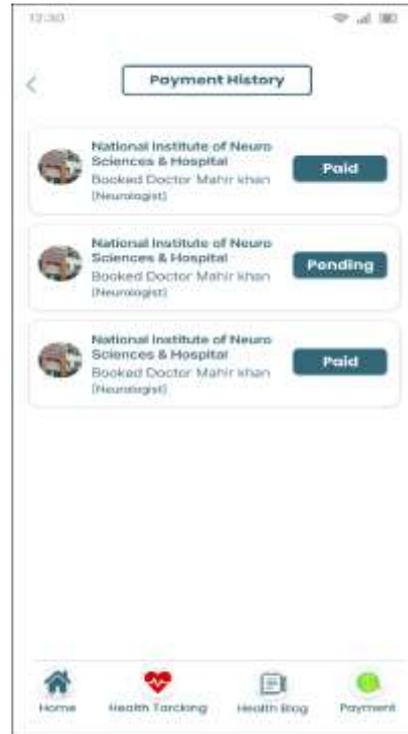


Figure 90: Payment History

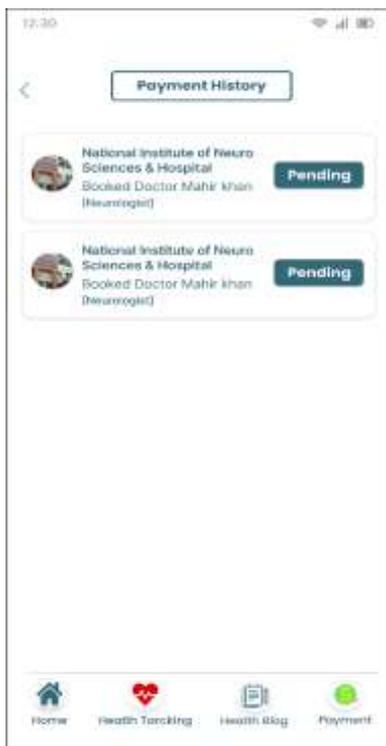


Figure 91: Pending History



Figure 92: Successful Payment



Figure 93: Find Gov. Hospital

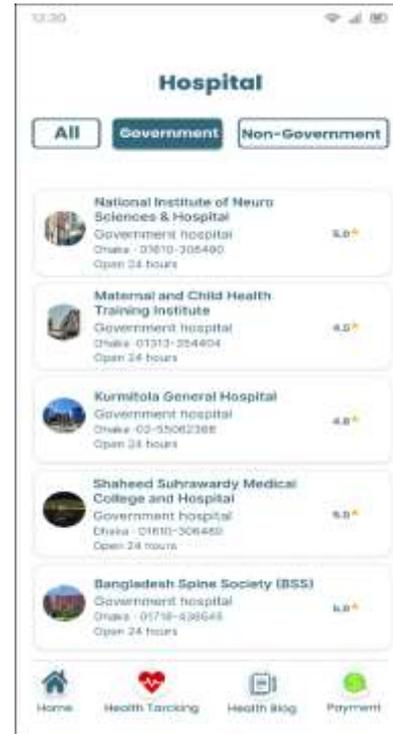


Figure 94: Find Non-Gov. Hospital

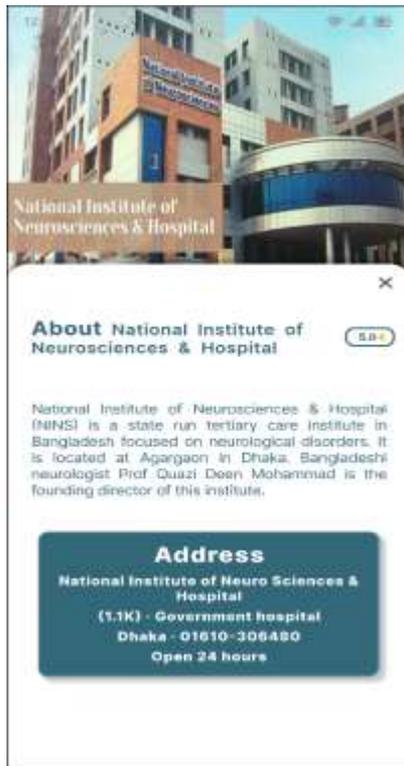


Figure 95: Hospital Details



Figure 96: Hospital Details

## 10.4 Visual Design

Visual design in UI/UX refers to the creative and aesthetic aspects of the user interface that enhance the overall user experience. The focus is on the visual elements such as colors, typography, images, icons, and layout to create an engaging and visually pleasing user interface. Here are key visual design considerations for UI/UX:

**Colors:** Choosing an appropriate color scheme that fits the brand identity and evokes the desired emotions is crucial. Colors can be used to establish hierarchy, highlight important elements, and create visual consistency across the user interface.

**Typography:** It is important to choose appropriate fonts and typography styles that are legible and visually consistent. Typography affects readability, hierarchy, and overall aesthetics. Consider font families, sizes, weights, and spacing to create a cohesive and easy-to-use typography system

**Images:** The effective use of images and visual elements can enhance the user experience. Carefully selected and high-quality images can evoke emotion, support content, and add visual interest. Consider using illustrations, photos, or icons that go with the overall design language.

**Icons:** Icons are visual representations of actions, objects, or concepts. They help users quickly understand the functionality and improve the visual attractiveness of the user interface. Make sure the icons are clear, recognisable, and consistent with the overall design style.

**Layout:** It is crucial to organise the content and elements of the user interface in a logical and visually appealing way. Establishing a grid system and using consistent spacing and alignment creates a cohesive and balanced layout. Consider the placement of navigation, content sections, and interactive elements for an optimal user experience.

**Visual Hierarchy:** Designing with a visual hierarchy draws users' attention and prioritises important elements. Use contrasting sizes, colors, and typography to differentiate between primary, secondary, and tertiary elements. This helps users effectively navigate the user interface and understand the content hierarchy.

**Responsive Design:** Designing interfaces that seamlessly adapt to different screen sizes and devices is crucial in today's multi-device landscape. Consider responsive design principles to ensure a consistent and user-friendly experience across platforms.

**Branding and Consistency:** Be consistent with the brand identity throughout the user interface. The consistent use of colour, typography, images, and other brand elements helps to build a strong brand presence and increases recognition and trust.

Visual design in UI/UX is not just about creating visually appealing interfaces; It also plays an important role in improving usability, providing user guidance, and creating a memorable user experience. It is a combination of art and science, harmoniously integrating aesthetics with the principles of usability to create responsive and intuitive user interfaces.

## 10.5 Prototype

In UI/UX design, a prototype is a concrete representation or interactive model of a product's user interface. It allows designers, stakeholders, and users to experience and interact with the design before it is fully developed. Prototyping plays a crucial role in the design process, facilitating feedback, iteration, and validation of design decisions. Here are the highlights of prototypes in UI/UX:

**Purpose:** Prototypes serve many purposes, including validating design concepts, testing usability, gathering feedback, and communicating design ideas to stakeholders.

**Fidelity:** Prototypes can range from low fidelity (rough sketches or wireframes) to high fidelity (detailed and interactive designs). The choice of loyalty depends on the project's stage, goals, and audience.

**Interactive Experience:** Prototypes allow users to interact with the interface, simulate interactions, and navigate between different screens or functions. This interaction helps evaluate usability, discover potential issues, and gather user feedback.

**Iteration and Refinement:** Prototypes allow designers to iterate the design based on user feedback and insights gathered during usability testing. This iterative process helps improve the user experience and optimise interface design.

**Types of Prototypes:** Prototypes can take different forms, such as paper prototypes, digital wireframes, interactive mockups, and even fully functional simulations. The choice of prototype type depends on the needs of the project, the timeline, and the available resources.

**Usability Testing:** Prototypes are valuable for conducting usability tests with target users. Observing users' interactions with the prototype helps identify pain points, usability issues, and areas for improvement before development begins.

**Communication and Collaboration:** Prototypes serve as a visual and interactive medium to communicate design ideas and concepts with stakeholders, developers, and other team members. They facilitate collaboration and ensure cohesion in the design process.

**Feedback and Validation:** Prototypes allow designers to gather feedback and validate design decisions with stakeholders and users. This feedback helps identify areas for improvement, evaluate user satisfaction, and make informed design choices.

By creating prototypes, designers can bridge the gap between conceptual design and the final product, providing a user-centred approach and minimising risks. Prototyping allows designers to refine and improve the user experience, leading to more effective and successful UI/UX designs.

## Chapter 11– Usability & Testing

### 11.1 Usability

Usability is a critical aspect of UI/UX design that focuses on ensuring that a product or interface is easy to use, efficient, and offers a positive user experience. It covers the design principles, techniques, and methods used to increase the usability and ease of use of a digital product. Here are the usability considerations in UI/UX:

**User-Centred Design:** Usability emphasises a user-centred approach where the design process revolves around understanding user needs, goals, and behaviours. It includes doing user research, collecting feedback, and incorporating user insights throughout the design process.

**Learnability:** Usable designs are intuitive and easy to learn. Users should be able to understand the interface and its functions without extensive instructions or training. Clear and consistent design patterns and familiar interaction rules contribute to learnability.

**Efficiency:** Available interfaces allow users to perform tasks quickly and efficiently. Minimising cognitive load, reducing task completion steps, and providing shortcuts or streamlined workflows increase productivity. Well-designed navigation, search functions, and clear calls to action contribute to task efficiency.

**Effectiveness:** Usable designs enable users to achieve their goals effectively. The interface should support users ability to complete tasks correctly and without errors. Clear instructions, informative feedback, and error prevention or correction mechanisms increase efficiency.

**Accessibility:** Usable designs take accessibility into account to ensure that people with disabilities can access and use the product. This includes considerations for visual impairments, hearing impairments, motor disabilities, and cognitive impairments. Accessibility features such as convenient colour contrast, keyboard navigation, and screen reader compatibility contribute to a more inclusive user experience.

**Consistency and Clarity:** Usable designs maintain consistency in visual elements, interaction patterns, and terminology throughout the interface. Consistency increases predictability, reduces cognitive load, and makes the interface more familiar to users. Clear and concise language, well-organised information, and an appropriate hierarchy contribute to clarity.

**User Feedback and Testing:** Usability testing and collecting user feedback are essential for evaluating and improving the usability of a design. Usability testing involves observing users perform tasks, identifying problem spots, and collecting qualitative and quantitative data. Feedback from users provides insight into areas for improvement and helps refine the design iteratively.

**Continuous Iteration:** Usability is an ongoing process that requires constant iteration and improvement. Designers must take user feedback into account, conduct regular usability assessments, and adapt the design to changing user needs and technological developments.

By prioritising usability in UI/UX design, designers can create user-friendly, efficient, and enjoyable interfaces. Usability directly affects user satisfaction, engagement, and the overall success of a digital product.

## 11.2 Testing

UI/UX testing is the process of evaluating the usability, functionality, and overall user experience of a digital product or digital interface. This includes running various tests to identify potential issues, gather user feedback, and validate design decisions. Here are the key points for testing in UI/UX:

**Usability testing:** Usability testing observes users interacting with the user interface to understand their behaviour, preferences, and challenges. It helps identify usability problems, weaknesses, and areas for improvement. Usability testing can be conducted through moderated sessions, unmoderated remote testing, or eye-tracking studies.

**A/B testing:** A/B testing, also known as split testing, compares two or more versions of a design to determine which performs better in terms of user engagement, conversions, or some other defined metric. A/B testing allows designers to make data-driven decisions by comparing user reactions to different design variations.

**Prototype Testing:** Testing prototypes, whether they are low-fidelity or high-fidelity, helps gather user feedback early in the design process. Users can interact with the prototype, providing insights and uncovering potential issues before investing resources in development.

**Accessibility Testing:** Accessibility testing ensures that the interface meets accessibility standards and is usable for people with disabilities. This includes assistive technology testing, evaluation of colour contrast, keyboard navigation, screen reader compatibility, and other accessibility considerations.

**Performance Tests:** Performance tests evaluate the responsiveness and speed of the interface under various conditions, such as different devices, network speeds, or high user load. It helps identify performance bottlenecks, optimise load times, and ensure a smooth user experience.

**User Feedback and Surveys:** Collecting user feedback through surveys, questionnaires, or feedback forms provides valuable insight into user perceptions, preferences, and satisfaction. User feedback helps to understand user needs and expectations and drives improvements in design.

**Continuous Testing and Iteration:** Testing is an iterative process that should be performed throughout the design and development lifecycle. Regular testing, gathering feedback, and iterating based on the results ensure the design meets user expectations and continually improves over time.

Testing in UI/UX is vital to identifying usability issues, validating design decisions, and ensuring the end product provides a positive user experience. By incorporating testing into the design process, designers can address potential issues, make informed design decisions, and create user interfaces that are intuitive, efficient, and easy to use.

## Chapter 12– Conclusion

### 12.1 Summary of Project

The proposed project aims to address the difficulties faced by patients who, when they have symptoms, do not know what disease they have or which specialist to consult. The solution is to create a platform where patients can enter their symptoms and, based on this information,

get a list of specialists in the respective hospitals. In addition, the platform will contain comprehensive information on visit fees, other costs, illnesses, and symptoms. The goal of this project is to provide patients with the information they need to make informed healthcare decisions and connect them with appropriate experts to make a timely and accurate diagnosis.

## 12.2 Goal of Project

The objectives of the proposed solution are as follows:

- ✓ Provide an easy-to-use platform that helps patients accurately identify potential diseases based on their symptoms.
- ✓ Assist patients in selecting the appropriate specialists to consult for their particular condition, increasing the effectiveness and efficiency of healthcare counselling.
- ✓ Provide comprehensive disease and symptom information to educate users and enable them to make informed decisions about their health.
- ✓ Facilitate transparency and enable patients to make cost-effective healthcare decisions by providing details of physician visit fees and other costs associated with consultations.

## 12.3 My Experience

My experience developing a UI/UX design project was quite positive, although I faced several challenges along the way. Throughout the process, I actively sought help from various sources and maintained regular communication with stakeholders. These joint efforts were instrumental in overcoming the obstacles and ensuring the success of the project.

The framework I used played a crucial role in guiding the design process and facilitating efficient decision-making. It offered a structured approach that allowed design concepts to be systematically explored and refined. Additionally, the framework allowed me to gather valuable insights and gain new ones that significantly impacted the final design.

By adopting this collaborative and iterative approach, I was able to create a user-centric interface that prioritises usability and provides an exceptional user experience. The continuous feedback and involvement of stakeholders ensured that the design met their expectations and was consistent with the project's goals.

Overall, my experience with UI/UX design projects has been characterised by a positive attitude, adaptability, and a commitment to delivering the best possible results. Joint efforts, effective communication, and the use of a credible framework were key to achieving a successful outcome that met the needs and exceeded the expectations of both stakeholders and end users.

## Reference:

- ✓ <https://www.uptech.team/blog/how-do-free-apps-make-money#:~:text=Free%20apps%20are%20monetized%20through,%2C%20sponsorship%2C%20and%20affiliate%20marketing>
- ✓ <https://www.uxdesigninstitute.com/blog/what-are-ux-personas/#:~:text=A%20UX%20persona%20is%20a,and%20make%20design%20decisions%20accordingly.>
- ✓ <https://blog.hubspot.com/>
- ✓ <https://bootcamp.uxdesign.cc/>
- ✓ <https://uxplanet.org/the-beginners-guide-to-user-flow-in-ux-design-2022-7a0ab8c7d0bd>
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- ✓ <https://sebaghar.com/>
- ✓ <https://doctime.com.bd/>
- ✓ <https://play.google.com/store/apps/details?id=com.itmedicus.patientaid&hl=en&gl=US>

## Appendices

### User Guide

A user guide in UI/UX design provides short and comprehensive instructions to help users understand and navigate how to interact with a digital product or digital interface. It serves as a reference for users to effectively use the features and functions of the design. The user guide usually includes clear explanations, visual aids, and step-by-step instructions to ensure a smooth and user-friendly experience. By following the user guide, users can maximise their understanding and proficiency in using the interface, resulting in a positive user experience.

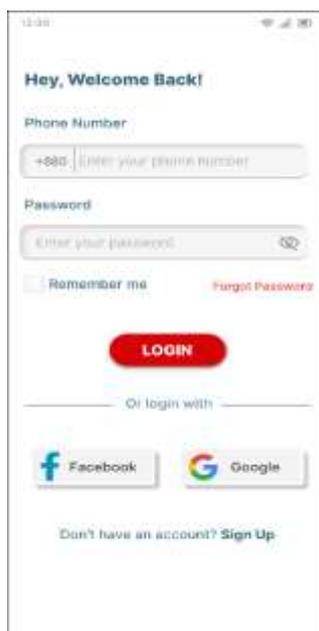


Figure 97: login page

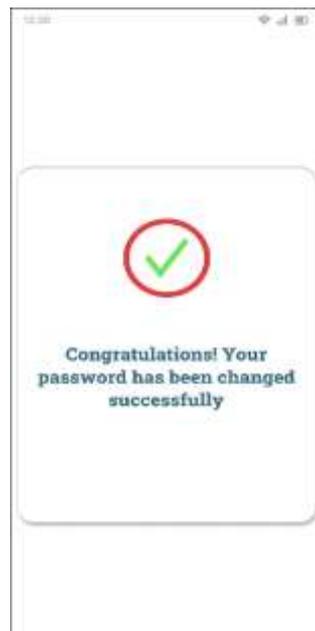


Figure 98: Changed pass Successfully

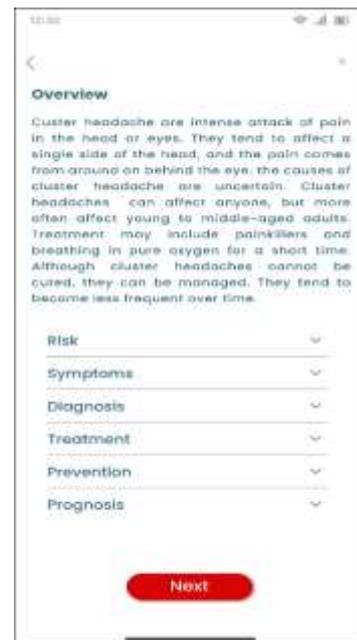


Figure 99: Disease Details



Figure 100: Book Appointment



Figure 101: Select Date & Time

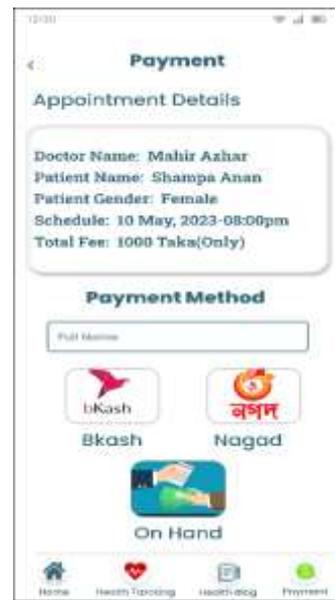


Figure 102: Payment

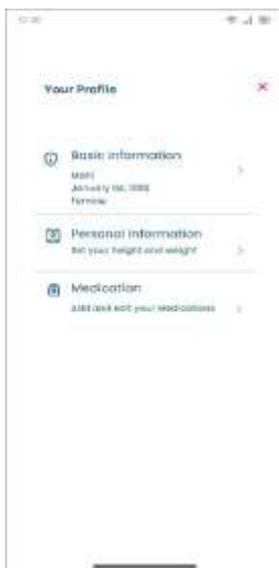


Figure 103: Profile



Figure 104: Basic Info

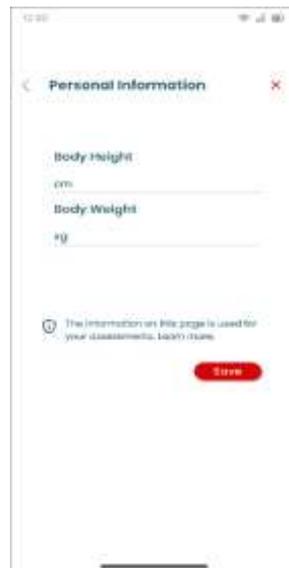


Figure 105: Personal Info



Figure 106: Medication Info

Figma Design:

<https://www.figma.com/proto/j5SQTCSufYhO4NjE6yffAm/Healthcare-symptoms-checker-app?page-id=0%3A1&type=design&node-id=246-2218&viewport=-273%2C-270%2C0.55&t=TKq1fOl81zu2hK7C-1&scaling=scale-down&starting-point-node-id=246%3A2193&show-proto-sidebar=1&mode=design>

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