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# PROJECT TITLE: (HAPPY HOME) WEBAPP

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# 1. Introduction:

Nepal's growing elderly population faces increasing challenges in accessing adequate home care services. Home health care can include medical treatment such as wound care and/or non-medical care such as helping with bathing or meal preparation, depending on the requirements of the patient. (Haupt, 2023)



*Figure 1:image of people caring for older people in their homes. (Lazell, n.d.)*

Happy Home is a valuable resource for families who are looking for a safe, reliable, and affordable way to provide care for their elderly loved ones. The platform is designed to make healthcare more accessible and hassle-free, so you can focus on your other responsibilities while ensuring that your loved ones receive the care they deserve. As a result, there is a growing need for home care apps that connect families with professional caregivers and provide personalized care in the comfort of their own homes.

Happy Home health care facilities are for those who require assistance with health care for chronic diseases but do not require hospitalization. A change in conditions could cause the choice to move to a nursing home. (Bakerjian, n.d.)

## 1.1 Problem Statement:

According to Nepal's 2021 National Census, there are an estimated 3,255,295 persons aged 65 and above, accounting for 11.3% of the total population. (Nepal Ststistics office, 2021)

The growing elderly population is creating a shortage of caregivers, leaving many elderly individuals without the care they need. This lack of care can lead to adverse health outcomes, increased stress for family caregivers, and social isolation. Juggling between work and taking care of loved ones, especially elderly parents is being really tough and stressful for many people. Recent numbers show that more and more individuals are facing this challenge. Many elderly people are not receiving 24-hour care, and in many situations, elderly people have died because hardly anybody takes care for them.

## 1.2 Solution:

Happy Home, a comprehensive and user-friendly platform that connects families with licensed nurses for personalized in-home care, solves the issues of caring for elderly loved ones. In-home lab services eliminate the need for extensive clinic visits, and social connections promote mental and emotional well-being. This solution can improve health outcomes, reduce stress for family caregivers, combat loneliness, and provide convenient and accessible care, significantly enhancing the quality of life for elderly individuals and their families. This service solves the pressure of juggling job and caregiving duties, while in-home lab services minimize the need for lengthy clinic trips. Also, Happy Home's user-friendly platform simplifies the process of locating and managing caregiving needs by providing quick access to caregiving services. Happy Home's approach to elder care requires to create social connection while making sure that all elderly people receive the caring and skilled care they deserve.

## 2. Aims and Objectives:

### 2.1 Aims:

Happy Home offers a user-friendly platform that connects families, healthcare workers, and caregivers to provide personalized in-home care for elderly individuals, enhancing their well-being and supporting working caregivers.

### 2.2 Objectives:

- Assure that the Happy Home platform is useful to families, healthcare workers, and caregivers.
- Enhance personalized in-home care relations between families and licensed nurses.
- Improve overall well-being by providing thorough, individualized care to the old age.
- Reduce stress for working family members by offering consistent caregiving assistance.
- Reduce clinic visits by taking benefit of the platform's in-home lab services.
- Happy Home's user-friendly features simplify caring management.
- Develop social relationships within the caregiver's community.
- Ensuring that all older people receive high-quality, caring, and skilled care.

## 3. Expected Outcomes and Deliverables:

This software will be able achieve the following tasks after successful development:

- User Registration: Clear instructions and an easy signup procedure.
- Appointment Scheduling: Users can schedule appointments with nurses for specific caregiving services or lab tests.
- Notifications and Emergency Alert: Implement a real-time notification system to keep caregivers and families informed about appointments, care updates, and critical emergencies, enhancing the overall safety and responsiveness of the platform.
- Care Plan Management: Caregivers and nurses can create and manage personalized care plans for each patient.
- User Ratings and Reviews: Users can rate and leave reviews for nurses and caregivers.
- location and maps: Real-Time Location Tracking: Users can track the real-time location of caregivers, providing transparency and peace of mind.
- Nursing Career Rewards: Users can reward nurses for their great performance by earning and exchanging points for rewards.
- Payment Options: Provides comfort, financial flexibility, and improved service access by simplifying payments using a number of methods (Khalti, Bank transfer).

## 4. Project Risk, Threats, and Contingency Plan:

A contingency plan is one part of project risk management. Other parts of project risk management include creating a risk log and assigning owners to risks. To learn more about project risk management, see this comprehensive guide on risk management planning. (Eby, 2023)

| SN | Risk Description | Probability | Impact | Contingency Plans |
|----|------------------|-------------|--------|-------------------|
| 1 | Breach of user personal information. | Low | High | Store personal information in local storage. |
| 2 | OS crash | Low | High | Back up data in the cloud. |
| 3 | Cost Risks | Medium | Medium | Keep track of the project's costs by regularly reviewing the budget and negotiating with vendors to get better deals. |
| 4 | Data loss due to human error or system glitches | Medium | High | Implement strict data integrity checks and validation procedures to prevent data loss. |
| 5 | Hardware failure | Medium | High | Implement regular maintenance, redundancy and backups. |
| 6 | Lack of Scalability for Growing User Base | Medium | High | Build a flexible system, leverage cloud resources, and monitor user growth to scale your app seamlessly. |

*Table 1: Table of Showing Project Risk, Threats, and Contingency Plan of Happy Home*

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# 5. Methodologies

## 5.1 Considered Methodology

### 5.1.1 Prototype Methodology

The prototyping model is a systems development process in which a prototype is produced, tested, and then modified until an acceptable output is obtained from which the entire system or product can be developed. This technique works best in situations where not all of the project needs are known in advance. It is a collaborative, iterative, trial-and-error process between developers and users. (Lewis, n.d.)
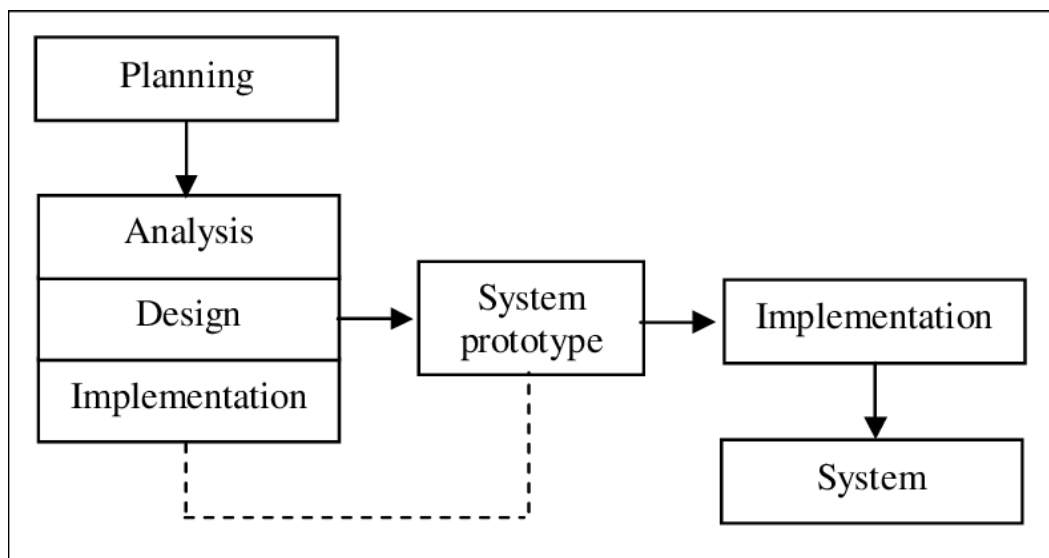
*Figure 2: Prototype Methodology*

### 5.1.2 Rapid Application Development (RAD)

Rapid Application Development (RAD) is a popular, Agile based development methodology that focuses attention on collaboration, speed, and flexibility. Therefore, many organizations successfully use RAD to improve their development processes and deliver high-quality software in less time. (Stec, 2023)
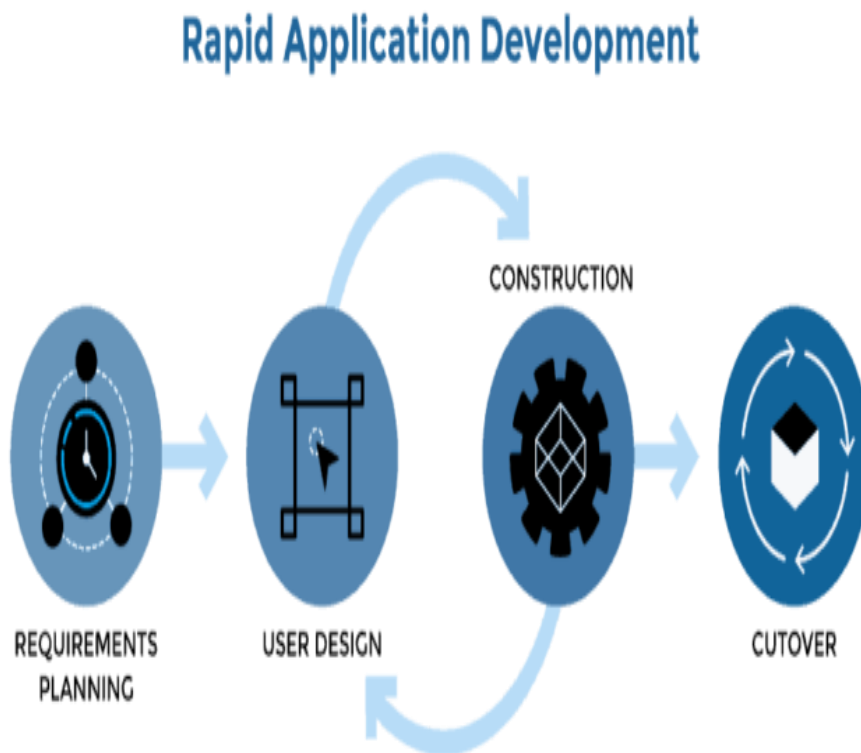


*Figure 3:Rapid Application Development (plutora, 2020)*

## 5.2    Selected Methodology:

## Scrum:

In this project, I have chosen to use Scrum technique, which is based on Agile. Scrum is a method of managing product development and other knowledge work. Scrum is practical in the sense that it allows teams to form an opinion about how they believe something should operate, test it, reflect on the experience, and make any improvements. That is, if the framework is used correctly. Scrum is organized in such a way that teams can include practices from other frameworks when they make sense in the context of the team. (Agile Alliance, 2023)
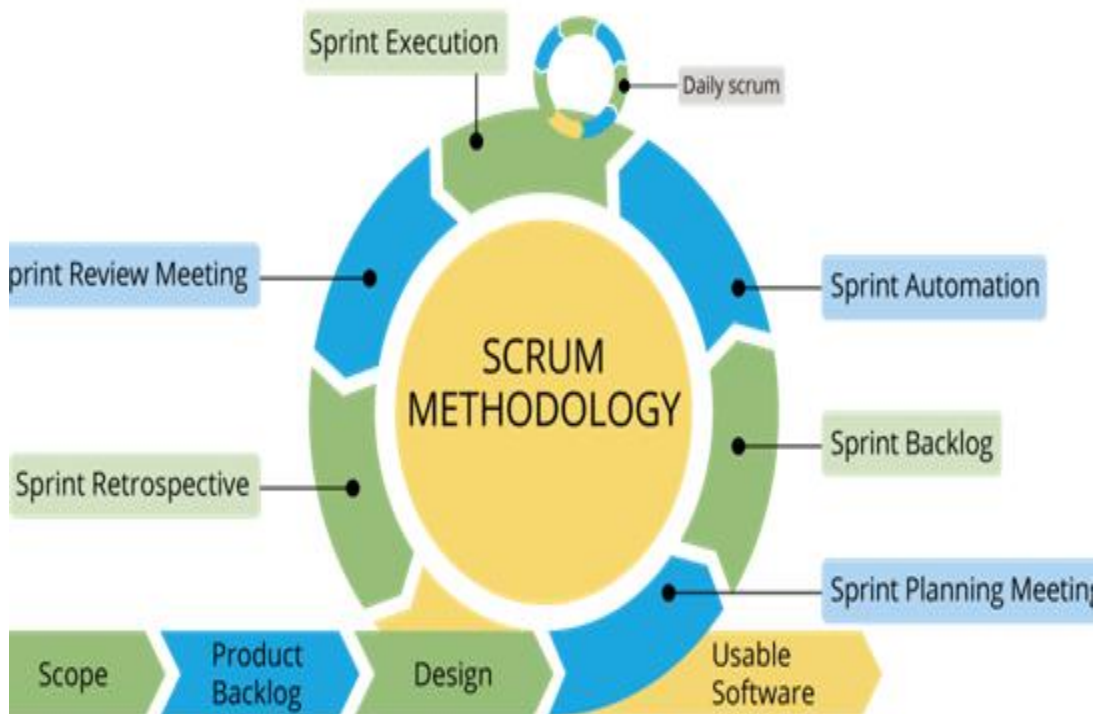


*Figure 4: Scrum Methodology*

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**The following are the reasons for using the scrum methodology:**

• Scrum is simple to learn and apply in my project.

• Scrum is an ongoing improvement method that allows us to upgrade the system based on client requirements.

• Scrum helps in the system's acceptance of change.

• Setting a sprint target will make it easier for me to focus on my objectives.

• It will assist me in keeping track of my project's development and condition.

• It will assist me in tracking bugs in the early stages of my project.

• It will assist me in breaking down my assignment into smaller segments so that I can work efficiently.

**The following are the reasons for not choosing other methodology:**

- Limited Adaptability:

Significant changes in the middle of a project may be difficult for RAD to accommodate.

- Initial Client Involvement is High:

RAD requires strong client interaction from the start of the project.

- Communication Difficulties:

If the prototype does not exactly show the planned end result, prototyping approaches might lead to miscommunication.

- Resources Intensity:

Prototyping approaches can be resource-intensive, which may cause problems in projects that prioritize efficiency and resource efficiency.

## 6. Resource Requirement

The Requirement necessary for developing this web application are:

6.1    Software Requirements:

- Text Editor: Visual Studio Code (VS-Code)

- Programming Languages: React for front-end development and Django for back-end development.

- Database: MySQL for data storage and management

- Version Control: GitHub for code version control and collaboration

- Design Tool: Figma for creating user interface (UI) designs.

- Digital Wallet API: Integration with a digital wallet API for secure and convenient payment processing.

6.2    Hardware Requirements:

- Mobile Devices with sufficient processing power and RAM.

- Adequate free storage space on the mobile device.

- Reliable internet access,

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# 7 Work Breakdown Structure

A work breakdown structure (WBS) is a project management technique that uses a step-by-step approach to finish huge projects with many moving parts. A work breakdown structure (WBS) can integrate scope, cost, and deliverables into a single tool by breaking down the project into smaller components. (Christine Organ, n.d.)
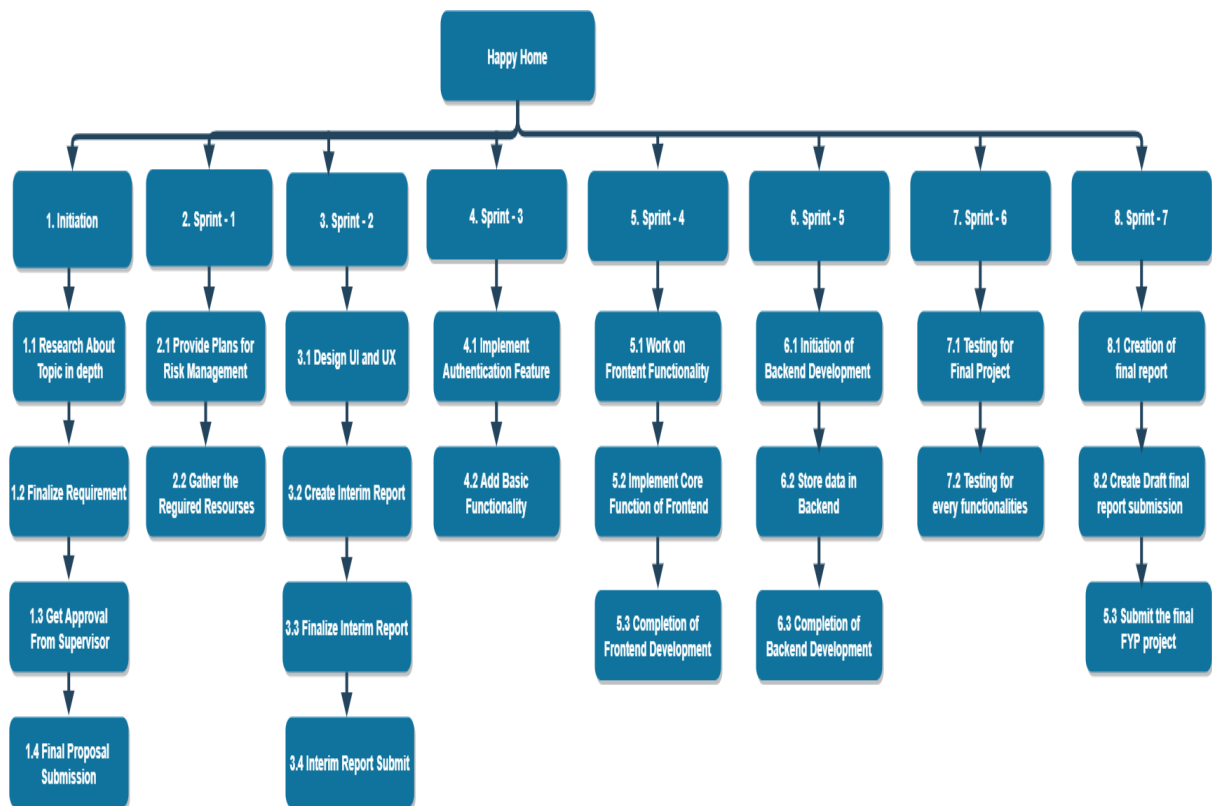


*Figure 5:Work Breakdown Structure of Happy Home*

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## 8 Milestone:

A project milestone is a project planning tool that is used to represent a certain point in a project's timeline. Project milestones can indicate the beginning and end of a project, the completion of a key phase of work, or anything else important in a project, such as the production of project deliverables. Milestones help project teams coordinate their efforts by making sure that everyone understands the project's objectives and the actions that must be performed to attain them. (Tristancho, 2023)
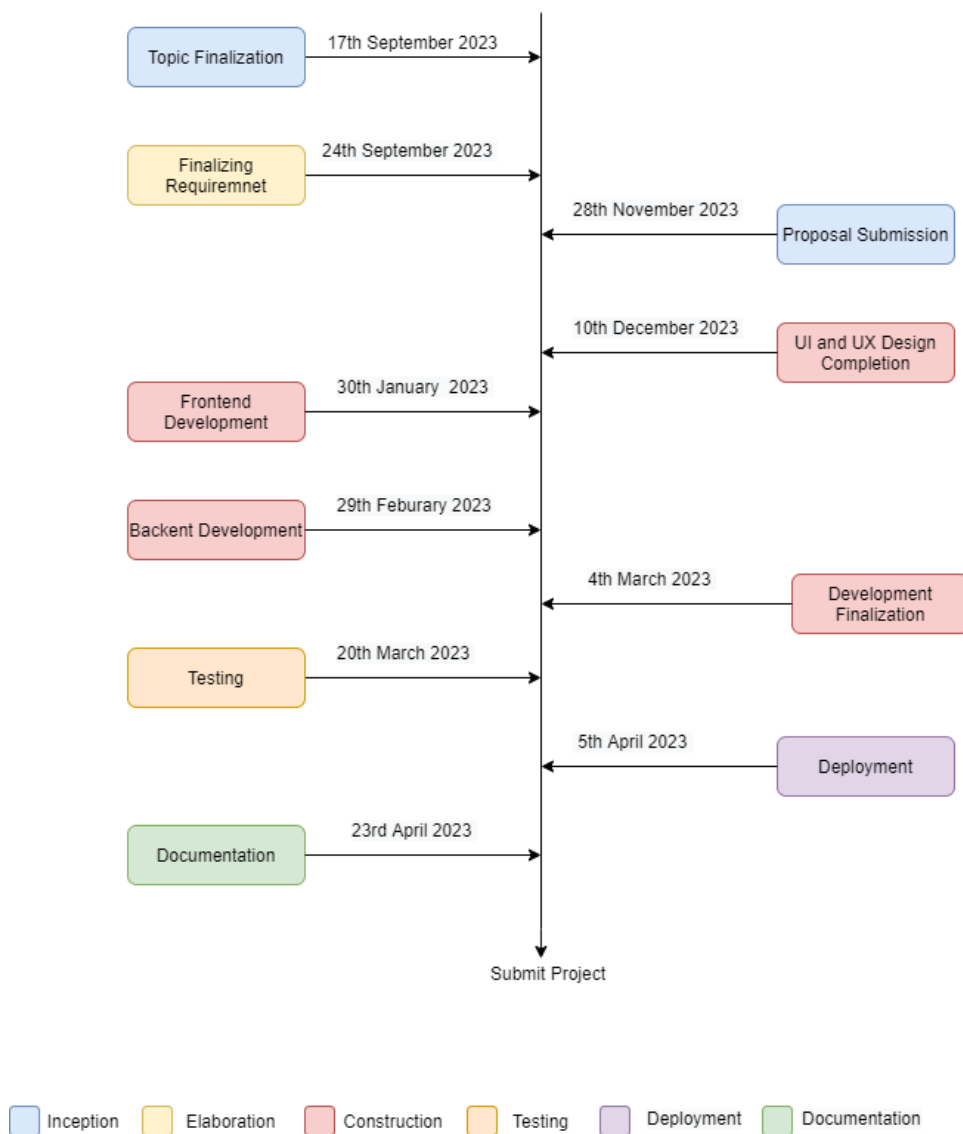


*Figure 6: Milestone of Happy Home*

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# 9  Gantt Chart

A Gantt chart is a project management tool that aids in the planning and scheduling of projects of all kinds; they are especially effective for project visualisation. A Gantt chart is a graphical representation of activities against time that aids project managers in monitoring progress. Gantt charts are primarily task scheduling tools: project management timelines and tasks are translated into horizontal bars (also known as Gantt bars) to create a bar chart. (Naybour, n.d.)
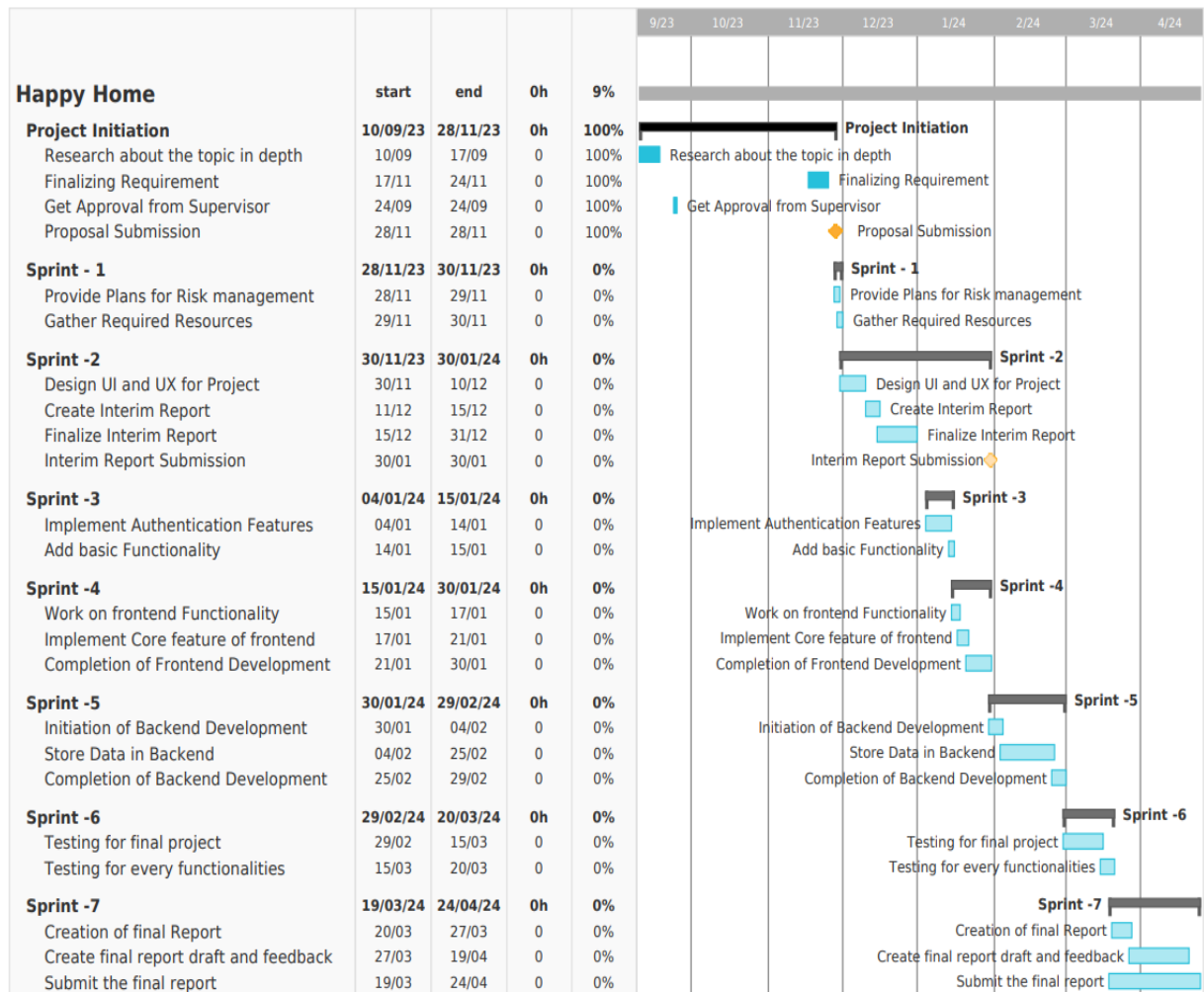
| Happy Home | start | end | 0h | 9% |
|---|---|---|---|---|
| **Project Initiation** | 10/09/23 | 28/11/23 | 0h | 100% |
| Research about the topic in depth | 10/09 | 17/09 | 0 | 100% |
| Finalizing Requirement | 17/11 | 24/11 | 0 | 100% |
| Get Approval from Supervisor | 24/09 | 24/09 | 0 | 100% |
| Proposal Submission | 28/11 | 28/11 | 0 | 100% |
| **Sprint - 1** | 28/11/23 | 30/11/23 | 0h | 0% |
| Provide Plans for Risk management | 28/11 | 29/11 | 0 | 0% |
| Gather Required Resources | 29/11 | 30/11 | 0 | 0% |
| **Sprint -2** | 30/11/23 | 30/01/24 | 0h | 0% |
| Design UI and UX for Project | 30/11 | 10/12 | 0 | 0% |
| Create Interim Report | 11/12 | 15/12 | 0 | 0% |
| Finalize Interim Report | 15/12 | 31/12 | 0 | 0% |
| Interim Report Submission | 30/01 | 30/01 | 0 | 0% |
| **Sprint -3** | 04/01/24 | 15/01/24 | 0h | 0% |
| Implement Authentication Features | 04/01 | 14/01 | 0 | 0% |
| Add basic Functionality | 14/01 | 15/01 | 0 | 0% |
| **Sprint -4** | 15/01/24 | 30/01/24 | 0h | 0% |
| Work on frontend Functionality | 15/01 | 17/01 | 0 | 0% |
| Implement Core feature of frontend | 17/01 | 21/01 | 0 | 0% |
| Completion of Frontend Development | 21/01 | 30/01 | 0 | 0% |
| **Sprint -5** | 30/01/24 | 29/02/24 | 0h | 0% |
| Initiation of Backend Development | 30/01 | 04/02 | 0 | 0% |
| Store Data in Backend | 04/02 | 25/02 | 0 | 0% |
| Completion of Backend Development | 25/02 | 29/02 | 0 | 0% |
| **Sprint -6** | 29/02/24 | 20/03/24 | 0h | 0% |
| Testing for final project | 29/02 | 15/03 | 0 | 0% |
| Testing for every functionalities | 15/03 | 20/03 | 0 | 0% |
| **Sprint -7** | 19/03/24 | 24/04/24 | 0h | 0% |
| Creation of final Report | 20/03 | 27/03 | 0 | 0% |
| Create final report draft and feedback | 27/03 | 19/04 | 0 | 0% |
| Submit the final report | 19/03 | 24/04 | 0 | 0% |

*Figure 7: Gantt Chart of Happy Home*

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# 10 Conclusion:

The "Happy Home" web application is built on a strong foundation of cutting-edge technologies, carefully chosen to provide the best possible experience for users. MySQL, a reliable database system, handles data management with accuracy and efficiency. React, a popular frontend library, and Django, a powerful backend framework, work together to create a responsive and easy-to-use interface for caregivers, nurses, and patients.

By combining these technologies, "Happy Home" not only makes healthcare procedures easier but also creates a secure and user-friendly environment for connecting caregivers with those in need. The inclusion of in-home lab services further demonstrates the project's commitment to making healthcare more accessible and convenient. The combination of a solid database, a dynamic frontend library, and a robust backend framework makes "Happy Home" a powerful platform that is efficient, secure, and adaptable. As we move forward in the digital age of caregiving, "Happy Home" shows how technology can transform and improve in-home care services.

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