

**Project: Personal Health Monitoring System
(PHMS)**

CSE 5325 – Fall 2020

Project Management

Module: Project Scope & Feasibility

Deliverable: Scope & Feasibility Document

Version: [1.0]

Date: [February 14,2023]

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1. Introduction and Executive Summary

There have been attempts to use the new technology in a variety of ways to raise the standard of living as technology has advanced. The application of technology in the healthcare sector is one major field of research. In impoverished nations, those who require healthcare services find it to be exceedingly expensive.

People don't take their health seriously, which is a major contributing factor in most of the worldwide crises we see today. Some of the things that individuals take for granted are routine checkups and a timely healthy diet. Following a nutritious diet, a regular sleep schedule, and regular exercise can readily alleviate these health conditions.

However, how can a patient determine which diet to follow, what exercise to perform, and—more importantly—whether the plan he is following is successful for him? The lack of such a mechanism makes the patient's task challenging, leaving him with the choice of either seeking medical attention at a high cost or ignoring the more serious condition. As a result, this research is an effort to address a contemporary healthcare issue facing society.

The goal is to develop an Android application and design and install a website for the Personal Health Monitoring System (PHMS). One's vital signs, intake, medications, basic information, communication data, and diet regimen are all tracked by the website and application.

2. Objectives

2.1 BUSINESS OBJECTIVES

The following is the list of business objectives:

Objective 1: Login – project will be secure, users must register and login before use

Objective 2: Vital signs – System will maintain all vital signs such as Blood pressure, glucose level, Cholesterol.

Objective 3: Client profile – is accessible from the website and android app.

Objective 4: Email, mobile phone calls, and text message notifications for pertinent communication information are all forms of communication.

Objective 5: Data maintenance: To keep the data current in the system and let users properly manage their personal data.

Objective 6: Become #1 player in the segment.

Objective 7: Obtaining and fostering the customer's confidence will allow us to host the web application in the cloud.

Objective 8: Deliver top-notch goods to boost trustworthiness.

Objective 9: Reduce the customer's cost to win back their trust and business.

Objective 10: Gaining customer satisfaction requires understanding the client.

2.2 SYSTEM OBJECTIVES

The following is the list of system objectives:

Objective 1: There will be a web-based and an Android application available.

Objective 2: 500 connections can be made simultaneously at any moment, according to the number of users. The idea of concurrency may be used for this in both databases and operating systems.

Objective 3: The search engine will incorporate Google Search.

Objective 4: The web application's front end employs HTML, CSS, and JavaScript to retrieve and display data for the user.

Objective 5: To ensure that only users with permission may access all the information provided in the application, Login and Signup will be integrated into the application.

Objective 6: The only person with full ability to change data may check for a list of people who have signed up, edit/modify medication information, and so on.

Objective 7: The application's back end makes use of the MySQL Workbench Database to store and retrieve data for the user to see.

Objective 8: Visitors to the program can explore it without creating an account, but only accounts with signed up users will have access to features like tracking diet and reminding users to take medications.

Objective 9: The website's Android app has all the same functionality as its web-based counterpart.

Objective 10: Eclipse software is used to construct the program, which is written in Java and enables efficient development of the application's websites.

Objective 11: To provide the website's backdrop and other stylistic components a pleasing appearance, they are handled in a separate CSS file that is also used for the Android application.

Objective 12: Web server: Apache Tomcat 9.0 will be utilized.

Objective 13: Before going live, the application is tested to ensure that every single feature, link, button, and redirect in both the web and Android applications function flawlessly and error-free.

Objective 14: Selenium Web Driver may be used for back-end testing to examine all potential test case combinations, validate application forms, monitor button clicks and link redirection, among other things.

Objective 15: Eclipse may export the APK file for the Android application, which can then be used to install the software on Android mobile phones for convenience.

Objective 16: Notes – Allow staff members and customers to make personal notes on anything, including requests, inquiries, to-do lists, etc.

Objective 17: Medication: This involves the patient's scheduled medication time and an alert system that reminds them to take it.

Objective 18: Diet: Monitoring calorie intake, food consumption, and weight.

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3 Project Feasibility, Risks and Metrics

Project feasibility and metrics are summarized below:

3.1 PROJECT FEASIBILITY CONCERNS

Some of the factors considered to study about the feasibility of the project are as follows:

Market Feasibility: To ensure that the Application is ready for the market, the project is extensively investigated. One of the top global concerns for individuals is their health. A website or application that ensures individuals can keep track of their health is something that delves into the market's competitive environment and has a sustainable place for the project. The goal of market feasibility is to identify and assess the potential risks and opportunities associated with launching a product or service.

Technical Feasibility: This entails analyzing the proposed system's technical needs in terms of its hardware, software, and other components. A PC or laptop with an active Internet connection and an Android-powered mobile phone are the only necessary pieces of hardware for the system to access the website or application. To decide whether to go on with the project and to establish a project plan, the technical feasibility study's findings are employed. A crucial part of the project development process is determining technical feasibility since it helps to guarantee that the project can be completed effectively and that resources won't be squandered on unworkable solutions.

Economic Feasibility: Before assigning the necessary funding for the project, this usually entails the Financial Assessment, such as a cost-benefit analysis of the project to ascertain its feasibility, cost, and benefit. The project will cost money for high-speed Internet access and the labor hours needed to develop the website or application. This raises the legitimacy of the initiative. The idea offers favorable economic advantages since PHMS is highly sought after worldwide because people want to make sure they remain healthy and active. To establish if a project is economically viable and will provide a good return on investment, it is necessary to calculate the costs and benefits of the project (ROI). As it helps to guarantee that resources are spent in initiatives that are both financially feasible and will provide a favorable return, economic feasibility is a crucial phase in the project development process.

Scheduling Feasibility: Determining the time needed to finish the job is included in this. This usually entails dividing the modules among the project participants, completing them, and then integrating all the modules to ensure that the website or application is operational. Admin, User Account, and other modules make up PHMS. The project will probably take 2 to 3 months to finish, considering all the many modules it entails.

Expansion Feasibility: This entails keeping an eye out for any modifications that could be made to the current system. According on user ratings and input, the project's general system may be expanded with new features. Users may submit comments and reviews on the website or application about what features need to be improved or what new features they hope the system will have. Based on that, it follows that the current system can always be improved.

3.2 PROJECT RISKS

Some of the project risks and their mitigation actions are as follows:

RISK	MITIGATION ACTION
<ul style="list-style-type: none">• Project purpose is not well defined.	By ensuring that a business case is supplied well in advance from the beginning to the completion of the overall system of the project, this HIGH IMPACT RISK may be reduced.
<ul style="list-style-type: none">• Incomplete project definition and deliverables. <p>Since the system cannot function properly until the project is finished successfully and all deadlines are fulfilled, this is a HIGH IMPACT RISK, but the likelihood that it will materialize is minimal.</p>	This risk may be reduced by using design workshops and reducing vague criteria.
<ul style="list-style-type: none">• Scheduling issues of the overall project.	The project lead clearly defines the roles and responsibilities of each person working on the project, including time for development and provides a timeline for the work to be completed, reducing the likelihood that this risk will materialize and resulting in the successful completion of PHMS within the specified deadline.
<ul style="list-style-type: none">• Cost Allocation Risk (Budget Issues) <p>When the project takes more money than was first anticipated, this situation occurs. When PHMS costs are greater than the income that the website or service earns, the risk is serious.</p>	To get around this, some capital should be set aside at the beginning of the project that may be used if there are unanticipated financial problems later.
<ul style="list-style-type: none">• Resource Allocation Risk <p>A HIGH IMPACT RISK exists here. Resources should be set aside long in advance of the system's installation to fulfill the marketing, technical, and financial needs of PHMS.</p>	To reduce this risk, the project manager should, among other things, designate enough money to cover the project's whole cost, choose programmers and developers with the necessary skills and the flexibility to react to the market's changing needs and technological trends.
<ul style="list-style-type: none">• Employee Resignation Risk	Deliverables may be delayed if a key person departs during the project, and the project term may go over three months.
<ul style="list-style-type: none">• Information Security Risk <p>Customer information might be exposed because of espionage and listening devices.</p>	256-bit AES encryption and the secure HTTP protocol (https://) are used for data transfer.

3.3 PROJECT METRICS

Whenever there is a release to the customer, there is a specified threshold on quality over which the delivery is unacceptable. Such thresholds and their descriptions are listed below.

Measurement	Description	Acceptable Threshold level
Percentage of Feedback	The proportion of customer evaluations or comments indicating that the program is excellent	Greater than or equal to 80%
Severity 1 Defects per line of code	the number of critical, level 1 issues found for every 1000 lines of code (sample value)	Not more than 2 defects
Severity 2 Defects per line of code	Defects of a medium priority severity of 2 that were discovered per 1000 lines of code (sample value)	Not more than 8 defects
Severity 3 Defects per line of code	For every 1000 lines of code, the number of low priorities, severity 3 flaws were discovered (sample value)	Not more than 15 defects
Percentage of server failures	the number of times per 30 days when a server failure has happened	Not more than twice
Number of users using the system	the quantity of concurrent users of the website or application	Not more than 500
Level of Adherence to schedule	We anticipate completing 90% of the project by the first week of November.	Not less than 90%
Percentage of profit	The percentage or the portion of profits our business will make as a result of successfully finishing this project.	Not less than 50% profit

In any instance, if the project metrics exceed the predetermined amount, our company's performance is poor, and the web application's performance and user feedback will ultimately suffer.

4 Project Scope and Process Model

Project scope includes the following:

1. A Welcome page will be accessible to users.
2. Employees will get user registration and login information through the employee portal. Employees will be given Inventory to keep track of information.
3. Users will have access to the system's many functions, such as Diet Requirements, that are offered through the website or application.
4. Users will be able to settle their payments using a credit card.
5. The full history of each order made by the User and the associated payments will be kept.
6. With the users' approval, employees will be able to independently enter their information for User registration.
7. Each medicine in the online application will have a prototype display picture and a description, including its purpose, dosage per serving, etc.

The following is a list of items out of scope:

1. If there is an increase in the number of customers, number of servers could be increased.
2. Surveys could be conducted, and feedback could be taken from the customer about the user experience for our website and android application
3. Customer grievance could be listened by way of maintaining a forum for complaints and issues.
4. Based on customer search, some recommendations could be given about the other related products that could be bought along with their required drug by performing some data analysis.

4.1 PROJECT PROCESS MODEL

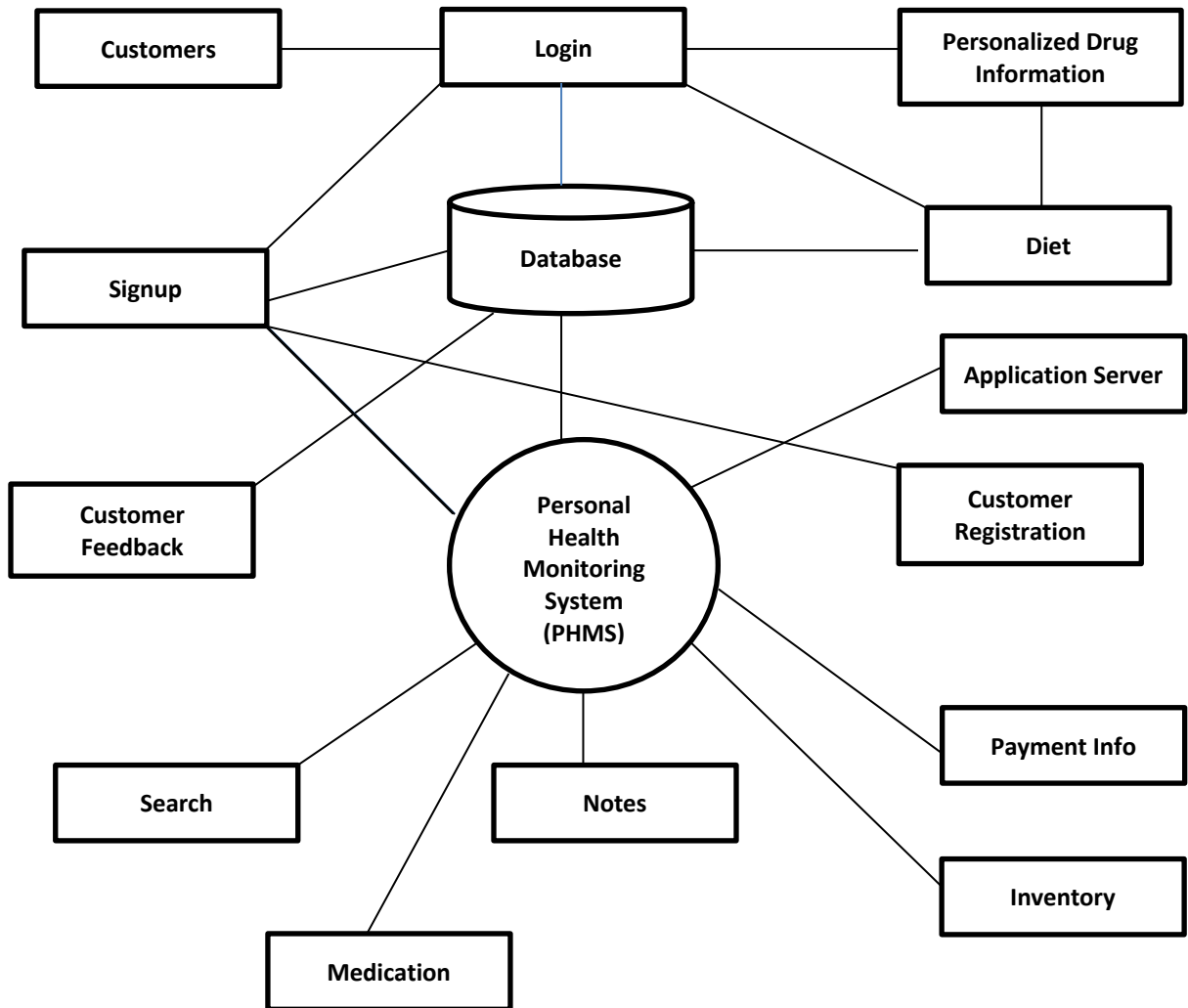
Project managers often use the waterfall technique, a conventionally linear style of software development. With the waterfall method, there is no phase overlap, and each stage of the software development process is finished before the next one starts. The waterfall approach's stages are often described as follows:

- Gathering and analyzing requirements: During this stage, the project's specifications are collected and examined to produce a thorough specification document that describes what the program will perform.
- Design: During this stage, the system's architecture, and a high-level design with specific designs for each component are produced.
- Implementation: The system's code is developed, tested, and integrated at this stage.
- Testing: The system is carefully tested in this step to make sure it complies with the specifications and operates as intended.
- Deployment: The system is made accessible to end users at this stage.
- Maintenance: During this stage, the system is kept up to date and any required problem repairs and upgrades are done.

Traditional software development projects: When requirements are explicit and the result is well-defined, the waterfall technique is often utilized. Construction projects: The waterfall method is also employed in these projects, where each phase must be finished before the next one can start. Manufacturing projects adopt a waterfall method because each step of production must be finished before moving on to the next. Clear and well-defined phases: The phases of the waterfall approach are clearly defined, which makes it easy for project teams to understand what needs to be done and when. Easy to manage: The sequential nature of the waterfall approach makes it easy to manage and monitor progress, as each phase has a clear start and end point. Good for well-defined projects: The waterfall approach is well-suited to projects with well-defined requirements and a clear understanding of the product.

4.2 PROJECT CONTEXT

A high-level diagram of the proposed approach/components is shown below:



5. Assumptions and Constraints

5.1 ASSUMPTIONS

The following is a list of assumptions:

- Everyone who uses the website or app is older than 18.
- Ignore any tax-related problems.
- Ignore other expenses like travel, social and health insurance expenditures, etc.
- Ignore upkeep problems after the project is in operation.
- Disregard any legal and contract negotiating issues. Remember that this is one of the most crucial elements of the project in real life. wherever feasible, try to keep complete control over the source code.
- Internet Access: Both clients and staff have access to a dependable internet connection.
- Website Availability: If there is an internet connection, the website is accessible.
- Payment: Only credit cards are accepted by customers for payment.
- Resource workers' hours: Each resource person working on the project puts in eight hours a day.

5.2 CONSTRAINTS

Constraints include the following:

- **Internal Project Constraints:**

This category includes internal project disputes including technical, technological, financial, and resource issues, among others. Conflicts include some of the following:

- The usage of our online application is not possible for anybody who is not computer
- Access to our website and Android app is not possible without an internet connection.
- Customers won't be able to utilize all the application's functionality until they purchase a plan.

- **Internal corporate constraints:**

These include restrictions on finances, marketing, and other areas. Conflicts include some of the following:

- There would be a limitation if the overall cost of creating the website or application was more than the amount allotted for the project.
- If there is a maintenance cost, it must be considered if there isn't enough money set aside for it and an unanticipated event cost more than was originally anticipated.
- If a website or application with a conceptually similar idea already exists, the project should be able to compete with possible rivals while still meeting the market's rising need.

- **External Corporate Constraints:**

- This category includes corporate external restrictions on logistics, the environment, laws, and regulations, among other things. Here are a few examples of the conflicts:

- The presentation of any prescription medications on the website or application is prohibited if they do not adhere to the rules and regulations of the relevant authorities.

6. Project Tasks, Schedule and Cost

Level No.	Tasks	No. of units	Cost/hour	Total cost
1.0	Project administration			
1.1	Project Leader	1	\$100	\$52,000
1.2	Resources	5	\$50	\$25,000
2.0	Health Benefits (50% extra surge)			\$150,000
3.0	Hardware			
3.1	Servers	6	\$4,000	\$24,000
3.2	Monitors and Desktops	6	\$4,000	\$24,000
3.3	Other Devices	6	\$700	\$4,200
4.0	Software			
4.1	Systems Software License	6	\$80	\$480
4.2	Database License	1	\$250	\$250
4.3	Other Software/Security licenses	6	\$150	\$900
5.0	Testing	6	\$50	\$300
6.0	Training			
6.1	Creating backups	6		\$10,000
6.2	Learning and Features development	6		\$7,000
7.0	Deployment			
8.0	Recreation and Team outings	6		\$20,000
9.0	Project Reserve for Emergencies	1		\$30,000
	Total Project Estimate			\$348,130

The project cost estimate without any profit is \$348,130. The profit margin is 50%.

The project cost estimate along with the profit margin is \$ \$ 696,260

Task name	Duration (in days)	Start date	End date
Software Development Plan	90 days	FEB 10,2023	MAY 10,2023
Requirement Analysis	10 days	FEB 10,2023	FEB 19,2023
Design	15 days	FEB 20,2023	MAR 6,2023
Coding/Development	30 days	MAR 7,2023	APRIL 5,2023
Testing	10 days	APRIL 6,2023	APRIL 15,2023
Training	10 days	APRIL 16,2023	APRIL 25,2023
Deployment	10 days	APRIL 26,2023	MAY 5,2023
Documentation	5 days	MAY 6,2023	MAY 10,2023

7. Conclusion and Recommendations

As a result, the project has been designed and carried out in stages to guarantee that the most crucial capabilities are developed and made accessible to the client. It has been assured that every module has been implemented within the allotted three months with excellent quality and very few errors. If the period is extended by an additional two months, the remaining modules might be completed.

I would advise the board of directors to give more resources to the project as this would help it to be completed far ahead of schedule and may also guarantee that more extra features are added to the application, increasing the company's profit margin projections. This will be quite helpful when investing in future improvements for the business. This would also open the door for other prospective clients in the dealership industry to invest in the program. We would enhance our market share if we had a large consumer base. To achieve our corporate goal of dominating the market, this would be a necessary first step.

Appendices

Additional documents or references, if any (Optional) such as screen shots, web references, hardware details and specifications, etc.

- <https://business.adobe.com/blog/basics/waterfall#:~:text=The%20Waterfall%20methodology%20%E2%80%94%20also%20known,before%20the%20next%20phase%20begins.>
- <https://www.wrike.com/project-management-guide/faq/what-is-waterfall-project-management/>