# **Group 4**

# The Health and Fitness Software Development Plan Version 1.4

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
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# **Revision History**

Date	Version	Description	Author
18/10/2024	1.0	- Finish Introduction	Vũ Thái Thiện
		- Finish Project Purpose, Scope, and Objectives	Nguyễn Huỳnh Minh Quang
		- Finish Assumptions and Constraints and Project Organization.	Văn Diệp Bảo Duy
19/10/2024	1.1	- Finish project deliverables and Project Estimates.	Ngô Thanh Phương Dương
		- Fill in some Risk Management.	Trương Thuận Kiệt
21/10/2024	1.2	- Update Risk Management.	Nguyễn Huỳnh Minh Quang
		- Finish draft Project plan.	Văn Diệp Bảo Duy
22/10/2024	1.3	- Finish Project Monitoring and Control.	Vũ Thái Thiện
		- Update Roles and Responsibilities.	Trương Thuận Kiệt
24/10/2024	1.3	- Update header.	Vũ Thái Thiện
		- Update table of content.	Nguyễn Huỳnh Minh Quang
1/11/2024	1.4	- Update Project Plan (Sprint 1, Sprint 2).	Nguyễn Huỳnh Minh Quang
8/11/2024	1.4	- Update Project Plan (Sprint 3, Sprint 4, Sprint 5).	Nguyễn Huỳnh Minh Quang

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

## **Table of Contents**

1. Introduction	4
2. Project Overview	4
2.1 Project Purpose, Scope, and Objectives	4
2.2 Assumptions and Constraints	
2.3 Project Deliverables	4
3. Project Organization	5
3.1 Organizational Structure	5
3.2 Roles and Responsibilities	6
4. Management Process	6
4.1 Project Estimates	
4.2 Project Plan	6
4.2.1 Phase and Iteration Plan.	6
4.2.2 Releases	7
4.2.3 Project Schedule	8
4.3 Project Monitoring and Control	8
4.3.1 Reporting	8
4.3.2 Risk Management	9
4.3.3 Configuration Management.	

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

## **Software Development Plan**

#### 1. Introduction

The Health and Fitness Web Application aims at helping users improve their physical well-being through personalized workout plans and diet recommendations. In today's fast-paced world, maintaining a balanced lifestyle is challenging, making it essential to provide users with accessible, practical, and tailored solutions to stay fit and healthy.

## 2. Project Overview

## 2.1 Project Purpose, Scope, and Objectives

The application will allow users to set fitness goals, track their daily activities, and follow customized diet plans aligned with their personal preferences and nutritional needs. The platform will also feature workout routines designed to target specific fitness objectives—whether it's weight loss, muscle gain, or overall wellness—combined with nutritional guidance to ensure users achieve optimal results.

## 2.2 Assumptions and Constraints

- Project has no budget.
- Team size is only 5 members.
- Platform will be web-only.
- Development must be completed within 12 weeks.

## 2.3 Project Deliverables

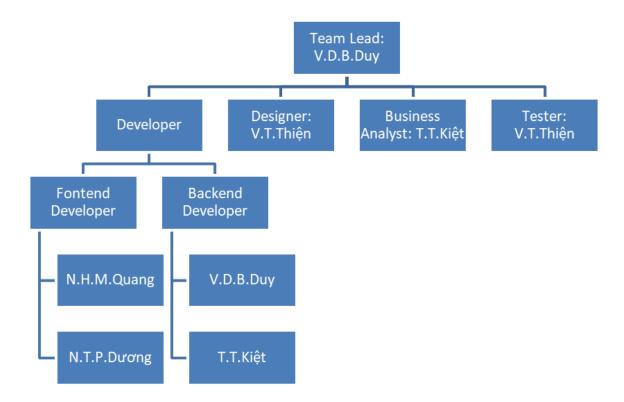
- Project Charter:
  - Description: Outline the project's objectives, scope and overall vision.
  - Target Delivery Date: Week 1.
- Requirements Specification:
  - Description: Contain functional and non-functional requirements for the application.
  - Target Delivery Date: Week 2.
- Wireframes and UI:
  - Description: Initial design sketches and detailed UI mockups for key pages such as the landing page, dashboard, workout plans and user profile.
  - Target Delivery Date: Week 3.
- Technical Architecture Document:
  - Description: Includes database design, APIs and overall technology stack.
  - Target Delivery Date: Week 4.
- Database Design:
  - Description: A database schema includes tables for user profiles, workout logs, nutrition plans and progress tracking.
  - Target Delivery Date: Week 5.

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

- Backend API Development:
  - Description: Manages user accounts, workout plans, tracking progress and integrating third party devices.
  - Target Delivery Date: Week 6 and 7.
- Frontend Development:
  - Description: Implementation of user interface and core user flows such as registration, log in and viewing workout plans.
  - Target Delivery Date: Week 8 and 9.
- Testing:
  - Description: Includes test plans, cases and automated testing scripts for functional and non-functional requirements.
  - Target Delivery Date: Week 10.

## 3. Project Organization

## 3.1 Organizational Structure



The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

## 3.2 Roles and Responsibilities

Person	Role
Văn Diệp Bảo Duy	Team leader, Backend Developer
Trương Thuận Kiệt	Business Analyst, Backend Developer
Vũ Thái Thiện	QA Tester, Designer
Nguyễn Huỳnh Minh Quang	Frontend Developer
Ngô Thanh Phương Dương	Frontend Developer

## 4. Management Process

## **4.1** Project Estimates

No cost

## 4.2 Project Plan

#### 4.2.1 Phase and Iteration Plan

The project is scheduled to be completed in 12 weeks, and our team has decided to divide this timeline into 3 phases with the following breakdown:

#### Phase 1 (Inception Phase):

- Week 1: Project Initiation
  - o Define Project Scope.
  - o Form the Project Team.
  - o Hold the Initial Project Meeting.
  - Identify Key Stakeholders.
- Week 2: Planning
  - o Collect Detailed Requirements
  - Create the Project Plan.
  - o Perform a Risk Assessment.
  - Assign Resources.

#### **Phase 2 (Elaboration Phase):**

- Week 3: Design
  - Plan system architecture.
  - o Develop user interface concepts.

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

- Week 4: Design
  - Create database structure.
  - o Conduct design review and approval.
- Week 5: Prototyping and Early Development
  - Construct initial prototypes.
  - o Gather stakeholder feedback on prototypes.
  - Adjust designs based on input.
  - o Implement CRUD for Managing application's records.

#### **Phase 3 (Construction Phase):**

- Week 6-9: Core Development
  - o Build front-end modules.
  - o Develop back-end logic and services.
  - Set up and configure the database.
  - Combine and synchronize all components.
- Week 10: Testing
  - Run unit tests for individual components.
  - o Perform integration tests to ensure seamless functionality.
  - o Conduct system-wide testing for stability.
  - Facilitate User Acceptance Testing (UAT) to validate end-user needs.
  - Address bugs and make necessary corrections.
  - o Optimize system performance.
- Week 11: Deployment and Wrap-Up
  - Set up the production environment for deployment.
  - Deploy the system to production.
  - o Carry out a final production system test.
  - Complete handover to client and conduct a project review.
- Week 12: Buffer Week
  - Allocate time for any final adjustments, unforeseen tasks, or additional testing.

#### 4.2.2 Releases

#### a. Initial Demo Release

- **Description**: A basic, non-interactive prototype that demonstrates the overall concept, design, and user journey of the application.
- **Purpose**: To gather early feedback from stakeholders and potential users.
- Stage: Demo.

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

#### b. Alpha Release

- **Description**: The first working version of the web app containing core functionality, such as user registration, basic workout plans, and nutrition tracking. Many features might still be incomplete, and it's primarily shared with internal testers.
- **Purpose**: To test core functionalities and identify major bugs.
- Stage: Alpha.

#### c. Closed Beta Release

- **Description**: A more polished version with essential features, such as workout tracking, diet planning, and progress visualization.
- **Purpose**: To receive feedback from a selected group of users.
- Stage: Closed Beta.

#### d. Open Beta Release

- **Description**: A nearly complete version with all primary features fully functional but may still have minor bugs.
- **Purpose**: To test scalability, gather feedback from a broader audience, and point out any final usability or performance issues.
- Stage: Open Beta.

#### e. Public Release

- Description: The first official version available to all users. Includes all features, such as custom meal plans, social features like community challenges, and complete workout libraries.
- Purpose: To launch the product publicly, promote user adoption, and begin building a
  user base.
- Stage: Production.

#### f. Post-Launch Updates

- **Description**: Regular updates after the public release, which may include new workout routines, added device compatibility, bug fixes, and user-requested enhancements.
- Purpose: To keep the user base engaged, improve user experience, and address any newly discovered bugs or performance issues.
- Stage: Maintenance and Iterative Releases.

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

#### 4.2.3 Project Schedule

The project will have 3 phases: Inception, Elaboration, and Construction, and 5 Iterations/Sprints. Each sprint lasts 2 weeks with each PA (Project Assignments).

#### Sprint 1 - PA0, PA1

Start date: 14/10/2024End date: 27/10/2024

Task:

Form team: All member

Project Proposal:

■ Develop an *Initial Plan* with project objectives, timelines, and major milestones: M.Quang

■ Gather input from stakeholders to align on expectations: P.Duong

■ Finalize and document the project proposal: T.Kiệt

- o Tools Setup: B.Duy
  - Identify and procure required tools.
  - Configure the tools and ensure team access.
  - Conduct basic training if needed to ensure everyone is familiar with the tools.
- Write vision document: All member
- o Write weekly report: B.Duy
- Write the description in PA0: B.Duy



#### Sprint 2 - PA2:

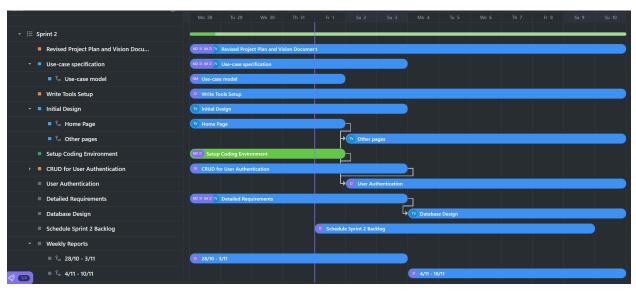
Start date: 28/10/2024End date: 10/11/2024

Task:

- Revised Project Plan and Vision Document:
  - Review initial project goals and adjust based on new insights: P.Durong, T.Kiêt
  - Document updated project objectives, timelines, and milestones:M.Quang
- Define Use-Case Specification:
  - Identify primary use cases that represent the core functionality: M.Quang
  - Document detailed scenarios for each use case, including expected user actions and system responses: B.Duy, T.Thiện, T.Kiệt, P.Duong

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

- o Initial Design: T.Thiện
  - Design the Home Page with user-friendly elements and core navigation.
  - Develop layouts for Other Pages to ensure consistency and usability across the application.
- Setup Coding Environment:
  - Setup Backend Coding environment: B.Duy
  - Setup Frontend Coding environment: P.Duong
- o Implement CRUD for User Authentication: T.Kiệt
- o Make User Authentication: B.Duy
  - Create user login and registration interfaces.
  - Set up session management and ensure secure authentication practices.
- o Make Detailed Requirements: All member
  - Collect specific feature requirements for each module of the application.
  - Define performance, usability, and security requirements.
- o Database Design: T.Thiện
- o Implement CRUD for Managing Application's Records: T.Kiệt
- Schedule Sprint 2 Backlog: B.DuyWrite weekly reports: B.Duy
- o Write Tools Setup: B.Duy
- Database design: T.Thiện



#### Sprint 3 - PA3:

- Start date: 11/11/2024End date: 24/11/2024
- Task:
  - Detailed UI/UX Design: T.Thiện
    - Design wireframes for key screens.
    - Gather feedback and iterate on UI prototypes.

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

- Finalize UI/UX design for implementation.
- Test Planning: T.Thiện
  - Define Testing Strategy:
    - Outline testing types (unit, integration, acceptance).
    - Set testing goals, scope, and methodology.
  - Document Test Cases, Test Scenarios, and Acceptance Criteria:
    - Identify critical test cases and scenarios.
    - Define success criteria for feature acceptance.
- o Frontend Coding:
  - Home Page Footer and Header: P.Duong
  - Home Page Main Part: M.Quang
  - Other pages: P.Durong, M.Quang
- Backend Coding:
  - Implement CRUD for Managing Application's Records: T.Kiệt
  - Set Up and Refine API Endpoint: B.Duy
- o Set Up Environment for Testing: T.Thiện
  - Configure test environments and databases.
  - Set up automated testing tools and frameworks.
- o Documentation: All member
  - Document code structure, key functions, and design decisions.
  - Create a user manual or setup guide if needed.
- Write Weekly Reports: B.Duy



#### Sprint 4 - PA4:

Start date: 25/11/2024End date: 08/12/2024

- Task:
  - Finish User Profile Functionalities:
    - Implement functionality to update user profile information: B.Duy

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

- Allow users to manage preferences: B.Duy
- Testing: T.Thiện
  - Perform user acceptance testing to ensure profile functionalities work as expected.
  - Verify data validation and error handling for profile updates.
- Exercise:
  - Add Exercises to Database: T.Kiệt
  - APIs for Exercises: B.Duy
    - Develop APIs to retrieve, filter, and display exercise information.
    - Secure endpoints and add pagination if the list is extensive.
  - Frontend Implementation: P.Duong
  - Testing: T.Thiện
    - Perform unit and integration tests on APIs and frontend components.
    - Validate that exercise data is correctly displayed and filter options work.
- Workout Plans Gallery:
  - Add Workout Plans to Database: T.Kiệt
  - APIs for Workout Plans: B.Duy
    - Implement APIs to retrieve and manage workout plans, with endpoints for adding and updating plans if needed.
    - Add search and filter options for workout plans based on categories or fitness goals.
  - Frontend Implementation: P.Duong
  - Testing: T.Thiện
    - Perform testing to ensure workout plans are correctly displayed and all filters function.
    - Test user interactions for saving and viewing plans.
- Add User Interactions with Workout Plans and Personal Plans:
  - APIs: B.Duy
    - Develop APIs for users to save workout plans to their profile, make custom modifications, and track progress.
    - Implement endpoints to manage personalized workout data.
  - Implement Frontend Page for Personal Workout Plans: M.Quang
  - Testing: T.Thiện
    - Test user interactions for saving and modifying workout plans.
    - Verify that tracking data is updated correctly and progress is accurately displayed.
- o Meal Plan:
  - Add Meal Plans to Database: T.Kiệt
  - APIs for Users and Admins: B.Duy
    - Develop APIs for users to view meal plans, and for admins to manage the meal plan database.
    - Include endpoints for searching meal plans by dietary preference or caloric intake.
  - Frontend Implementation: M.Quang
  - Testing: T.Thiện
    - Test meal plan data retrieval, customization, and display

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

#### functionality.

- Validate nutritional information calculations and ensure accurate representation of dietary data.
- Documentation: All member
  - Document all APIs, including endpoint URLs, methods, parameters, and sample responses.
  - Provide setup instructions and code structure explanations for future developers.
  - Create user guides for navigating key features like workout plans, meal plans, and profile settings.
- Write Weekly Reports: B.Duy



The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

#### **Sprint 5 - PA5:**

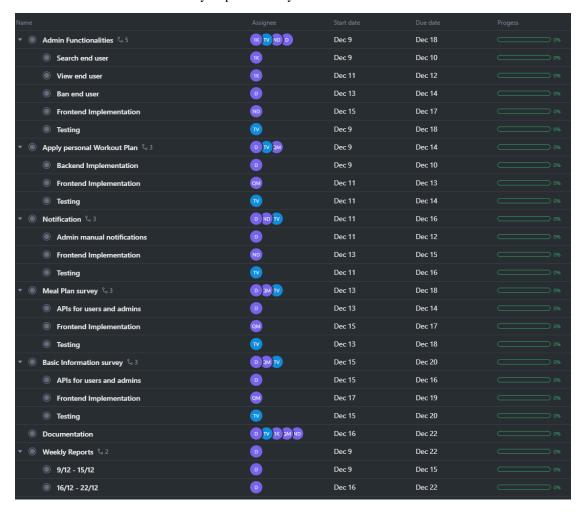
Start date: 09/12/204End date: 22/12/2024

• Task:

- Admin Functionalities:
  - Search End User: T.Kiệt
    - Develop backend functionality to search for users based on various criteria
  - View End User: T.Kiêt
    - Implement the ability for admins to view detailed user profiles and activity logs.
    - Display user information, including profile details, activity history, and any warnings or bans.
  - Ban End User: B.Duy
    - Implement a warning system and ban logs for accountability.
  - Frontend Implementation: P.Durong
  - Testing: T.Thiện
    - Test search accuracy, profile viewing, and ban functionality.
    - Validate security protocols for banning users and accessing user data.
- o Apply Personal Workout Plan:
  - Backend Implementation: B.Duy
  - Frontend Implementation: M.Quang
  - Testing: T.Thiện
    - Test user interactions with personal workout plans, including application, modifications, and resets.
    - Verify backend and frontend sync for workout plan data.
- Notification:
  - Admin Manual Notifications: B.Duy
    - Allow admins to send manual notifications to users, such as reminders, warnings, or updates.
    - Include features to segment recipients based on criteria
  - Frontend Implementation: P.Durong
  - Testing: T.Thiện
    - Test notification delivery for various user segments.
    - Verify that notifications appear correctly in the user interface and can be managed.
- Meal Plan Survey:
  - APIs for Users and Admins: B.Duy
    - Develop APIs to handle survey submissions and save user responses.
    - Enable admins to access survey results for meal plan customization.
  - Frontend Implementation: M.Quang
  - Testing: T.Thiện
    - Test survey submission and data retrieval for both users and admins.
    - Validate that responses are accurately stored and accessible.

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

- Basic Information Survey:
  - APIs for Users and Admins: B.Duy
    - Create APIs to process and store user responses from the survey.
    - Ensure data security and proper handling of user-provided information.
  - Frontend Implementation: P.Duong
  - Testing: T.Thiện
    - Perform testing to ensure data accuracy and proper integration with user profiles.
    - Verify that data privacy is maintained.
- o Documentation: All member
  - Document admin functionalities, notification systems, and survey processes.
  - Update API documentation to reflect new endpoints and data structures.
  - Provide user guides for using personalized workout plans and notifications.
- Write Weekly Reports: B.Duy



The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

- **Note:** This plan is only a draft at this stage, and modifications will be applied to align with practical conditions during execution.

## 4.3 Project Monitoring and Control

- 4.3.1 Reporting
  - Weekly meeting.
  - Weekly status report.
  - Informal chats.

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

#### 4.3.2 Risk Management

Risk ID	Risk Description	Probabilit y	Impact	Risk Exposure	Priority	Mitigation Strategy or Contingency Plan
1	Technical issue: Laptop or Wifi crashes	Occasional	Moderate	2500	9	Having backup devices, use a better 4G package.
2	Key staffs are ill or have personal problems at crucial times	Likely	Serious	5625	1	Assign secondary staff as backups for crucial roles.
3	Sudden change to requirements	Unlikely	Moderate	500	10	Ensure early and clear communication with team members. Allow flexibility in project timelines to accommodate changes.
4	Wrong estimation of difficulty of the technologies	Likely	Serious	5625	2	Allocate time for technology research in advance.
5	Critical bugs lead to the delay of development progress	Likely	Serious	5625	3	Implement regular testing and reviews to detect bugs early.
6	Inaccurate planning and scheduling often lead to delays in meeting deadlines	Occasional	Serious	2500	7	Improve planning accuracy, set realistic timelines, and schedule buffer periods.
7	Team members have the lack of motivation	Occasional	Moderate	2500	8	Conduct team-building activities and provide motivation incentives.
8	Poor quality control or insufficient testing	Likely	Serious	5625	4	Conduct thorough testing at each phase, ensure adequate quality control processes, and involve multiple testers.
9	Losing project files or data due to improper backup	Occasional	Moderate	2500	5	Implement regular backups of project files and ensure proper backup procedures are in place.
10	Difficulty in coordinating schedules for group meetings	Occasional	Moderate	2500	6	Use collaborative scheduling tools and ensure regular communication between team members to coordinate meeting times effectively.

#### 4.3.3 Configuration Management

- GitHub: A platform for teams to store, share, and collaborate on code using Git. It tracks changes, allows code reviews through pull requests, and helps manage tasks with issues and project boards.
- ClickUp: A task and project management tool that helps teams organize, assign, and track tasks. It
  uses Kanban boards and calendars to visualize progress and includes time tracking and
  goal-setting features.

The Health and Fitness	Version: 1.4
Software Development Plan	Date: 8/11/2024
SDP	

- Discord: A communication tool for teams, offering text, voice, and video chats. It allows for organized discussions through separate channels and supports meetings or direct conversations. Tasks notifications from ClickUp will also send to #work-noti channel in Discord server.