

---

**Group 09**

---

**PageRhythm**  
Version 1.1

|                           |                  |
|---------------------------|------------------|
| PageRhythm                | Version: 1.1     |
| Software Development Plan | Date: 09/11/2024 |
| <document identifier>     |                  |

## Revision History

| Date       | Version | Description   | Author   |
|------------|---------|---|----------|
| 21/10/2024 | 1.0     | The initial version of Software Development Plan Document   | Group 09 |
| 09/11/2024 | 1.1     | <p>The links to workspaces and tools used by our group in this project are added near the end of the file.</p> <p>Our group has also inserted one tool that we used but have not added in the earlier version of this document.</p> <p>Additionally, we have updated the tool for discussion.</p> | Group 09 |

|                           |                  |
|---------------------------|------------------|
| PageRhythm                | Version: 1.1     |
| Software Development Plan | Date: 09/11/2024 |
| <document identifier>     |                  |

# Table of Contents

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

|                           |                  |
|---------------------------|------------------|
| PageRhythm                | Version: 1.1     |
| Software Development Plan | Date: 09/11/2024 |
| <document identifier>     |                  |

# Software Development Plan

## 1. Introduction

The Software Development Plan outlines the phases and iterations necessary for creating a website that allows users to read and listen to books. This includes designing a user-friendly interface for searching and reading books, along with a platform that allows users to customize and select voices to listen to their chosen books being read; a community where users can share their experience about their read books.

The Software Development Plan is utilized by:

- **The project manager**, to plan the project timeline, allocate resources, and monitor progress against milestones.
- **The project team members**, to understand their tasks, deadlines, and dependencies on other activities within the development process.

## 2. Project Overview

### 2.1 Project Purpose, Scope, and Objectives

#### 2.1.1 Purposes

The group aims to develop a web application that allows users to search for and read books, customize and select voices to listen to their chosen books, explore others' reading experiences, and share their own opinions about books.

#### 2.1.2 Scope

This project primarily focuses on developing a web application designed for book enthusiasts, catering to those who enjoy both reading e-books or listening to audiobooks.

#### 2.1.3 Objectives

The objectives include:

- Completing the website application within the set timeframe.
- Ensuring the website interface is intuitive and user-friendly.
- Delivering high performance and stability, even under heavy user traffic.
- Developing all features thoroughly, ensuring they function smoothly and reliably.

### 2.2 Assumptions and Constraints

- The final product is scheduled for delivery in 12 weeks.
- The project is anticipated to operate on a low budget, with expenses not expected to exceed \$12.
- The product will be developed as a web application.
- The team consists of five members, and no additional members are expected to join in the future.

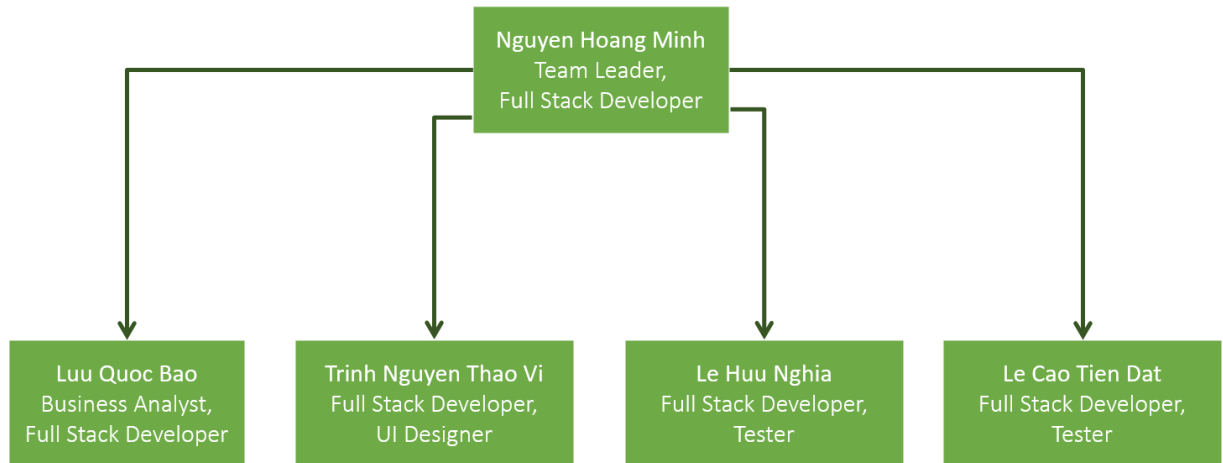
### 2.3 Project Deliverables

- Gantt Chart: 24/10/2024
- Figma Board Illustrating Website Interface: 09/11/2024
- Database Schema: 09/11/2024
- Application Interface Implementation: 08/12/2024
- Back-End Server Implementation: 08/12/2024
- Fixing Bugs Related to Interface and Implementation: 12/12/2024
- Test Cases Development: 15/12/2024
- **Final Test Cases and Review:** 21/12/2024
- **Official Release:** 22/12/2024

|                           |                  |
|---------------------------|------------------|
| PageRhythm                | Version: 1.1     |
| Software Development Plan | Date: 09/11/2024 |
| <document identifier>     |                  |

### 3. Project Organization

#### 3.1 Organizational Structure



#### 3.2 Roles and Responsibilities

| Person               | Role                                   |
|----------------------|--|
| Nguyen Hoang Minh    | Team Leader, Full Stack Developer      |
| Luu Quoc Bao         | Business Analyst, Full Stack Developer |
| Trinh Nguyen Thao Vi | Full Stack Developer, UI Designer      |
| Le Huu Nghia         | Full Stack Developer, Tester           |
| Le Cao Tien Dat      | Full Stack Developer, Tester           |

### 4. Management Process

#### 4.1 Project Estimates

Our group will require a minimum of 12 weeks to complete the project. The estimated budget for the project is approximately 300,000 VND. All five members of the team will collaborate, dedicating many hours each to ensure all tasks are completed effectively.

#### 4.2 Project Plan

##### 4.2.1 Phase and Iteration Plan

.

| Level | WBS | Starting Date | Ending Date | Main objectives |
|-------|-----|---------------|-------------|-----------------|
|-------|-----|---------------|-------------|-----------------|

|                           |                  |
|---------------------------|------------------|
| PageRhythm                | Version: 1.1     |
| Software Development Plan | Date: 09/11/2024 |
| <document identifier>     |                  |

|          |          |              |              |   |
|----------|----------|--------------|--------------|---|
| <b>1</b> | <b>1</b> | <b>14/10</b> | <b>27/10</b> | <b>Inception phase (Sprint 1)</b>                     |
| 2        | 1.1      | 20/10        | 21/10        | Setup the GitHub workspace for front-end and back-end |
| 2        | 1.2      | 20/10        | 22/10        | Setup JIRA  |
| 2        | 1.3      | 17/10        | 27/10        | Write project proposal                                |
| <b>1</b> | <b>2</b> | <b>28/10</b> | <b>10/11</b> | <b>Elaboration phase (Sprint 2)</b>                   |
| 2        | 2.1      | 28/10        | 3/11         | Finalize the Requirements Document                    |
| 2        | 2.2      | 3/11         | 10/11        | Design the System Architecture                        |
| <b>1</b> | <b>3</b> | <b>11/11</b> | <b>24/11</b> | <b>Elaboration phase (Sprint 3)</b>                   |
| 2        | 3.1      | 11/11        | 24/11        | Design Database Schemas Design                        |
| 2        | 3.2      | 11/11        | 24/11        | Prepare to set up back-end for customizing voices     |
| 2        | 3.3      | 11/11        | 24/11        | Conduct a Risk Assessment                             |
| <b>1</b> | <b>4</b> | <b>25/11</b> | <b>8/12</b>  | <b>Construction phase (Sprint 4)</b>                  |
| 2        | 4.1      | 25/11        | 8/12         | Implement Authentication and Authorization System     |
| 2        | 4.2      | 25/11        | 8/12         | Set up Database Schema and initial data models        |
| 2        | 4.3      | 25/11        | 8/12         | Implement the Book Search and Display Features        |
| 2        | 4.4      | 25/11        | 8/12         | Integrate Reading Mode and Basic Audio Player         |
| 2        | 4.5      | 25/11        | 8/12         | Test core functionalities and resolve issues          |
| <b>1</b> | <b>5</b> | <b>9/12</b>  | <b>22/12</b> | <b>Construction phase (Sprint 5)</b>                  |
| 2        | 5.1      | 9/12         | 15/12        | Implement Voice Customization Features                |
| 2        | 5.2      | 9/12         | 15/12        | Add User Profiles and Ratings                         |
| 2        | 5.3      | 15/12        | 22/12        | Conduct Testing                                       |

|                           |                  |
|---------------------------|------------------|
| PageRhythm                | Version: 1.1     |
| Software Development Plan | Date: 09/11/2024 |
| <document identifier>     |                  |

#### 4.2.2 Releases

The first release (1st test case) will be delivered on 15/12/2024. In this initial release, the team will focus on core functionalities like a customizable voice reading, smart listening mode, an available library collection and user accounts to save progress and personalize reading preferences. This phase is considered as a crucial attempt to detect and handle technical issues for enhancing user engagement and enjoyment.

The second release (2nd test case and review) will be delivered on 21/12/2024, with all core features fully implemented and polished. This phase focuses on rigorous testing to ensure reliability, usability, and responsiveness across devices. Key features and others are all optimized for seamless user experience. Final feedback is reviewed to fix minor bugs and enhance accessibility and performance.

The official release will be delivered on 22/12/2024, which is the final version of PageRhythm, offers an immersive digital reading experience tailored to book lovers of all kinds.

#### 4.2.3 Project Schedule

| Title                       | Start Time | End Time   | Oct     |         |         | Nov     |         |         |         | Dec     |         |         |         |
|-----------------------------|------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                             |            |            | 13 - 19 | 20 - 26 | 27 - 02 | 03 - 09 | 10 - 16 | 17 - 23 | 24 - 30 | 01 - 07 | 08 - 14 | 15 - 21 | 22 - 28 |
| ► Inception Phase (Sprin... | 10/14/2024 | 10/27/2024 |         |         |         |         |         |         |         |         |         |         |         |
| ► Elaboration Phase (Spr... | 10/28/2024 | 11/10/2024 |         |         |         |         |         |         |         |         |         |         |         |
| ► Elaboration Phase (Spr... | 11/11/2024 | 11/24/2024 |         |         |         |         |         |         |         |         |         |         |         |
| ► Construction Phase (S...  | 11/25/2024 | 12/08/2024 |         |         |         |         |         |         |         |         |         |         |         |
| ► Construction Phase (S...  | 12/09/2024 | 12/22/2024 |         |         |         |         |         |         |         |         |         |         |         |
| Official Release            | 12/22/2024 | 12/22/2024 |         |         |         |         |         |         |         |         |         |         |         |

### 4.3 Project Monitoring and Control

#### 4.3.1 Reporting

To report project status, our group uses the following approaches:

- Our group holds weekly meetings to discuss each member's progress over the past week, identify necessary adjustments, and plan tasks for the upcoming week. Meetings may be held online or in person.
- Our group also writes weekly reports to report what has been finished, the encountered issues, and the goals for the next weeks.
- Outside of these meetings, members can update task progress or discuss challenges as they arise through designated communication channels.

#### 4.3.2 Risk Management

| Risk ID | Risk Description   | Probability | Impact  | Risk Exposure | Priority | Mitigation Strategy or Contingency Plan  |
|---------|--|-------------|---------|---------------|----------|--|
| 1       | Continuous changes in requirements from stakeholders, such as adding new features like more voice languages, support for different book formats, or integration with new APIs, can cause delays, increased costs, or technical challenges. | Likely      | Serious | 5,625         | High     | Build the system with modular and scalable components to allow easier integration of new features without massive refactoring. |

|                           |                  |
|---------------------------|------------------|
| PageRhythm                | Version: 1.1     |
| Software Development Plan | Date: 09/11/2024 |
| <document identifier>     |                  |

|    |   |            |               |       |          |  |
|----|---|------------|---------------|-------|----------|--|
| 2  | The development time or resources required could be underestimated, leading to delays and budget overruns or falling behind schedule.   | Occasional | Serious       | 3,750 | High     | Eliminate less important functions   |
| 3  | Incompatible API Integration  | Occasional | Moderate      | 2,500 | High     | Ensure the API has comprehensive documentation and technical support in case of issues.  |
| 4  | The online storage, communication suddenly crashes  | Seldom     | Catastrophic  | 2,250 | High     | Remove unnecessary package and redundant cache, testing  |
| 5  | Underestimation of cost of using API to generate voice audio files to read books (most available APIs for generating voices with customization require high charge; overuse of API during testing phase can lead to unnecessary high fee) | Seldom     | Serious       | 1,875 | High     | Carefully choose API with suitable cost and carefully test the applications before integrating API for generating audio files  |
| 6  | Crashing in Database crawling process   | Seldom     | Serious       | 1,875 | High     | Regularly backup the database to ensure no data loss if a crash occurs.  |
| 7  | Member illness  | Seldom     | Moderate      | 1,250 | Moderate | Reorganise team so that there is more overlap of work and people therefore understand each other's jobs.   |
| 8  | Having a member with a significant age difference from the others can lead to challenges in communication.  | Occasional | Insignificant | 1,250 | Low      | Organize team-building exercises to bridge the age gap and build rapport.  |
| 9  | Low Database Performance (The applications require the storage of many books and audio files; both structured and unstructured data; inappropriate choice of design of database might lead to low performance)                            | Seldom     | Moderate      | 1,250 | Low      | Carefully design the database for each type of data before implementation; Analyze which type of database best suits each data type (book content; user information; sample voices; ...) |
| 10 | At least one member quits the course (for personal  | Unlikely   | Serious       | 750   | Low      | Quickly re-assign tasks suitably when this scenario happens.   |



|                           |                  |
|---------------------------|------------------|
| PageRhythm                | Version: 1.1     |
| Software Development Plan | Date: 09/11/2024 |
| <document identifier>     |                  |

|    |   |        |           |     |     |  |
|----|---|--------|-----------|-----|-----|--|
|    | reasons, ...)   |        |           |     |     |  |
| 11 | Website Performance as the browsers allow applications to have a limited amount of space. Therefore, storing large amount of data such as audio files during run-time might not be feasible | Seldom | Negligent | 250 | Low | Avoid storing too much data at the client side                         |
| 12 | Package does not support member's laptop  | Seldom | Negligent | 250 | Low | Update laptop's driver, checking problem issues, borrow or rent laptop |

#### 4.3.3 Configuration Management

The configuration management includes:

- **Google Drive:** Utilized for sharing and storing essential documents, including the timelog, project guidelines, project vision, planning materials, database constraint documentation, and change request documentation.

The link to the Google drive folder of our group can be found [here](#).

- **Git & GitHub:** Employed for version control and storing the project's source code.

The link to the Github repository of our group can be found [here](#).

- **Jira:** Used for task scheduling and management, facilitating team collaboration and progress tracking.

The link to the JIRA workspace of our group can be found [here](#).

- **Figma:** Leveraged for application design, enabling the creation of interactive prototypes and user interface layouts.

The link to the Figma jam of our group can be found [here](#).

- **Slack:** Used for discussion among team members

The link to our Slack workspace of our group can be found [here](#).

- **Trello:** Used to organize and track tasks visually by allowing us to create, prioritize, and manage lists of cards (tasks) across customizable columns that represent stages or categories in a project workflow.

The link to our trello board of our group can be found [here](#).