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**Group 09**

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**PageRhythm  
Vision Document**

**Version 1.0**

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## Revision History

Date	Version	Description	Author
27/10/2024	1.0	The first version of Vision Document	Group 09

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# Vision (Small Project)

## 1. Introduction

### 1.1 Purpose

The purpose of this document is to collect, analyze, and define high-level needs and features of the PageRhythm application. It focuses on the capabilities needed by the stakeholders and the target users, and why these needs exist. The details of how the PageRhythm fulfills these needs are detailed in the use-case and supplementary specifications.

### 1.2 References

The references are:

- Lecture Slides for the CS300 - Elements of Software Engineering course, Assoc. Prof. Nguyen Van Vu, 2024, VNU-HCM

## 2. Positioning

### 2.1 Problem Statement

The problem of	The need for a convenient way to enjoy books in various formats, as well as to discover and share information and opinions about them
Affects	Book readers
The impact of which is	Readers become fed up with reading books after a short time or struggle to find information about books and discover other people's perspectives on them.
A successful solution would be	To provide readers with a convenient way to enjoy books To encourage consistent reading without excessive effort. To enhance the accessibility of books and related information. To enable people to share and explore different perspectives on books.

### 2.2 Product Position Statement

For	Book readers
Who	Read books
The PageRhythm	Is a website application
That	Not only does it enable people to read books on-screen, but it also allows them to enjoy audiobooks with voices tailored to their preferences; facilitates searching for and finding information about books, while providing a community where readers can share their experiences and insights
Unlike	Audible, Kindle, Google Play Books, Good Reads and many ebook applications
Our product	can allow readers to personalize narration voices and effortlessly switch between listening and reading modes, while

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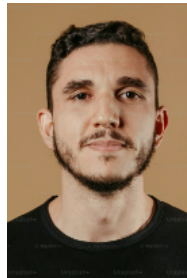
	also fostering a community where individuals can enjoy and share their reading experiences
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### 3. User Descriptions

#### 3.1 User Profiles

##### 1. E-book Reader

- Avatar



- **User name:** Smith Jansen
- **Type of user:** Ebook reader
- **Age:** 32 years old
- **Gender:** Male
- **Culture:** Smith is an Australian
- **Habits:** Regularly reads books during leisure time, such as mornings or evenings.
- **Perspective:** Smith is an avid reader who prefers e-books over physical books, appreciating the convenience of accessing them on his Kindle device or smartphone or laptop. This way, he only needs to carry a single device rather than the weight of multiple books. However, Smith doesn't enjoy audiobooks, as he finds that reading helps him retain information better. He also prefers to focus entirely on one activity at a time, rather than multitasking. For this reason, he isn't interested in listening to audiobooks while doing other tasks; when he reads, he likes to give his full attention to the content.
- **Roles:** He works as a software engineer.
- **Skills:** Proficient in using computers and mobile devices; familiar with digital reading applications; have great ability of concentration.
- **Computer and Business Experience, Environment:** Experienced in using computers; Work in his field for more than 10 years since his graduation.
- **Frequency of Application Use:** He reads books on a daily basis.
- **Limitation:** Although he primarily enjoys reading on his Kindle, he finds it somewhat inconvenient to share or discover opinions about a book's content. Since the Kindle app doesn't allow direct discussion or sharing of insights, he has to switch to Goodreads, a separate social platform for readers, to engage in these conversations.
- **Expectations/Desires:** He wishes that the current applications supporting reading e-books provide good ways of exchanging ideas, opinions, and perspectives about books.

##### 2. Audiobook Enthusiast

- Avatar:

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- **User name:** Huang Amarin
- **Type of User:** Audiobook listener
- **Age:** 20 years old
- **Gender:** Female
- **Culture:** Huang is a Chinese
- **Habits:** Beside reading physical books, Huang likes to listen to audio books whenever she can. For instance, she often listens to audiobooks when she is on the bus traveling from university to her apartment.
- **Perspective:** She loves reading because it helps her relax, and she enjoys both traditional books and audiobooks depending on her situation. More specifically, she reads physical books only when she is at home because she does not want to put more effort into bringing books in her bag. When she's out, audiobooks are her go-to, as they only require her phone or laptop, which she always has with her. Audiobooks also allow her to multitask, making her feel that she's using her time more efficiently. While she sometimes reads on digital screens, she often switches to audiobooks to prevent eye strain from prolonged screen time.
- **Role:** Huang is currently a university student
- **Skills:** Huang knows how to use many main features of computers or smartphones.
- **Computer and Business Experience, Environment:** She knows how to use common functionalities of computers. She is familiar with platforms like Audible, Podcast services; often listens in busy environments or during commutes.
- **Frequency of Application Use:** Frequently, daily, especially while commuting or exercising.
- **Limitation:** Although many common applications for reading ebooks also support the feature of listening to audiobooks, she does not always enjoy these features as the voices of audiobooks are considered not always good. More specifically, the voice is not natural or does not well suit the theme of the books or simply does not meet her expectation or preference.
- **Expectations/Desires:** Seeks natural, easily adjustable narration voices, with the ability to customize voices to suit personal preferences.

### 3.2 User Task and Environment

1. **Tasks:** Reading digital books or listening to audiobooks; searching and discovering new books; rating and sharing feedback on books; tracking reading/listening progress; customizing narration voices.
2. **Task Objectives:**
  - Satisfy personal interests in books, enjoying content convenient and accessible.
  - Enhance a personalized experience while reading or listening.
  - Connect with a community to share and discover opinions on books.
3. **Performed By, Where:** Users can perform these tasks anywhere via personal devices like computers, tablets, or smartphones; in environments such as at home, at work, or while commuting.
4. **Frequency of Task Execution:**
  - Reading/Listening to books: Daily or weekly, based on users' free time.
  - Searching for new books: Weekly or monthly when exploring new content.
  - Rating and commenting on books: After finishing a book or when wishing to share their thoughts.
5. **Task Constraints:**

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- Requires internet connectivity when searching or downloading new books.
- Requires pre-download for offline audiobook listening.
- Needs strong security measures to protect user information.

#### 6. Other Relevant Information:

- The application should support synchronization of reading/listening progress across devices, allowing users to continue seamlessly when switching devices.
- It should ensure fast response times and a user-friendly interface for easy navigation within the application.

### 3.3 Alternatives and Competition

There can be following potential competitors to the proposed solution:

#### 1. Kindle

Kindle is a line of e-readers and a digital reading platform developed by Amazon. It allows users to purchase, download, and read e-books, newspapers, magazines, and other digital media. The key components of Kindle includes

- Kindle devices such as different E-Readers (Kindle Paperwhite, Kindle Oasis, ...) which mimics the appearance of paper and reduces glare, making it comfortable to read in various lighting conditions
- Kindle App which is available on multiple platforms, including iOS, Android, and desktop, enabling users to access their e-book library on smartphones, tablets, and computers.

Kindle can have the following strengths:

- Kindle can provide people a convenient way to enjoy reading books as users can carry thousands of books in one lightweight device, making it easy to read anywhere.
- Kindle offers the ability to adjust text size and background color enhances reading comfort for various users.
- Kindle's ecosystem is well-integrated with Amazon services, making it easy to purchase and manage e-books.
- Kindle provides some good features in terms of accessibility. For example, it offers features like VoiceView, which provides screen reader capabilities, making it more accessible for users with visual impairments.

Nevertheless, Kindle can have some disadvantages:

- Kindle requires users to pay a subscription cost to use. For instance, services like Kindle Unlimited require a monthly subscription, which may not be ideal for all readers.
- The format used by Kindle is proprietary. Consequently, the compatibility with other e-readers and platforms can be limited.

Kindle and our application have some similar core features such as reading books. Although Kindle supports some community features, their features are limited. Many users interact with others through its integration with Goodreads, which is a popular social media platform for book enthusiasts and is discussed in the latter part of this section. Unlike Kindle, our group intends to develop our software as a website application, which means that people can use it whenever they have browsers instead of developing it as an application that primarily goes with its associated devices. Another minor difference is that our application is intended to also serve as a place where people can directly discuss books while Kindle supports integration with Goodreads as mentioned earlier to achieve the same goal.

#### 2. [Audible](#)

Audible is a popular audiobook and spoken-word entertainment platform owned by Amazon. It offers a vast library of audiobooks, podcasts, and other audio content, including exclusive titles and original productions.

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Its major strengths include:

- It offers an extensive library covering various genres, including exclusive content.
- It allows adjustable playback speed, sleep timers, and the ability to download for offline listening enhance usability.

On the other hands, some potential weakness of Audible can include:

- Audible requires subscription Cost: Some users find the monthly subscription fee expensive, especially if they don't consume audiobooks frequently.

Audible and PageRhythm share several similar features. Both applications allow users to read books or listen to audiobooks, as well as rate and review them. However, Audible lacks the option for direct comments or discussions among users, a feature that PageRhythm is intended to offer. In Audible, ratings and reviews mainly function as individual feedback that others can read before deciding to purchase or listen to an audiobook. In contrast, PageRhythm goes further by enabling users to write and read comments, fostering discussions where they can share feedback, reflect on the content, and exchange perspectives more freely.

One significant advantage this application might have over PageRhythm is its ability to offer users a vast library of audiobooks across various genres. However, unlike PageRhythm, Audible does not provide voice customization options.

### 3. [Google Play Books](#)

Google Play Books is a digital platform and e-bookstore by Google where users can purchase, download, and read a wide range of books, magazines, comics, and audiobooks. Available on Android, iOS, and the web, Google Play Books offers a vast collection of titles, including bestsellers, textbooks, novels, non-fiction works, and comics.

Google Play Books has the following major strengths:

- Google Play Books offers a vast library and range of content
- The application has a good integration with Google's Ecosystem

However, the application can have several potential weakness:

- Google Play Books does not provide many subscription options: Unlike Amazon Kindle Unlimited or Scribd, Google Play Books does not offer an all-you-can-read subscription for e-books. Audiobooks also have to be purchased individually, which may deter avid readers who prefer a subscription model.

In comparison with the application that we aim to develop, both applications support both reading and listening modes. However, our application allows users to customize voices to read books instead of selecting a fixed set of audio files for specific books. Another difference is that we aim to deliver community features such as commenting or reactions while Google Play Books does not provide strong community or social interaction features.

### 4. [Goodreads](#)

Goodreads is a popular social media platform and online database specifically for book lovers. Launched in 2007 and later acquired by Amazon in 2013, it offers a space where users can discover, track, rate, and discuss books with a community of readers.

Goodreads has many strengths:

- The application features a comprehensive database of books (it stores an extensive array of book details but it does not include full content of books).
- The application has a large community of users, making it one of common places to review or search for reviews about books.
- The application supports goal tracking features that encourages consistent reading of users by allowing them to set annual reading challenges.



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However, there can be also several weaknesses that the application has:

- Many people perceive the website's interface design as outdated.
- Some users express concerns due to Amazon's ownership and integration.

It is noteworthy to mention that Goodreads aims to function as a social media platform for book enthusiasts and an online database for finding book information, rather than as a site for reading e-books or accessing books online. Our application is designed to include community features similar to Goodreads, such as book commenting and rating. However, our primary focus is on offering robust options for reading and listening to books. Competing with Goodreads in community engagement will be a challenge, as Goodreads has been established for much longer and has a large user base with extensive reviews for each book.

#### 4. Product Features ☐ functional user requirements

This section outlines and describes the features of the PageRhythm app. These features represent the high-level capabilities of the system that are essential for delivering value to users.

##### 1. Search Books

Users can search for books by providing descriptions, along with optional filters such as genre, rating, and release date. Based on this information, the application generates a list of books that closely match the search criteria or are closely related, ensuring users discover relevant options even when their input is not exact.

##### 2. Reading Books

Users can read books by selecting them within the web application. The content of the books is displayed on-screen, with navigation panels allowing users to move to the next, previous, or specific pages and chapters. When a book is opened for the first time, it begins from the first page. However, if users reopen a previously accessed book, the application automatically displays the last page they were reading, enabling them to effortlessly continue their progress.

##### 3. Audio Books

Users can opt to listen to the book's content through the web application, in addition to reading it. This feature allows users to enjoy the book without the need to spend extended periods looking at the screen.

##### 4. Customize Voices

Users can customize the narration by selecting their preferred voice. The application provides a default list of voices to choose from, but users can go beyond these options by uploading short audio samples of a desired voice. The application then simulates this voice to narrate the content of the books, offering a highly personalized listening experience.

By choosing their desired voices, users can enjoy listening to books with a narration style that matches their chosen genre or simply one they find appealing.

##### 5. User Reviews and Rating on Books

Users can view reviews and ratings provided by other readers, giving them valuable insights to help make informed decisions about whether to read a book.

Additionally, by allowing users to share their feedback and ratings, avid readers can engage in discussions about the topics and content of the books.

##### 6. Reading Progress Tracking

Users can monitor their reading status for each book, indicating whether they have started, finished, or are currently reading, along with the percentage of their progress. By enabling users to easily track their advancement, the application fosters a sense of focus and motivation to continue their reading journey.

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## 7. Statistics

Users can access statistics that summarize their reading progress on a weekly, monthly, or yearly basis. This feature allows them to review their accomplishments over time, offering insights into their reading habits and patterns. By seeing their progress, users can identify trends, set personal goals, and stay motivated to reach their reading targets. This reflective capability not only enhances their engagement with the application but also fosters a deeper appreciation for their reading journey.

## 5. Non-Functional Requirements ☐ non-functional user requirements

The application aims to meet the following non-functional requirements:

### 1. Performance

- When users are reading books, the application should be able to load a pair of book pages in less than 5 seconds.
- The application's latency must remain within an acceptable range, not exceeding 5 seconds, even when accessed concurrently by a large number of users.
- The application should utilize minimal network resources to ensure efficient operation.

### 2. Usability

- The website interface should be intuitive and user-friendly

### 3. Reliability

- The website should be reliable, allowing users to listen to audiobooks continuously without interruptions.

### 4. Availability

- The website should be always available, allowing users to access whenever they want

### 5. Durability

- The application should incorporate mechanisms to address unexpected failures that may result in data loss. Specifically, data backup and recovery systems must be considered during the development process to ensure data integrity and accessibility.
- The application should function effectively even under heavy user load.

### 6. Security

- Sensitive information, such as passwords, should be encrypted and securely stored.
- The application must be resilient against cyber attacks like SQL injection, cross-site scripting, ....
- User private information should be well protected to ensure confidentiality and comply with data protection regulations.

### 7. Maintenance and Updates

- There should be regular updates to introduce new features and fix any existing bugs.
- There should be plans for regular system maintenance to ensure the performance and availability.

### 8. Documentation and Support:

- There should be comprehensive documentation and guides available to help users navigate the website effectively.
- The application should provide a support channel (through gmail, ...) to assist users and address any questions they may have.