

Internship Report

Redesigning the JSL3 Website Project
Enhancing Usability and User Experience

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ABSTRACT

This project, completed during my front-end development internship at Ambianti B.V., focused on redesigning the JSL website. Ambianti specializes in advanced building materials, combining digital technology with minimalist design to transform indoor spaces. The JSL framework, a custom-built platform used by Ambianti, required a more user-friendly website to better showcase its capabilities to a broader audience of developers.

The goal was to improve the usability of the JSL website, making it easier to navigate and more helpful for users with various levels of coding experience. Using the Double Diamond design approach, the project focused on enhancing navigation, offering beginner-friendly resources, and adding interactive features to support learning.

The project followed four phases: discovery, define, develop, and deliver. In the discovery phase, I analyzed user needs and studied popular frameworks like React, Vue, and Angular. In the define phase, I set clear goals based on the research. The develop phase involved creating and testing prototypes with user feedback, while the deliver phase focused on implementing and testing the final design.

The redesigned website now offers improved navigation, clear guides for beginners, interactive examples, and better search features, catering to users with different technical skills. The project successfully addressed usability issues, providing a more intuitive platform for learning JSL, with recommendations for future improvements to continue enhancing the user experience.

INTRODUCTION

This report details the JSL website redesign project, which I completed during my internship at Ambianti B.V. The project aimed to make the JSL website more user-friendly and intuitive for a broad audience, ranging from beginners with little coding experience to experienced developers. By improving usability and navigation, the redesigned website aims to help users better understand and utilize the JSL programming language. I adopted the Double Diamond design model to guide the project, dividing it into four distinct phases—Discover, Define, Develop, and Deliver—to ensure a comprehensive and user-centered approach.

The first chapter introduces Ambianti B.V., providing an overview of the company's mission and services. It also explains the role of the JSL programming language within the company's offerings and its significance in driving this project. This background sets the stage for understanding why the redesign was necessary and what the project sought to achieve.

The second chapter outlines the project's scope and assignment. It begins with an assessment of the existing JSL website, identifying its usability challenges, such as difficult navigation, limited beginner-friendly resources, and areas where it fell short in engaging users. This chapter also describes the objectives of the redesign, focusing on addressing these challenges, and explains the constraints and limitations faced during the project. Additionally, it details the research methods I employed, including user testing, surveys, and competitive analysis of other framework websites like React, Vue, and Angular.

The third chapter discusses the process and results, breaking down the project's progress into the four phases of the Double Diamond model. In the Discover phase, I conducted user research and competitive analysis to identify pain points and gather inspiration from industry best practices. The Define phase outlines how these insights were transformed into clear, user-centered goals and objectives for the redesign. During the Develop phase, I created multiple prototypes and conducted iterative testing, collecting user feedback to refine the design and functionality of the website. Finally, the Deliver phase covers the

coding and implementation of the redesigned features, as well as the final testing process to ensure the website was functional and met user expectations.

The final chapter reflects on the outcomes of the project, summarizing the key improvements made to the website, such as clearer navigation, interactive learning resources, and enhanced search functionality. It also offers recommendations for future enhancements to ensure the JSL website continues to meet the needs of its users. Additionally, this chapter highlights my personal and professional growth throughout the project, including the skills I developed in front-end development, user experience design, and problem-solving.

This report not only provides a comprehensive account of the redesign process but also serves as a resource for understanding how user-focused design principles can enhance a technical platform like JSL. Through this project, I delivered a redesigned website that improves the learning experience for users and gained invaluable experience in applying design and development practices in a professional setting.

CHAPTER 1

ABOUT THE COMPANY

Ambianti is a company that specializes in creating advanced building materials by combining digital technology, minimalist design, and traditional construction methods. The company's mission is to introduce innovative and creative ideas into architecture and industrial design, seamlessly integrating them into existing building processes while also changing how people interact with indoor spaces.

To support its operations, Ambianti uses the JSL framework, a custom-built web platform. Although JSL works well internally, it has not gained widespread recognition, limiting its potential for broader use. The current JSL website (<https://jsl3.codemax.net>) offers basic information about the framework but does not effectively highlight its capabilities or benefits to a wider audience. This is where my project comes in—aiming to redesign the JSL website to make it more user-friendly, informative, and to showcase the framework's full potential to users of all skill levels.

CHAPTER 2

ASSIGNMENT OVERVIEW

In this chapter, I provide an overview of the JSL website redesign project. The goal was to resolve usability issues on the existing website and improve its effectiveness for a wider audience, from beginners to experienced developers. This chapter covers the initial challenges that led to the redesign, the assignment details, the research conducted to guide the redesign, and the constraints I encountered during the project.

The assignment involved evaluating the current state of the JSL website, identifying user pain points, and developing a plan for improvements. Through extensive research, including user feedback and competitive analysis, I gained valuable insights into the needs of different user groups. Despite facing constraints such as limited resources and time, my aim was to create a website that better showcases the JSL framework's features and makes it more appealing to potential users. This chapter outlines the steps I took to understand the project requirements and the approach I used to overcome the challenges of the redesign.

2.1 Initial Situation

Prior to the redesign, the JSL3 website (**Figure 1**) faced several significant challenges in terms of its layout, navigation, and overall functionality, which hindered its effectiveness in supporting a wide range of users. The website's structure was not optimized for ease of use, leading to difficulties in navigating between different sections and locating essential information. The lack of a clear, organized navigation system meant users, especially those less familiar with JSL, struggled to find the content they needed quickly and efficiently. Additionally, the presentation of code examples on the website lacked clarity and structure, making it difficult for both beginners and more experienced developers to understand the context and purpose of the code.

One of the most critical limitations was the absence of beginner-friendly resources. The website did not offer sufficient explanations or step-by-step guidance for users who were new to programming or to the JSL3 framework itself. Without clear instructions or

simplified content, users with limited experience were unable to engage effectively with the material, which negatively impacted their learning experience. Furthermore, the website's design did not cater to different levels of expertise, which created an uneven experience for both novice and advanced users.

These issues collectively resulted in a website that was not fully user-centered, failing to meet the needs of its diverse audience. The lack of a streamlined and intuitive design, combined with insufficient educational resources for beginners, necessitated a comprehensive redesign. The objective was to improve the overall user experience, making the site more intuitive, informative, and accessible to users of varying technical backgrounds, thereby expanding the reach and usability of the JSL3 framework.

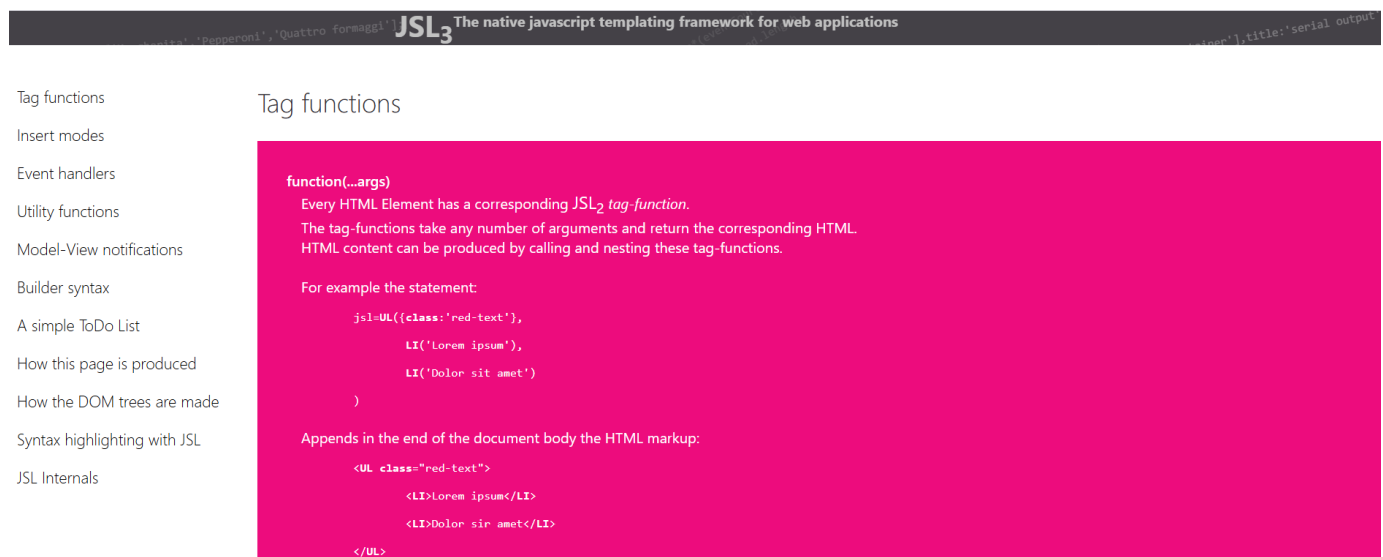


Figure 1. JSL3 current website

2.2 Assignment Description

The primary objective of this project was to redesign the JSL website using a user-centered approach, with a focus on improving usability for both novice and experienced users. The process involved several key tasks aimed at enhancing the overall user experience.

First, an analysis of user needs was conducted to identify specific pain points that hindered effective interaction with the website. This step was crucial in understanding the challenges faced by users and providing insights into areas that required improvement. In addition, a competitive analysis was performed to evaluate other programming framework websites, such as React, Vue, and Angular. This analysis helped identify best

practices and features that could be applied to the JSL website to improve its functionality and user engagement.

Next, new prototypes for layouts and features were developed to address the identified issues. These prototypes were designed with user feedback in mind, ensuring that the solutions proposed were aligned with the needs and expectations of the target audience. Once the prototypes were tested and refined, the changes were implemented to create a more effective and user-friendly platform for learning JSL.

Throughout the project, I collaborated closely with the JSL author and end users to ensure that the redesign met both technical requirements and user expectations. This collaborative approach ensured that the final product not only met the needs of the users but also maintained the integrity of the framework's technical aspects.

2.3 Research

The main research question guiding this project was:

How can the JSL website be redesigned to provide a more user-friendly experience and better support users in learning and exploring JSL?

To answer this question, several sub-research questions were formulated to focus on specific aspects of the redesign:

1. **What are the current pain points and challenges users face when navigating the JSL website?**

The goal of this sub-question was to identify the difficulties and frustrations users encounter when interacting with the current website. The research methods used included usability testing, observation, focus groups, surveys, and task analysis to gather data on user experience and pinpoint areas for improvement.

2. **What features do users want or expect to be added to the JSL website to enhance their learning experience?**

This sub-question aimed to uncover the features users believe would help them

learn JSL more effectively. Research methods included surveys, interviews, focus groups, and community research to gather direct feedback on user needs and expectations.

3. How do other popular framework websites (React, Angular, Vue) present their programming languages, and what can we learn from them?

The goal here was to identify best practices and features from leading framework websites that could be applied to the JSL website. A competitive analysis was conducted, reviewing both successful and unsuccessful design practices, product analysis, document analysis, and literature study.

4. How can the layout and design of the JSL website be improved to make navigation easier for users?

This question focused on creating a more intuitive and user-friendly website structure. The research methods used included prototyping, A/B testing, usability testing, design pattern research, and task analysis to test various layout options and design elements.

5. What impact do the redesigned features have on users' ability to complete tasks and learn JSL more efficiently?

The goal was to measure the effectiveness of the redesigned features in improving user performance and satisfaction. Usability testing, A/B testing, data analytics, descriptive statistics, and benchmark testing were used to assess how the changes impacted task completion and learning outcomes.

6. How can the website cater to users from diverse technical backgrounds (e.g., beginners, experienced developers)?

This sub-question sought to ensure that the website would meet the needs of users with varying levels of technical expertise. Usability testing, focus groups, and exploring user requirements helped to gather insights on how the design could accommodate both novice and advanced users.

2.4 Constraints and Conditions

This project was subject to several constraints and conditions that shaped the design and implementation process. First, it was essential to ensure compatibility with the existing JSL framework, which provided the technical foundation for the website. The redesign had to be built within the framework's structure, meaning any changes or additions had to integrate seamlessly without disrupting its functionality.

Time limitations also played a significant role in the project. The redesign had to be completed within a specified timeframe, which required efficient task management and prioritization of critical tasks. This constraint meant that certain features and improvements had to be carefully planned to ensure that the most essential aspects of the redesign were addressed first.

Additionally, there was a need to balance user feedback with technical feasibility. While gathering insights from users was crucial for identifying pain points and areas for improvement, the technical limitations of the JSL framework and the project timeline meant that not all user suggestions could be implemented. Therefore, a careful evaluation was necessary to determine which feedback could be realistically incorporated into the final design while ensuring that the project remained on track.

These constraints and conditions guided the decision-making process throughout the project, ensuring that the final redesign met both user needs and technical requirements.

CHAPTER 3

PROCESS AND RESULTS

3.1 Introduction to the Redesign Process

In this chapter, I outline the systematic approach taken to redesign the JSL website, following the Double Diamond Design Process (**Figure. 2**). This framework is divided into four distinct phases: Discover, Define, Develop, and Deliver. Each phase served as a critical milestone, ensuring that the redesign was both thorough and user-centered.

The process began with the **Discover** phase, where extensive research and analysis were conducted to understand the current challenges faced by users. By identifying pain points and gathering insights through user testing and competitive analysis, I established a solid foundation for the project. This phase was crucial in ensuring that the redesign directly addressed real user needs rather than assumptions.

Next, in the **Define** phase, the findings from the discovery stage were organized and translated into clear objectives. These objectives provided a structured plan for addressing usability issues, setting the direction for the design solutions to be developed.

During the **Develop** phase, prototypes were created to test potential solutions for layout, features, and functionality. This phase involved iterative testing, where feedback from users was used to refine the designs progressively. This iterative process ensured that each prototype brought the redesign closer to meeting the needs of its intended audience.

Finally, in the **Deliver** phase, the refined design was implemented, with all features and layouts coded and tested for functionality and usability. This phase marked the completion of the redesign, ensuring that the final product was both effective and user-friendly.

By following the Double Diamond Design Process, I was able to take a systematic and user-focused approach to the JSL website redesign. Each phase built on the previous one,

ensuring a seamless progression from understanding user needs to delivering a functional and engaging website.

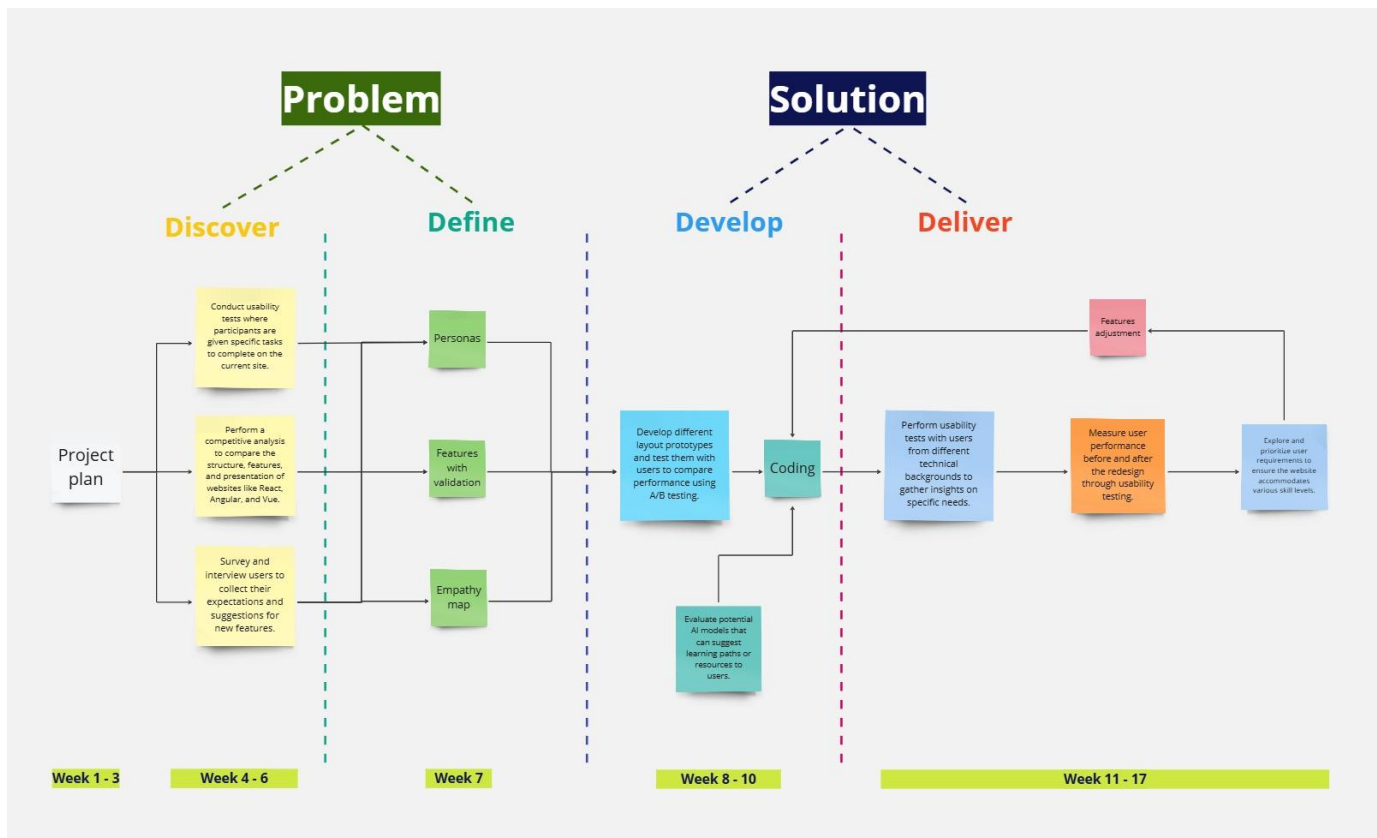


Figure 2. Double Diamond Design Process

3.2 Phase 1: Discover

In this section, I focus on the first phase of the redesign process, which aims to identify the key issues and opportunities for improving the JSL website. This phase addresses three important sub-research questions:

1. What are the current pain points and challenges users face when navigating the JSL website?
2. What features do users want or expect to enhance their learning experience?
3. How do other popular framework websites (React, Angular, Vue) present their programming languages, and what lessons can be applied to the JSL website?

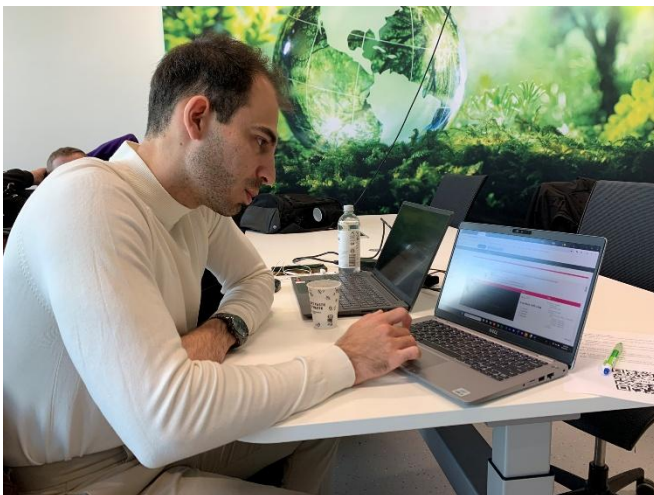
In this phase, I conducted a thorough investigation to understand the needs and expectations of JSL users and to identify industry best practices that could inform the

redesign. A variety of research methods were used, including usability testing, surveys, focus groups, and competitive analysis.

3.2.1 Understanding User Pain Points

To create an effective redesign for the JSL website, it was essential to first understand the pain points those users encountered when interacting with the current site. I approached this task in a systematic manner, using a combination of usability testing, task analysis, and direct user feedback to identify specific challenges. The goal was to pinpoint obstacles that hindered the user experience and find opportunities for improvement.

I began by conducting usability tests with ten participants representing a mix of skill levels, from beginners with little coding experience to advanced developers familiar with programming frameworks. During these sessions, I asked participants to complete specific tasks, such as finding tutorials, navigating the site to locate functions, and attempting to understand code examples. As users worked through these tasks, I observed their behavior and noted areas where they struggled or became frustrated. These observations provided valuable insights into how users interacted with the website and where the design failed to meet their needs.





One of the most common issues was the overwhelming amount of information presented on the homepage. Participants, particularly those new to programming, felt lost and unsure of where to begin. The layout lacked a clear starting point or logical flow, making it difficult for users to prioritize what to read or explore first. This confusion often led to frustration and disengagement.

Next, I focused on navigation. Many users found the website's menu structure unintuitive and poorly categorized. For instance, tutorials and documentation were scattered across different sections, making it hard for users to locate the resources they needed. Several participants noted that they often resorted to trial and error, clicking through multiple sections before finding the desired information. This lack of clarity in navigation created unnecessary barriers, particularly for beginners who required straightforward guidance.

Another significant challenge was the absence of an installation guide. When asked to set up JSL on their local machines, many participants struggled due to the lack of clear, step-by-step instructions. Some users resorted to external resources or gave up entirely, which highlighted a critical gap in the website's ability to support new users.

The presentation of code examples was another key pain point. While these examples were designed to demonstrate JSL's functionality, they often lacked detailed explanations or context. Beginners found the code snippets difficult to follow, as they were not accompanied by annotations or explanations of the logic behind each step. These left users confused and unable to apply the examples effectively in their own projects.

To complement my usability tests, I organized focus groups and distributed surveys to gather further insights. Participants were encouraged to share their experiences,

frustrations, and suggestions for improvement. This process reinforced the findings from the usability tests, confirming that overwhelming information, unclear navigation, the absence of a setup guide, and overly complex code examples were the primary issues affecting the user experience.

By taking a step-by-step approach, I was able to thoroughly analyze the pain points of the JSL website. These insights provided a clear direction for the redesign, emphasizing the need for a simplified and intuitive layout, better-organized navigation, clear setup instructions, and beginner-friendly code examples. Addressing these issues will ensure that the new website meets the needs of users at all skill levels, creating a more engaging and supportive learning environment.

For more information, refer to the JSL3 Initial Usability Testing Report – **Appendix I**.

3.2.2 Competitive Analysis of Popular Frameworks

To inform the redesign of the JSL website, I conducted a competitive analysis of three leading programming framework websites: React, Angular, and Vue. These frameworks are widely regarded as industry benchmarks due to their effective presentation of complex programming concepts and their ability to engage a diverse user base. By studying their structure, features, and content delivery methods, I identified best practices that could be adapted to enhance the usability and functionality of the JSL website.

The analysis revealed several strengths across these frameworks. One of the most notable was their intuitive navigation systems. Each website employed a well-organized menu structure with clear categorization, making it easy for users to locate tutorials, documentation, and other resources. React, for example, uses a straightforward sidebar navigation menu that ensures quick access to key sections, while Angular and Vue implement similar strategies to maintain a logical flow throughout their content. This simplicity in navigation minimizes user frustration and provides a seamless browsing experience.

Another standout feature was the use of interactive code examples. All three frameworks offer users the ability to modify and test code directly within the website, often through embedded live coding environments or playgrounds. This hands-on approach allows users

to experiment with code snippets in real-time, making it easier to understand how various features work. Such interactivity significantly enhances the learning process and could be a valuable addition to the JSL website to increase user engagement.

Additionally, these frameworks excel in providing detailed, step-by-step guides for beginners. React's "Getting Started" section, for instance, breaks down the installation and initial setup process into simple, digestible steps. Angular and Vue similarly offer structured tutorials that gradually introduce users to more advanced concepts. These learning paths cater to users of all skill levels, ensuring that even beginners can progress confidently.

From the competitive analysis, it became clear that adopting features such as intuitive navigation, interactive code examples, and structured learning paths could greatly enhance the JSL website.

For detailed insights, refer to the Competitive Analysis Report (React, Vue, & Angular) – **Appendix III.**

3.3 Phase 2: Define

In this section, I focus on the second phase of the design process, **Define**, where the key insights and findings from the initial user testing and research were synthesized to guide the redesign of the JSL website. Based on detailed feedback from eight users with diverse backgrounds in ICT, media design, software engineering, and international business, several critical areas for improvement were identified. These areas included enhancing the initial setup and onboarding experience, improving navigation, simplifying code presentation, and refining the overall user interface design.

Through this phase, I was able to define clear objectives for the redesign, translating user pain points and feature requests into actionable recommendations (**Appendix IV**). For example, users highlighted the need for more comprehensive installation guides and a better-structured landing page to help beginners understand JSL more quickly. Enhancing navigation was another focal point, with users requesting clearer navigation bars, the addition of a search function, and better grouping of content. Moreover, suggestions for improved code presentation, including adding annotations to code examples and integrating a live code editor, were prioritized.

3.3.1 Highlighted Improvement Areas for the JSL Website

Based on detailed feedback from eight users with diverse backgrounds in ICT, media design, software engineering, and international business, several critical areas for improvement in the JSL website have been identified. This section consolidates their insights into actionable recommendations aimed at enhancing the website's functionality, usability, and user experience.

Initial Setup and Onboarding

Users emphasized the need for a smoother onboarding experience, particularly for beginners. Clear and detailed installation guides were consistently requested by participants like Donald, Desislave, Murat, and Huyen, who noted that the current lack of step-by-step instructions made the setup process unnecessarily challenging. A dedicated "Getting Started" section tailored for beginners would address this gap, providing tutorials that guide users through the initial setup and basic use of JSL.

Participants also highlighted the importance of a well-structured landing page to introduce JSL. Users like Desislave, Sally, and Murat suggested that the landing page should clearly explain what JSL is, its key advantages, and how it compares to other frameworks. An organized and visually appealing introduction can help users quickly understand the framework's value and reduce the initial feeling of being overwhelmed.

Enhanced Navigation

Navigation issues were a recurring theme in user feedback. Several participants, including Donald, Desislave, Waleed, and Murat, reported that the current navigation bar was difficult to use due to its static design and lack of interactive elements. Enhancing the navigation bar with hover effects, clear visual indicators, and differentiated font sizes for main categories and subcategories could significantly improve usability.

The absence of a search functionality was another notable issue. Users like Owen and Waleed expressed frustration at having to browse through multiple sections to locate specific information. Adding a search bar would allow users to quickly find functions or documentation, making the website more efficient to use. Similarly, participants pointed

out the need for prominent call-to-action buttons, such as a visible download button and a home button to return to the main page easily from any section.

Code Presentation and Editing Tools

The presentation of code examples on the JSL website was identified as an area in need of significant improvement. Participants found the existing examples too complex and insufficiently explained. Users such as Huyen and Murat recommended breaking larger code examples into smaller, manageable sections with detailed annotations that explain the purpose and functionality of each line. This would make the examples more comprehensible, especially for beginners.

Many participants also advocated for the addition of a live code editor or playground. Users like Desislave, Sally, Venia, Owen, and Murat suggested integrating an environment where users can modify and test code directly within the website. Editable code snippets and hands-on exercises following examples were recommended to enhance learning and provide practical experience.

User Interface and Design Enhancements

The overall design and content structure of the website were seen as overwhelming by users like Owen and Sally. Reducing information overload by progressively organizing content and presenting it in smaller, focused sections can help users digest the material more effectively.

Participants also emphasized the importance of consistent and clear UI elements. Some users reported frustration when interactive elements appeared non-clickable or lacked visual indicators. Ensuring that all clickable elements are clearly identifiable and maintaining a consistent design language throughout the website can significantly improve the user experience.

Comparative and Informative Content

Several users suggested that the JSL website could benefit from a feature comparison section. Venia, for instance, proposed a section that highlights the unique advantages of JSL compared to other JavaScript frameworks like React, Vue, or Angular. This comparative

content would provide potential users with a clearer understanding of JSL's strengths and help them make informed decisions about adopting the framework.

General User Preferences

Across the interviews, many participants expressed a preference for features and design principles found on the React website. Elements such as clear setup instructions, structured information presentation, and interactive tools were frequently mentioned. Adopting similar features and approaches could make the JSL website more intuitive and appealing to its target audience.

Summary of Key Improvement Areas

1. Initial Setup and Onboarding

- Develop comprehensive installation guides and beginner-friendly tutorials.
- Create an engaging landing page that introduces JSL and its unique features.

2. Navigation Enhancements

- Improve the navigation bar with interactive elements and clear visual indicators.
- Add a search bar for quick access to specific functions or documentation.
- Ensure prominent call-to-action buttons for downloads and returning to the home page.

3. Code Presentation and Editing

- Simplify code examples with annotations and step-by-step explanations.
- Integrate a live code editor or playground for real-time coding and testing.
- Include hands-on exercises to reinforce learning.

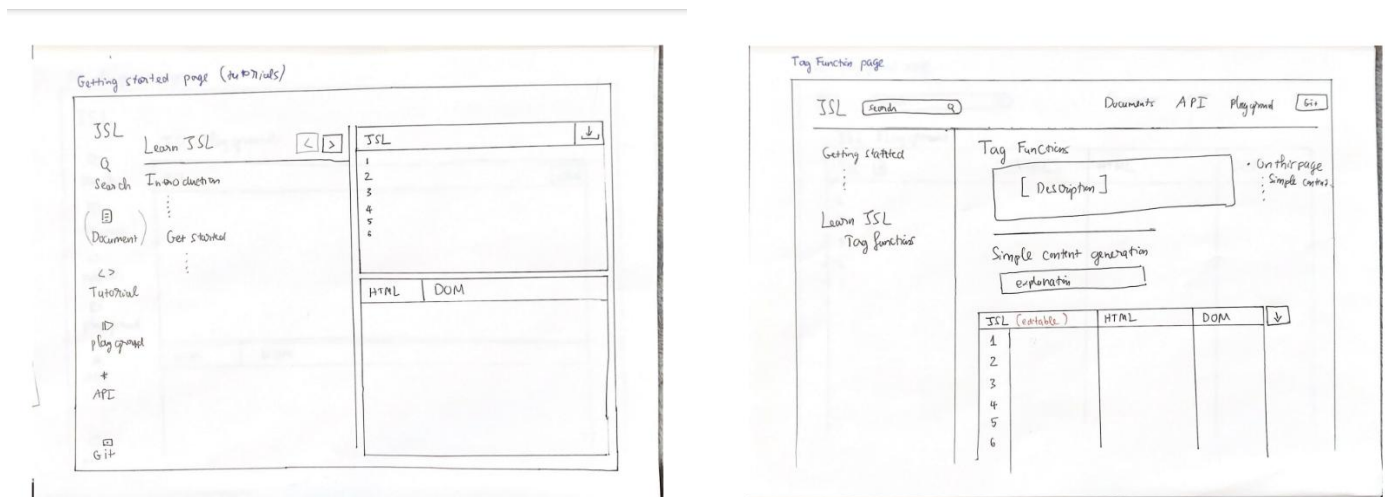
4. User Interface Design

- Organize content to reduce information overload and enhance readability.
- Ensure all interactive elements are clearly identifiable and consistent in design.

For a detailed overview of the features highlighted by users, refer to **Appendix II**.

3.2.2 Low-fidelity (paper) prototype

The low-fidelity (paper) prototype was an essential step in the redesign process of the JSL website, serving as an initial visual representation of the proposed layout and structure. This prototype allowed me to quickly experiment with different design concepts and gather feedback without committing to complex, high-cost design or development. The primary goal was to explore various layout options, content organization strategies, and navigation structures to identify which concepts would best address the pain points identified in earlier research.



I began by sketching multiple versions of the website's key pages, including the homepage, navigation bar, and content sections. These sketches were created on paper, which provided the flexibility to rapidly iterate and refine design ideas. By using simple shapes and annotations, I was able to clearly illustrate different approaches to organizing content, such as grouping related information together and simplifying the navigation bar. The low-fidelity nature of these prototypes allowed me to focus on functionality rather than aesthetics, ensuring that the core features and structure were tested and refined before advancing to higher-fidelity designs.

Once the paper prototypes were created, I presented them to a small group of users for feedback. During this process, I focused on observing how users interacted with the paper designs and whether they were able to navigate the content intuitively. Their feedback helped me understand which elements were clear and which needed further refinement.

For example, users found it easier to navigate designs with clearly labeled categories and a more streamlined layout, while more complex, cluttered designs caused confusion.



The paper prototype also facilitated discussions on potential improvements. Users were able to suggest changes such as simplifying the language used in navigation labels or adding more visual cues to guide users through the content. These insights were critical in shaping the next phase of the design process, ensuring that the final layout would better meet the needs of users with varying levels of experience.

In summary, the low-fidelity prototype played a crucial role in the iterative design process by allowing me to test and refine layout ideas early on.

For detailed insights, refer to the Paper Prototype (Low-Fidelity) Usability Testing Report – **Appendix V**.

3.4 Phase 3: Develop

In this section, I describe Phase 3 of the project, where the focus shifts to the development of the JSL website's high-fidelity prototype and further refinement of key features, such as the search bar and playground page. Following the insights gained from the Figma prototype (Appendix I) and research on user needs, Phase 3 involves translating the initial design concepts into a fully interactive version that can be tested for usability

and functionality. This phase is critical in bridging the gap between conceptual designs and a functional user interface that meets the needs of JSL users at all experience levels.

The high-fidelity prototype was developed using Figma to create a polished and interactive version of the JSL website. The primary goal was to refine the layout, navigation, and content organization based on the research and feedback from the earlier phases. By incorporating detailed design elements, such as color schemes, typography, and interactive components, this phase aimed to provide a realistic preview of the final product, enabling more accurate user testing. Additionally, the prototype's features, including a simplified navigation bar and logically grouped content, were designed to reduce cognitive load and improve user experience.

Furthermore, this phase also includes the research on the search bar functionality and the playground page design, both of which are crucial components for enhancing user interaction on the JSL website. The search bar and playground serve as essential tools for users to easily locate resources and experiment with JSL code. The research focused on analyzing best practices from other popular frameworks like React, Angular, Vue, Node.js, and TypeScript, examining their search features and playground setups to identify elements that could be integrated into the JSL website. Based on the findings, specific recommendations were made to enhance these features, including improvements in autocomplete functionality, filtering options, and adding interactive tools to the playground.

3.4.1 High-fidelity (Figma) prototype

The high-fidelity prototype of the JSL website was developed using Figma to create a more polished and interactive version of the initial design concepts. Building on the insights gained from user research, including surveys, interviews, and the low-fidelity paper prototype, the Figma prototype aimed to refine the layout, navigation, and content organization to better meet user needs. Figma's robust features allowed me to implement detailed design elements, including color schemes, typography, and interactive components, providing a more realistic preview of the final product. This step was critical in transitioning from conceptual designs to a functional prototype that could be tested for usability and effectiveness.



The native JavaScript templating framework for fast, efficient web applications.

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The Figma prototype incorporated several key design improvements, such as a simplified navigation bar, logically grouped content, and a consistent layout across pages. I focused on creating a clear and user-friendly interface by reducing cognitive load, ensuring that users could quickly locate important sections like tutorials, documentation, and installation guides. Interactive elements, such as hover effects and clickable buttons, were also included to simulate real user interactions. This allowed for more accurate user testing, where participants could engage with the prototype in a way that closely resembled the final website.

Getting Started

[Introduction](#)[Quick Start](#)

Tutorial

[A simple ToDo List](#)[How this page is produced](#)[How the DOM trees are made](#)[Syntax highlighting with JSL](#)

Tag Functions

Insert Modes

[jsl.inner](#)[jsl.outer](#)[jsl.eof](#)[jsl.bof](#)[jsl.before](#)[jsl.after](#)[jsl.serial](#)

Event Handlers

[onevent properties](#)

Quick Start

Welcome to JSL! This guide will get you set up and running in just a few steps, so you can start building efficient web applications.

Step 1: Installation

Add JSL to your project by linking the library through a CDN:

```
<script src="https://cdn.example.com/jsl.min.js"></script>
```

Step 2: Set Up Your First Template

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JSL Example</title>
  <script src="http://jsl3.codemax.net/jsl3.1.js"></script>
</head>
```

ON THIS PAGE

[Step 1: Installation](#)[Step 2: Set Up Your First Template](#)

Once the high-fidelity prototype was ready, I conducted usability testing with a small group of users to gather feedback on the updated design. By observing how users interacted with the prototype, I was able to identify any remaining pain points, such as areas of confusion in navigation or unclear content grouping. The high-fidelity nature of the prototype allowed for a more detailed evaluation of these elements, providing valuable insights that will inform the next stages of the redesign process.

For detailed insights, refer to the Figma Prototype (High-Fidelity) Usability Testing Report – **Appendix VI**.

3.4.2 Research on Search bar and Playground page

In this section, I explore the importance of conducting research on the search bar functionality and the Playground page design for the JSL website. Both of these features play a critical role in enhancing the user experience, particularly for users who are learning JSL. The reason for conducting research on these fields is to ensure that the JSL website provides an intuitive and effective platform for users at all skill levels. A well-designed search bar improves accessibility, allowing users to quickly locate the resources and documentation they need. Similarly, a functional and engaging Playground page offers an interactive learning environment where users can experiment with code in real time, reinforcing their understanding of JSL concepts.

The research into the search bar focused on identifying best practices from other programming framework websites such as React, Angular, Vue, Node.js, and TypeScript. This analysis helped pinpoint key features, such as autocomplete, categorization, and visual design, that could make the JSL search bar more efficient and user-friendly. Understanding the strengths and weaknesses of existing search bar designs allows me to incorporate elements that will meet the needs of both novice and advanced users, ensuring they can find the information they need quickly and easily.

Similarly, the research on the Playground page was essential for understanding how interactive coding environments support learning. By evaluating the playground features on Angular, Vue, and TypeScript websites, I identified key design elements such as live editing, real-time feedback, and clear, beginner-friendly examples. These features are crucial for making the Playground page an effective tool for users to practice and

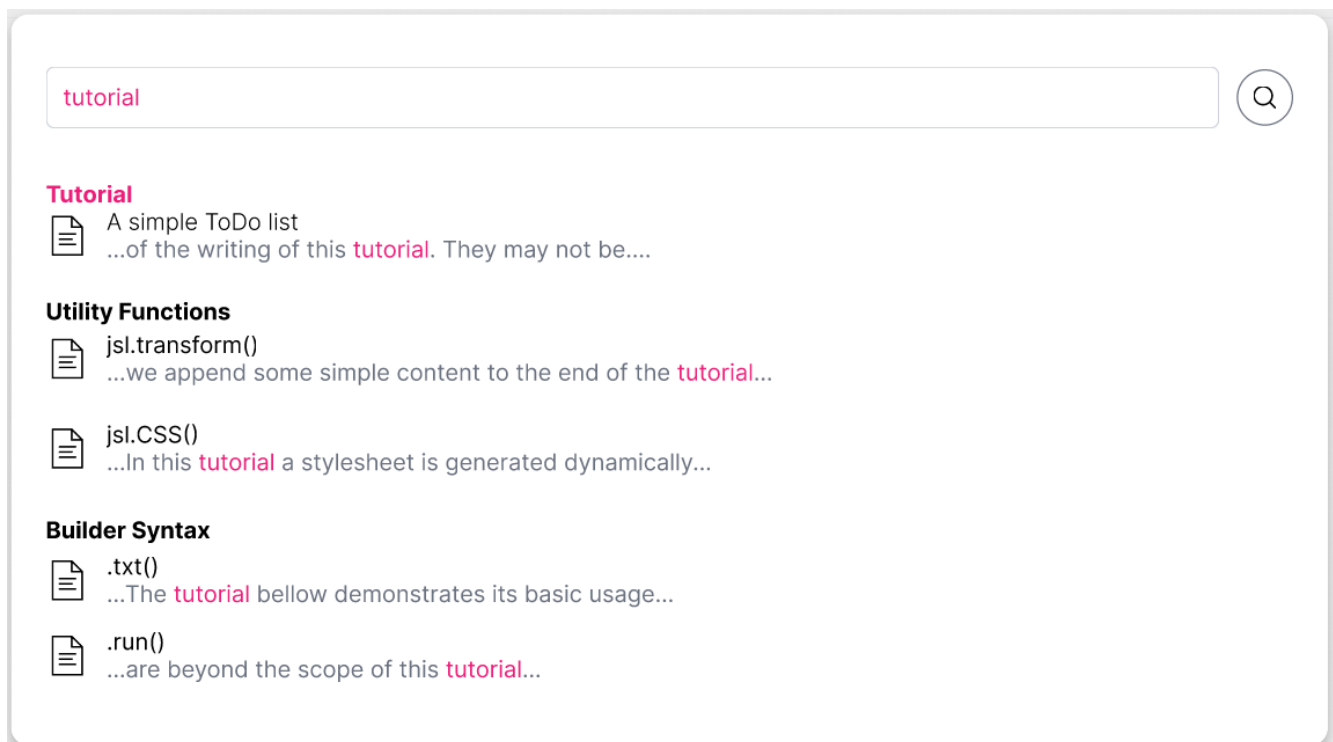
experiment with JSL code. By incorporating these insights, I can create a Playground page that fosters a more engaging and interactive learning experience.

3.4.2.a Research on Search bar

This research focuses on the functionality and effectiveness of search bars across five widely used programming framework websites: React, Angular, Vue, Node.js, and TypeScript. The goal of this analysis was to evaluate the design, usability, and key features of the search bars on these sites, in order to identify best practices that could be applied to enhance the JSL website's search feature. By studying how these frameworks implement their search functionalities, I aimed to uncover strengths and weaknesses that would inform improvements to the JSL website's search bar, ultimately leading to a more efficient and user-friendly experience for its users.

The research involved reviewing the search bars on each website, paying particular attention to aspects such as ease of use, search accuracy, interface design, and advanced features like autocomplete and filtering. I conducted a thorough analysis to determine how well each search bar supported users in finding content, including tutorials, documentation, and troubleshooting resources. The findings highlighted several key elements that contributed to an effective search bar, including predictive autocomplete suggestions, categorization and filtering options, and a prominent, easy-to-locate search bar placement.

The results of this research revealed a few common strengths across the websites analyzed. Autocomplete functionality, for instance, was a notable feature on many sites, allowing users to quickly find relevant content as they typed. In addition, category-based filtering, seen on websites like Angular, helped users narrow down search results to specific types of content, such as tutorials or documentation. However, there were also areas for improvement, such as the lack of advanced filtering on some sites and the need for more comprehensive autocomplete for less common search terms.



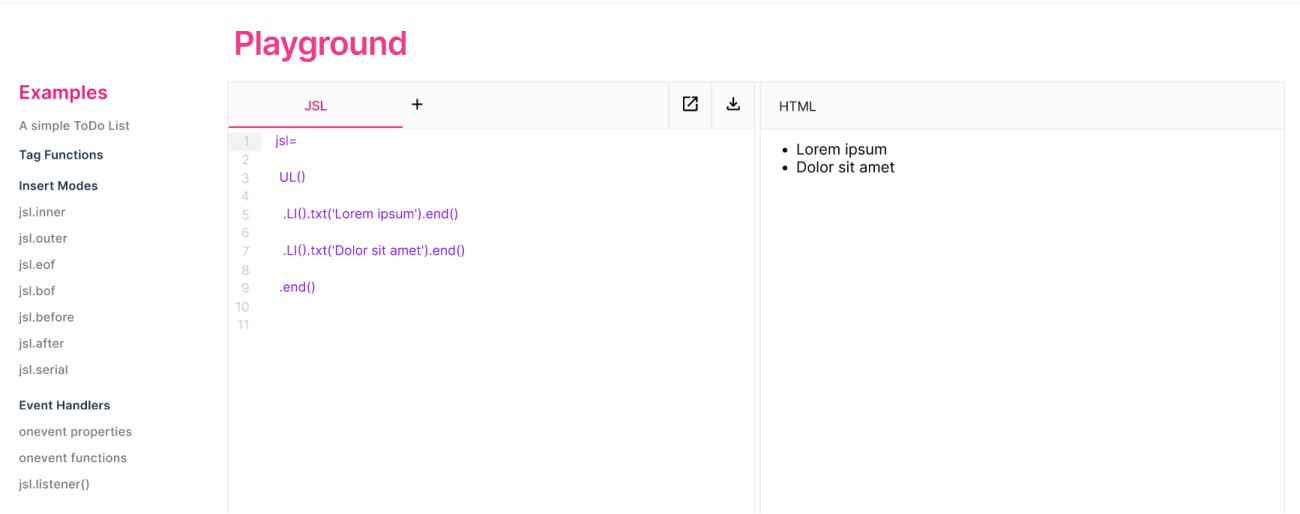
Based on these findings, I propose several recommendations for the JSL website's search bar. Key improvements include integrating autocomplete suggestions, adding category-based filters for more specific content searches, and ensuring that the search bar is placed in a prominent location for easy access. Additionally, simplifying the visual design while enhancing functionality will help create a search experience that is both efficient and intuitive for users of all skill levels.

For a detailed overview, see the Research on Search Bar Design – **Appendix VII**.

3.4.2.b Research on Playground page

This research focuses on the design and functionality of the Playground page, an interactive feature that allows users to experiment with code in real-time. The aim of this research is to evaluate how other successful programming frameworks implement their playgrounds and to gather insights for enhancing the Playground page on the JSL website. I analyzed the playground features on five widely-used frameworks: Angular, Vue, TypeScript, React, and Node.js. By examining the strengths and weaknesses of each platform's playground, this research identifies key design elements that could improve the user experience on the JSL website, making it more engaging and educational for users with varying levels of experience.

In this report, I evaluate the playground features across the selected websites, focusing on their layout, interactivity, and the quality of code examples provided. I also analyze the usability of each playground, particularly how easily users can navigate the environment and receive feedback on their code. Additionally, I explore the accessibility of the playgrounds, considering how well they cater to both beginners and advanced users. The research was structured to assess the following criteria: layout simplicity, real-time code editing, example quality, and advanced features such as debugging tools and customizable settings.



The findings of this research reveal several best practices, such as the use of split-screen layouts, live editing with real-time feedback, and beginner-friendly examples. At the same time, certain areas for improvement were identified, including the need for more advanced features like debugging tools and improved example libraries for complex use cases. Based on these insights, I propose a set of recommendations for enhancing the Playground page on the JSL website. These include incorporating a side-by-side layout, offering live feedback, providing clear and detailed examples, and adding debugging tools to support users in troubleshooting and learning.

For detailed findings, refer to the Research on the Playground Page – **Appendix VIII**.

3.5 Phase 4: Deliver

3.5.1 Implementing Redesign Features with JSL3

To implement the redesigned features of the JSL3 website, I followed a clear and systematic process, starting with the Figma prototype and turning it into a fully functional website using the JSL3 framework. Here's how I approached it step by step:

Setting Up the Development Environment

I began by preparing the development environment to ensure it was compatible with the JSL3 framework. This included installing all necessary dependencies, configuring the JSL3 workspace, and organizing my tools, such as a code editor and version control, to streamline the process.

Breaking Down the Figma Prototype

I carefully analyzed the Figma design to identify its key elements, like headers, navigation bars, buttons, and content sections. By breaking the prototype into smaller, manageable components, I could map each part to the required HTML structure and CSS styles.

Building the Website Structure

Using JSL3, I created the website's foundational structure. I followed a modular approach, designing reusable components for elements like the navigation bar, footer, and content sections. This made the code cleaner and easier to maintain.

Styling the Design

Next, I focused on applying styles to bring the Figma design to life. I used CSS along with JSL3's utility classes to replicate the colors, typography, and spacing shown in the prototype. I frequently cross-checked the design in Figma to ensure the final layout matched the prototype's look and feel.

Adding Interactivity

I implemented interactive features, such as hover effects, dropdown menus, and smooth transitions, to make the website more engaging. For dynamic functionality, like button

clicks or menu toggling, I used JavaScript within the JSL3 framework to handle user interactions.

```
<script type="module" defer>
  import {DEFHEADER} from "../header-footer.js";
  const js1HashChange=js1.eventSource();

  window.addEventListener('hashchange',(e)=>{
    js1HashChange(location.hash.substr(1))
  });

  'body'.js1.eof = [
    DEFHEADER(BUTTON('XXXXXX')),
    js1 = DIV({class: 'main-content'},
    IMG({src: './images/js13-logo.jpg', alt: 'Logo', class: 'logo'}),
    DIV({class: 'tag'},
      A('JSL',SUB(3)),
      P('The native JavaScript templating framework for fast, efficient web applications.')
    ),
    DIV({class: 'button-container'},
      BUTTON({class: 'btn-primary', onclick: "window.location.href='docs.html'", 'Learn JSL',}),
      // BUTTON({class: 'btn-secondary', onclick: "window.location.href='docs.html'", 'Why JSL?'}
    )
  ),
  FOOTER({class: 'footer'},
    P('© 2020 Ambianti B.V.'),
    A({href: 'https://github.com'}, IMG({src: './images/github.png', alt: 'GitHub'})),
    A({href: 'https://twitter.com'}, IMG({src: './images/twitter.png', alt: 'Twitter'})),
    A({href: 'https://linkedin.com'}, IMG({src: './images/linkedin.png', alt: 'LinkedIn'}))
  )
];
</script>
```

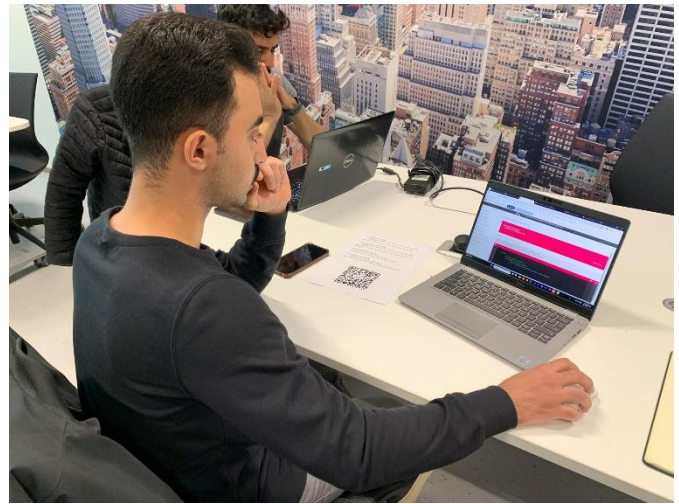
Testing and Debugging

Once the main features were built, I thoroughly tested the website to ensure everything worked as expected. This included checking the layout and functionality. I also resolved any bugs or inconsistencies during this phase.

3.5.2 Usability Testing and Iterative Refinement

3.5.2.a First JSL3 redesigned version usability testing

The primary objective of this testing was to assess how well the redesign addressed key user pain points, improved navigation, and enhanced overall usability. The redesigned version introduced changes to the layout, navigation structure, and interactive elements, all of which aimed to make the website more intuitive and user-friendly. By gathering feedback from four users with varying levels of experience with JSL, I sought to understand how effectively these improvements met user needs and identify areas for further refinement.



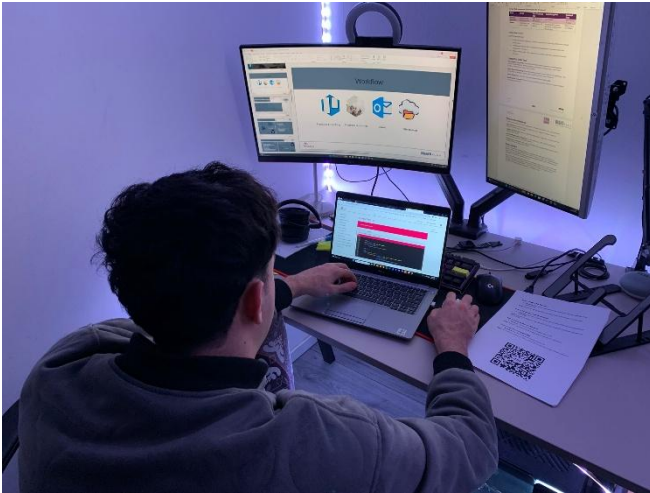
The testing was conducted through a combination of task-based testing, cognitive walkthroughs, and post-test feedback collection. Users were asked to complete specific tasks, such as navigating the documentation, finding tutorials, and accessing installation guides. Their interactions were observed, and any challenges or confusion they faced during the process were noted. Additionally, a cognitive walkthrough was conducted to assess how well the design supported user workflows and whether any ambiguities in navigation or interactivity existed. After completing the tasks, users provided feedback on the redesign's strengths and suggested improvements. This comprehensive approach provided both qualitative and quantitative insights into the website's usability.

The results of the usability testing revealed several key strengths in the redesigned JSL3 website, including a more streamlined navigation bar and a logically organized content structure, which helped users find information more efficiently. Users also appreciated the interactive design elements, such as hover effects and consistent button placement, which contributed to a more engaging experience. However, some areas for improvement were identified, such as the need for clearer code example displays, more intuitive sidebar design, and enhanced responsiveness for mobile devices. Additionally, users suggested the addition of more customizable options, like background color preferences for code examples, and the inclusion of a GitHub icon in the header for quicker access to external resources.

For detailed insights, refer to the Usability Testing Report for the First Redesigned Version of the JSL3 Website – **Appendix IX**.

3.5.2.b Second JSL3 redesigned version usability testing

After completing the first round of usability testing on the redesigned JSL3 website, I focused on developing two critical features: the search bar and the Playground page.



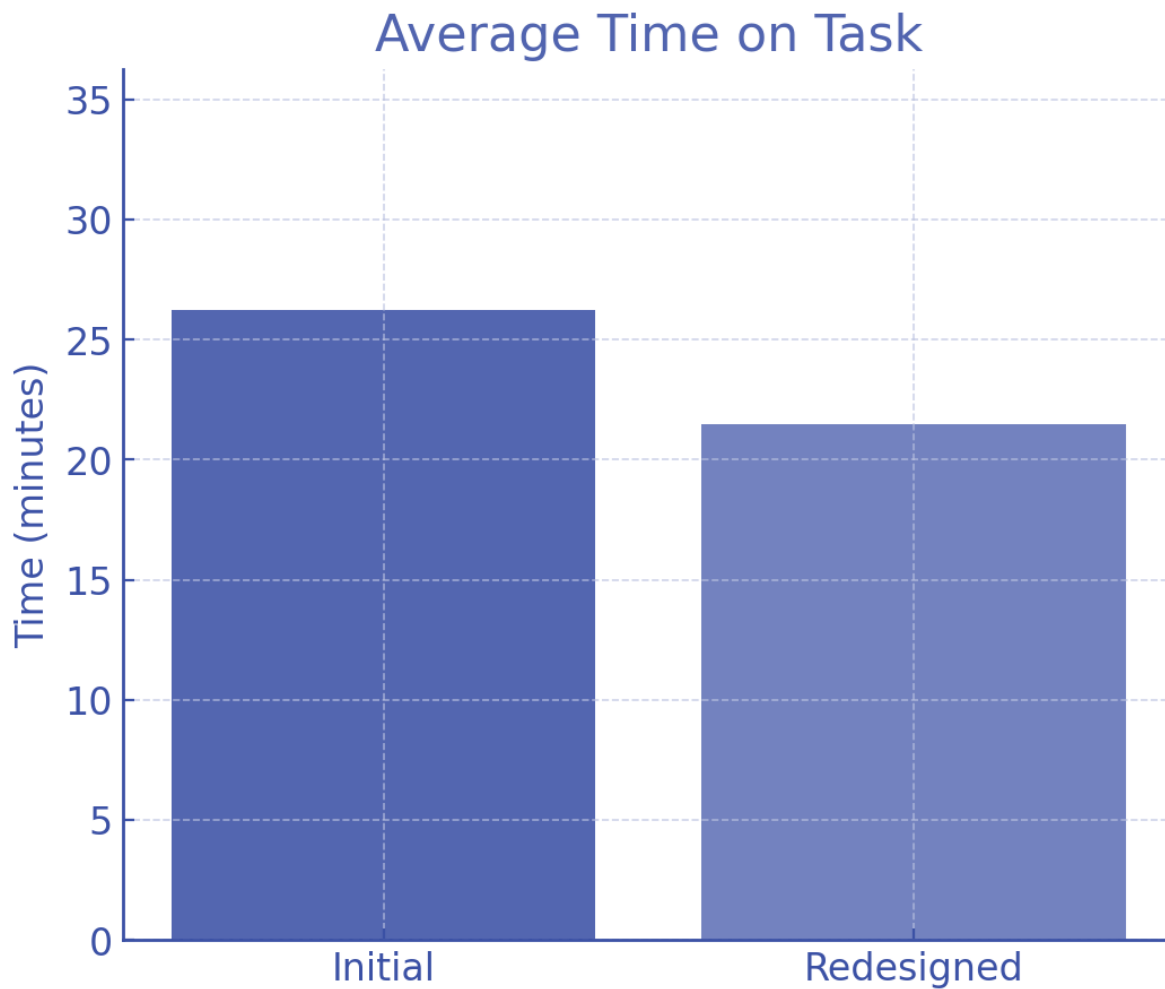
The search bar was designed with an autocomplete function to help users quickly locate relevant resources, such as tutorials or documentation. I implemented this feature by writing code that dynamically filtered and displayed results as users typed. The functionality allowed users to see real-time suggestions, improving their ability to navigate the website efficiently. I tested the search bar thoroughly to ensure smooth operation, handling edge cases like partial matches or misspellings, and optimizing its performance for user convenience.

For the Playground page, I used JSL3 to build an interactive coding environment where users could write and test JSL code in real time. I created a split-screen layout, with one side dedicated to the code input and the other displaying the output. The design was kept clean and intuitive to ensure it provided an engaging and effective learning experience for all users.

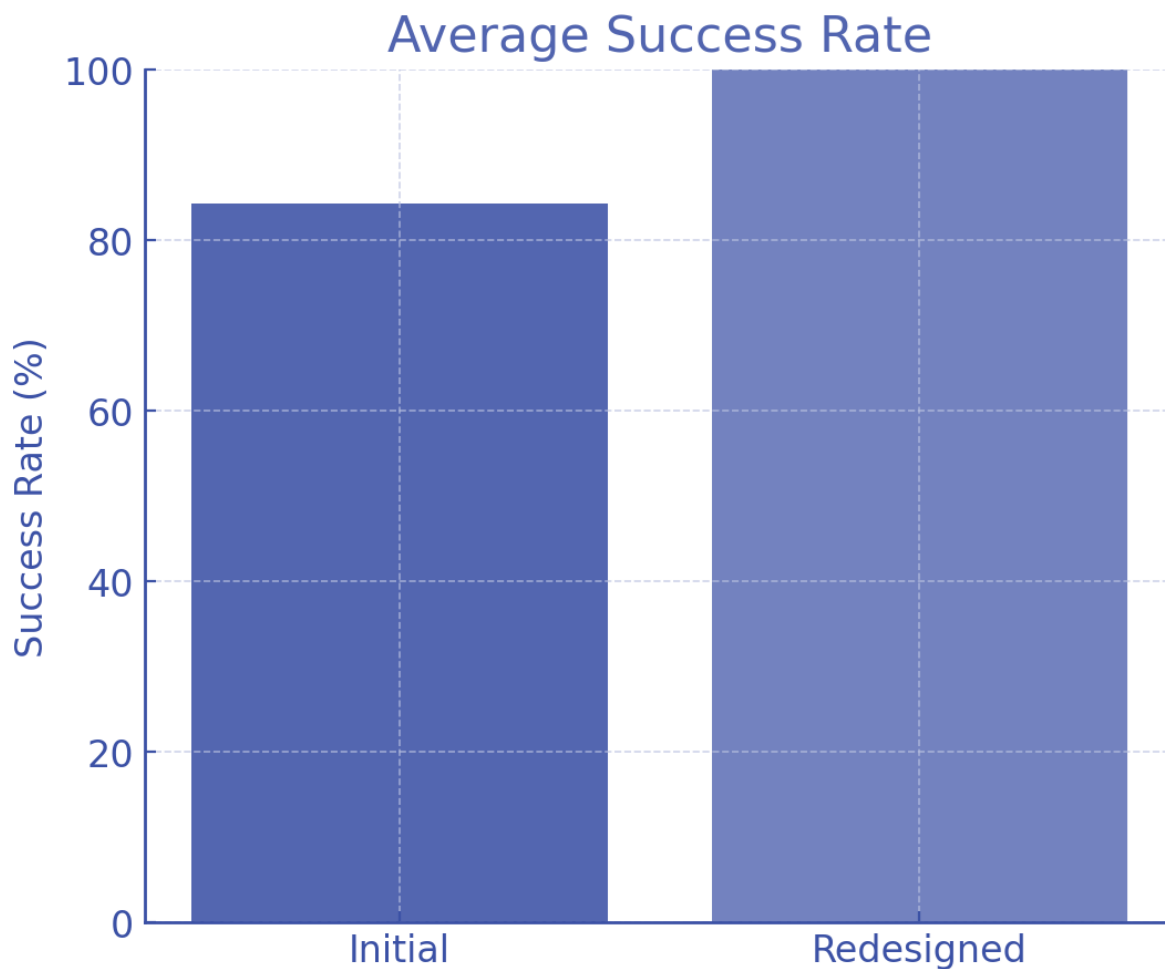
Efficiency and Effectiveness After Redesign

The redesigned website demonstrated significant improvements in both efficiency and effectiveness. Participants showed a marked decrease in the time required to complete tasks after the redesign. The average time on task decreased from approximately 26.88 minutes in the initial testing to 21.50 minutes in the redesigned version, representing a

20% reduction. This improvement indicates that users could navigate and complete tasks more efficiently, reducing the overall time spent on the website.



The success rate of task completion increased significantly, with the initial testing showing an average success rate of 81.25%. After the redesign, the success rate reached 100%, indicating an 18.75% improvement. This increase reflects a more intuitive user interface that allowed participants to complete tasks with greater ease and fewer errors.



Participant feedback further highlighted the improvements. Navigation was significantly enhanced with the introduction of clearer paths and logical category arrangements. The addition of hover effects made the user experience more intuitive. Code examples were immediately visible, with consistent backgrounds that facilitated understanding and testing. The website's responsiveness across various devices was highly appreciated, making it more accessible and user-friendly.

Specific improvements included the addition of navigational buttons on the introduction page to guide users through the learning path. The sidebar was reorganized logically, with hover indicators added to show active selections. Enhanced search functionality greatly improved the ease of finding specific functions.

CHAPTER 4 :

PROJECT EVALUATION AND PERSONAL REFLECTIONS

4.1 Project Evaluation

The JSL3 website redesign project allowed me to address a series of critical usability issues and deliver a more user-friendly, intuitive platform. Through careful planning and adherence to the Double Diamond design process, I was able to ensure the redesign met the needs of users ranging from beginners to advanced developers.

One of the primary achievements of this project was improving navigation and ease of use. The reorganized navigation bar, along with the addition of a search function, enabled users to find resources more efficiently. Interactive features, such as the live code editor and enhanced code examples, proved to be valuable additions that met the needs of diverse user groups.

The iterative approach I adopted ensured continuous improvement through user feedback. Usability testing results demonstrated that the redesign effectively reduced user challenges, increased engagement, and clarified the onboarding process for new users. This evaluation confirms that the project fulfilled its objectives, making the JSL3 website easier to use and more helpful for its target audience.

4.2 Personal Reflections

This project has been an invaluable learning experience for me, both professionally and personally. As someone with a keen interest in user experience design and front-end development, the opportunity to redesign the JSL3 website challenged me to think critically and creatively.

One of the most rewarding aspects of this project was working directly with users. Their feedback guided my decisions and highlighted the importance of empathy in design. I learned how to translate their needs into tangible features and how iterative design can lead to meaningful improvements.

This internship also allowed me to strengthen my technical skills, particularly in prototyping with Figma and implementing interactive features in a real-world setting. I gained hands-on experience in usability testing and data analysis, which deepened my understanding of how users interact with digital platforms.

On a personal level, I developed better time management and problem-solving abilities. Balancing the constraints of time and resources taught me to prioritize tasks effectively while maintaining focus on the project's overall goals.

4.3 Conclusion

In conclusion, the redesign of the JSL website was a successful project that addressed key usability challenges and enhanced the overall user experience. Through a user-centered approach, I identified and resolved several pain points, such as confusing navigation, overwhelming information, and the lack of beginner-friendly resources. By implementing a clearer navigation structure, interactive learning tools, and more accessible content, the website now caters better to users of all skill levels.

The iterative design process, guided by user feedback, ensured that the final product met the needs of its diverse audience. The new features, such as the search bar and interactive Playground page, significantly improved the site's functionality and user engagement. This project not only improved the JSL website but also provided me with invaluable insights into user experience design, usability testing, and front-end development.

4.4 Recommendations

Continuous User Feedback: Throughout the project, user feedback played a crucial role in identifying areas for improvement and refining the design. By regularly gathering and analyzing user feedback, I was able to address pain points and enhance the user experience. This iterative approach ensured that the website evolved in response to user needs, making it more intuitive and effective. Continuous feedback will help maintain this momentum, allowing to identify new pain points and opportunities for enhancement, ensuring the website remains relevant and user-friendly.

Community Building: The project revealed that users often benefited from sharing their experiences and solutions with others. However, the absence of a dedicated platform for such interactions limited their ability to collaborate and learn from one another. Creating forums or discussion boards will foster a stronger user community, where individuals can ask questions, share insights, and collaborate on projects. This sense of community will provide additional support for learners and enhance their engagement with the JSL framework.

AI Assistant Integration: During usability testing, users frequently encountered common questions and challenges that could be addressed more efficiently with real-time support. An AI assistant could provide immediate answers, guide users through complex tasks, and offer personalized learning recommendations based on their interactions. This feature would not only enhance the overall user experience but also reduce the support burden on the development team, allowing them to focus on further improvements and innovations.

CHAPTER 5 : LEARNING OUTCOMES

Learning Outcome 1: Professional Duties

[You carry out the professional duties on a junior bachelor level resulting in professional products in line with the IT-area you are working in.]

During my internship, I undertook a comprehensive project to redesign the JSL website, requiring me to perform professional duties at a junior bachelor level. The primary objective was to enhance the website's usability and appeal to a broad audience, ranging from beginners to experienced developers. My responsibilities encompassed conducting usability testing (**Appendix I**) & (**Appendix IX**), developing prototypes (**Appendix V**) & (**Appendix VI**), and implementing new features (**Appendix II**), such as improved navigation, a search bar, and interactive learning tools.

I began by organizing usability tests with a diverse group of users (**Appendix I**), gathering invaluable feedback on the website's navigation and content structure. This feedback highlighted key areas for improvement and guided the design process. I carefully analyzed user interactions, noting common pain points and areas where users struggled to navigate or understand content. This data was instrumental in shaping the redesign strategy and ensuring that user needs were prioritized.

Subsequently, I created both low-fidelity (**Appendix V**) and high-fidelity (**Appendix VI**) prototypes using Figma. These prototypes allowed me to experiment with different layout options and gather further feedback before finalizing the design. Each iteration was refined based on continuous user input, ensuring that the final design was both functional and aesthetically pleasing. This iterative process ensured that all features were tested and optimized for usability before implementation.

Using the JSL3 framework, I implemented features that directly addressed the identified pain points. The new navigation system and interactive elements significantly improved the user experience, a result confirmed through follow-up usability tests that demonstrated increased user satisfaction and efficiency. This phase also involved coding and integrating new functionalities, ensuring that the technical aspects of the redesign aligned with the project's goals.

In addition to the technical work, I documented the entire process, providing detailed reports on each phase of the project. This documentation served as a valuable resource for showcasing the progress made and the rationale behind each design decision.

Learning Outcome 2: Situation-Orientation

[You apply your previously acquired knowledge and skills in an authentic context to deliver relevant results for the project and company.]

In addressing the challenges presented by the JSL3 website project, I applied my existing knowledge and skills to solve real-world problems effectively. The website initially suffered from poor navigation, overwhelming content, and a lack of resources for beginners, which hindered user engagement and learning.

I employed various research methods, including extensive usability testing (**Appendix I**), surveys, and a competitive analysis (**Appendix III**) of other frameworks like React, Vue, and Angular. This research provided actionable insights into user needs and preferences. I analyzed the strengths and weaknesses of these frameworks, identifying best practices that could be adapted to the JSL3 website. For example, the simplicity of React's navigation and the interactive learning tools of Vue inspired features in the JSL3 redesign.

Based on these insights, I developed a search bar (**Appendix VII**) and an interactive Playground page (**Appendix VIII**), which directly addressed user difficulties in finding resources and understanding code examples. These features were designed to improve the user experience by making it easier to locate information and practice coding in a hands-on environment. The effectiveness of these features was validated through positive user feedback and measurable improvements in task completion rates during usability testing.

The implementation of these features required careful consideration of both design and functionality. I ensured that the search bar was intuitive and responsive, providing users with relevant results quickly. The Playground page was developed to offer a seamless coding experience, allowing users to experiment with JSL3 code and see immediate results. This hands-on approach facilitated learning and increased user engagement,

demonstrating my ability to adapt my skills to the project's context and deliver impactful results.

Learning Outcome 3: Future-Oriented Organisation

[You explore the organisational context of your project, make business, sustainable and ethical considerations and manage all aspects of the execution of the project.]

The project required an understanding of the organizational context, including business goals, sustainability, and ethical considerations. The redesign aimed to enhance the competitiveness of the JSL framework while supporting the company's growth objectives.

I focused on creating a user-friendly design that could be easily maintained and updated, ensuring long-term sustainability. This approach minimized future resource expenditure and positioned the website for continued relevance and adaptability. The design was structured to allow for scalability, ensuring that new features (**Appendix II**) and content could be added without disrupting the user experience.

Additionally, ethical considerations played a crucial role in the design process. I ensured that the website was inclusive, catering to users with varying levels of technical expertise. This inclusivity broadened the framework's reach, aligning with the company's goal of engaging a wider user base.

Throughout the project, I maintained close communication with JSL3 author, providing regular updates and incorporating his feedback into the design. This collaborative approach ensured that the final product aligned with the company's strategic goals and delivered value to both users and the business.

Learning Outcome 4: Investigative Problem Solving

[You take a critical look at your project from different perspectives, identify problems, find an effective approach and arrive at appropriate solutions.]

I adopted a systematic approach to problem-solving, critically analyzing the JSL3 website from multiple perspectives to identify and address key usability issues. My goal was to ensure that the redesign was not only functional but also user-centric.

Through usability testing (**Appendix I**) and direct user feedback (**Appendix II**), I pinpointed major challenges such as confusing navigation and complex code presentations. This analysis led to the development of multiple prototypes (**Appendix V**) & (**Appendix VI**), each iteration informed by user insights. For example, introducing a search bar and a streamlined navigation system directly addressed user frustrations, resulting in a more intuitive and functional website.

The iterative refinement process was crucial in solving complex problems. Each round of testing provided new insights that were used to refine the design further. For instance, early prototypes revealed that users struggled with the layout of the documentation pages. By reorganizing the content and simplifying the navigation, I was able to improve the overall user experience. This methodical approach ensured that each problem was thoroughly understood and effectively addressed.

Additionally, I leveraged data analytics to gain deeper insights into user behavior. By analyzing metrics such as time spent on pages and click-through rates (**Appendix XI**), I identified areas where users were encountering difficulties. This data-driven approach allowed me to make informed decisions and prioritize changes that would have the most significant impact on the user experience.

To complement these efforts, I conducted a competitive analysis (**Appendix III**) to benchmark the JSL3 website against other frameworks. This analysis provided valuable context and highlighted opportunities for improvement. By incorporating best practices from industry leaders, I ensured that the redesign was both innovative and aligned with user expectations. This comprehensive approach to problem-solving demonstrated my ability to tackle complex challenges with a user-focused mindset.

Learning Outcome 5: Personal Leadership

[You are entrepreneurial around your projects and personal development, you pay attention to your own learning ability and keep in mind what kind of IT professional and/or what type of positions you aspire to.]

The internship provided an opportunity for me to demonstrate personal leadership by taking ownership of the project and driving it from concept to completion. I adopted an entrepreneurial mindset, focusing on both the project's success and my own professional growth. I set clear goals for the redesign and continuously sought ways to improve both the project outcomes and my own skills.

In addition to technical skills, I developed strong project management abilities. I effectively managed timelines (Gantt chart), resources, and stakeholder expectations, ensuring that the project was delivered on time and met all requirements. This experience provided valuable insights into the complexities of managing a large-scale project and reinforced the importance of clear communication, planning, and adaptability.

Throughout the internship, I paid close attention to my learning ability, identifying areas where I could grow and improve. This included enhancing my skills in user experience design, prototyping, and front-end development. I also reflected on my career aspirations, considering the type of IT professional I aim to become. This project helped me solidify my interest in user-centered design and front-end development, guiding my future career path.

Learning Outcome 6: Targeted Interaction

[You determine which partners play a role in your project, collaborate constructively with them and communicate appropriately to achieve the desired impact.]

Effective collaboration and communication were critical to the project's success. I engaged with key stakeholders, including the JSL author and end users, to ensure that the redesign met both technical requirements and user expectations.

I maintained regular communication with stakeholders, providing updates on the project's progress and incorporating their feedback into the design. This collaborative approach enabled me to make informed decisions and deliver a website that achieved the desired impact. By organizing regular meetings and presenting detailed reports, I kept all parties informed and aligned on the project's goals.

Additionally, I organized usability testing sessions with users from diverse backgrounds **(Appendix I) & (Appendix IX)**, gathering their feedback and making necessary adjustments. This inclusive approach ensured that the redesign addressed the needs of a wide range of users, from beginners to experienced developers. The feedback collected during these sessions was invaluable in refining the design and enhancing the overall user experience.

By fostering strong relationships with stakeholders and maintaining open lines of communication, I was able to deliver a successful project outcome. This experience has highlighted the importance of targeted interaction in achieving project goals and has enhanced my skills in collaboration, communication, and stakeholder management.

S U M M A R Y

This report outlines the JSL3 website redesign project I completed during my internship at Ambianti B.V. The aim of the project was to enhance the website's usability, making it more intuitive for both novice and experienced users. I followed the Double Diamond design framework, which divided the project into four phases: Discover, Define, Develop, and Deliver.

In **Chapter 1**, I introduced Ambianti, explaining its focus on advanced building materials and the JSL framework's role within the company. This chapter set the stage for understanding the significance of the redesign project.

Chapter 2 provided an overview of the assignment, starting with an analysis of the existing website's shortcomings, such as poor navigation, lack of beginner-friendly resources, and insufficient guidance for users. I described the project's objectives and outlined the research methodologies employed, including user testing, surveys, and competitive analysis of frameworks like React, Vue, and Angular. Constraints such as time and technical limitations were also discussed.

In **Chapter 3**, I detailed the project's design and implementation process, guided by the Double Diamond model. The Discover phase involved identifying user pain points and drawing inspiration from competitive analysis. The Define phase translated research insights into actionable objectives, focusing on improving navigation, simplifying code examples, and creating a more user-centered design. During the Develop phase, I created and tested low- and high-fidelity prototypes, incorporating user feedback to refine features such as the search bar and interactive Playground page. Finally, in the Deliver phase, I implemented the redesigned features and conducted iterative usability testing to ensure functionality and user satisfaction.

Chapter 4 evaluated the project's outcomes, highlighting achievements such as improved navigation, enhanced learning resources, and interactive tools. I also reflected on my personal and professional growth, emphasizing skills in user experience design, prototyping, and problem-solving.

This project successfully transformed the JSL3 website into a more effective platform for users while providing me with invaluable experience in front-end development and user-centered design.

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APPENDICES

- **Appendix I:** JSL3 initial usability testing report
KDN-Portfolio/Reports/1_JSL3 initial usability testing report
- **Appendix II:** Features highlighted by users
KDN-Portfolio/Reports/2_Features highlighted by users
- **Appendix III:** Competitive analysis React - Vue - Angular
KDN-Portfolio/Reports/3_Competitive analysis React - Vue - Angular
- **Appendix IV:** New Setup& layout for JSL3
KDN-Portfolio/Reports/4_New Setup& layout for JSL3
- **Appendix V:** Paper Prototype [Low fidelity] Report
KDN-Portfolio/Reports/5_Paper Prototype [Low fidelity] Report
- **Appendix VI:** Figma Prototype [High fidelity] Report
KDN-Portfolio/Reports/6_Figma Prototype [High fidelity] Report
- **Appendix VII:** Research on Search Bar Design
KDN-Portfolio/Reports/7_Research on Search Bar Design
- **Appendix VIII:** Research on Playground page
KDN-Portfolio/Reports/8_Research on Playground page
- **Appendix IX:** 1st version JSL3 website redesign usability testing
KDN-Portfolio/Reports/9_1st version JSL3 website redesign usability testing report
- **Appendix X:** 2nd version JSL3 website redesign usability testing
KDN-Portfolio/Reports/10_2nd version JSL3 website redesign usability testing report