

BOOKBLITZ

FINAL DELIVERABLE

A web application to effortlessly craft and share schedules, accurately track work hours and ensure accurate compensation. Additionally, empower clients to seamlessly view their scheduled services and associated costs.



110 PAGES
60 MIN READ



CM2020 2024
AGILE SOFTWARE PROJECTS

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Introduction

The development of a software as a service for schedule and payroll management, encompassing not only administrators and employees but also optionally extending to clients, represents a centralized and innovative option. The implementation of this solution must be carried out with meticulousness and professionalism. In this context, the recognition of the need to employ a method based on iterative and incremental development, where requirements and solutions evolve through collaboration, led to the choice of agile software development—an approach particularly suited for swiftly adapting to changes, sometimes inevitable but necessary [1].

Agile production not only entails flexibility and responsiveness to any scenario but also a remarkable capacity for adaptation [2]. Agility involves the integration of users, as well as the information tools participating in the entire production system. The primary objective of agile manufacturing is to provide a solution to user needs, not limiting itself solely to a product but involving users more closely in the development process [3]. For the effective implementation of an agile manufacturing system, a detailed understanding of the current needs of the customer and anticipation of their potential future requirements is essential [4]. To further strengthen this connection, the principles of Centered Design will be integrated, aiming to deliver a solution that not only efficiently meets business objectives but is also finely tuned to the needs and experiences of end-users.

Having said all this, to verify the correct implementation, it is necessary to follow a series of phases. Initially, the focus will be on the user satisfaction and software-related objectives and expected outcomes in general from the SaSS. Then, to acknowledge the success of the implementation of these earlier mentioned methods and principles (*Agile Project Management and User-Centered Design*) was successful, the chosen process for its implementation will be visualized and detailed, including all software-related decisions, user testing, heuristic evaluations, among other factors. Also, challenges and necessary changes that arose during this implementation will be addressed. All of this will allow for a examination of how all decisions made ensured that the goals were not only met but were achieved with resounding success.

Note to marker about Running the app

To use the application, you can register as an administrator. Only the administrator has the ability to add new clients and employees. It is important to note that the administrator does not have access to the passwords and usernames of the clients and employees they create. These sensitive credentials are not shared with the administrator to maintain confidentiality.

When the administrator creates a new client or employee account, the system automatically generates a random and secure username and password. These credentials are then sent directly to the email address provided during the account creation process. This ensures that only the client or employee themselves receives their login information, without exposing it to the administrator or any other users.

This approach upholds the principles of privacy and data protection. By keeping the credentials confidential and delivering them securely to the intended recipient, the system prevents unauthorized access and potential misuse of sensitive information.

Make sure you provide valid emails.

<https://sereinteam.vercel.app/welcome>

Thank you very much.

Objectives

Currently, there is no product in the market that offers complete and efficient independence concerning payroll management, employee management, and client management simultaneously. Resources, scalability issues, or the use of inappropriate techniques often lead these related products to become excessively costly, unintuitive, disorganized, or generally incomplete [5]. However, for Bookblitz, the primary goal is to address all these challenges and limitations. Thus, establishing a standard of excellence in business management through the implementation of innovative software. This software will redefine administrative procedures related to payroll, scheduling, employee management, and client relations, providing a comprehensive and efficient solution. Furthermore, Bookblitz seeks to deliver a product that is not only financially accessible but also user-friendly, reliable, intuitive, and robust, meeting the demands of the modern business environment. Always recognizing the optimization of staff productivity and user satisfaction.

The main objective of this project is to deliver a robust and user-friendly software solution that revolutionizes the way teams manage schedules, streamlines payroll processes, and enhances client engagement.

SOFTWARE GOALS

01

EFFICIENT WORKFORCE COORDINATION

Develop features that simplify and automate the crew scheduling process, reducing the time and effort required by managers.

04

CLIENT-CENTRIC SERVICES

Extend the functionality to allow clients to effortlessly view scheduled services, associated costs, and further engage with the provided services

02

INTEGRATED PAYROLL MANAGEMENT

Implement a seamless payroll functionality to ensure accurate and timely compensation for employees, enhancing overall financial transparency.

05

OPERATIONAL EFFICIENCY

Contribute to increased operational efficiency for both internal team management and client interactions.

03

ENHANCED USER EXPERIENCE

Prioritize a user-centric design to provide an intuitive and pleasant experience for both managers and employees interacting with the software.

06

ADAPTABILITY AND SCALABILITY

Design the software with adaptability and scalability in mind, ensuring it can evolve alongside the changing needs of businesses and teams.

Scope

Beyond the general and theoretical aspects related to usability, accessibility, and user satisfaction, it is essential to detail the specific technological objectives aimed to be achieved with the project.

For the successful development of this product, implementing a well-coordinated and organized role system, along with a sustainable database, is crucial. Furthermore, the selection of continuously improving and maintaining technologies is fundamental.

The development will be divided into three phases:

1. Backend: In this phase, a role system will be implemented to efficiently manage the schema, system, server, and database, ensuring scalability and security. A robust architecture will be established to guarantee data integrity and optimal role management.

2. Frontend: The focus will be on providing an intuitive and seamless user experience. Dynamic and responsive user interfaces will be developed, centered on usability and accessibility. The visual design will be attractive, facilitating effective interaction with the role system.

3. Landing Page: The landing page will be meticulously designed to deliver an exceptional user experience. In addition to presenting the product attractively and persuasively, it will focus on conversion optimization, ensuring an appealing visual design, persuasive content, and intuitive usability.

Through this report, the main objective is to reflect in an orderly, clear, and precise manner the entire planning and development process of the project, as well as to provide a comprehensive and detailed overview of the technologies used, decisions made, changes implemented, and limitations encountered during the project's course.

Currently, the team consists of a total of four members. However, unfortunately, only two of them are actively involved in the project development. This is because the remaining two members have not participated in the tasks or the organizational meetings proposed for the project implementation. Consequently, only the other two members are undertaking the responsibility for both the product development and the final report.

Fortunately, we have a full stack developer and a frontend developer in the team, providing us with confidence regarding the implementation of necessary technological tools for the project. However, given the project's focus on payroll systems, it's important to acknowledge that there may be some limitations in terms of legal terms. The legal field is extensive and subject to significant variations depending on the country, which could pose additional challenges during development.

Despite the obstacles faced, including limited time and team limitations, we are committed to giving our best to achieve a successful outcome.

Research

Literature Review

As companies, organizations, and work groups expand, they encounter new challenges. One of the most significant factors is payroll management, whose financial complexities become increasingly apparent over time. Navigating this dynamic landscape is equally challenging for both small and large enterprises. According to a recent study, companies with 20 employees or fewer often experience delayed paychecks or payroll errors, leading to excessive levels of stress and concern, as well as low reliability and commitment from employees to their work [6]. These problems and complexities often arise when procedures are carried out manually or due to outdated or poorly maintained systems, which limit efficiency and cause long-term issues.

Consequently, there has been a growing interest in integrating technological solutions that facilitate efficient scheduling and payroll management, as well as seamless communication with clients to enhance satisfaction and loyalty. Additionally, there is a need for systems that are accessible, reliable, intuitive, and cost-effective to ensure their adoption and continuous use by clients, employees, and administrators.

However, despite this increasing demand, there is a lack of systems that address the complete integration of these functionalities in a single platform. This literature review highlights the relevance and opportunity of [NAME], which seeks to address these gaps by offering a comprehensive solution that redefines the standards of online business management.

At the beginning stage of this project, a set comprehensive researches were done to analyze the problem of constructing business scheduling and payroll. The researches include a STEEPLE Analysis, a SWOT Analysis, and investigation on existing solutions in the market. (Details of the analysis were abridged because of the limitation of report length, please refer to the proposal)

Market Research

When I Work®

When I Work stands out as an employee scheduling solution designed to streamline schedule (Figure 13) and payroll management in dynamic work environments. Functioning seamlessly on both mobile and desktop browsers, it distinguishes itself with a modern and intuitive user interface (UI). This UI facilitates efficient management in handling scheduling shifts, vacation requests, and time-off requests. In addition, tracking and time-tracking features. When I Work offers an internal messaging tool to enhance communication (Figure 14). Despite these advantages, some users have noted that the service may become costly in the long run, and the customer support system should be improved.



Figure 13. When I Work mobile application

Figure 14. Internal messaging tool

connectteam

Connectteam stands as a comprehensive employee management platform tailored for mobile teams and non-desk workers, earning acclaim for its ability to streamline and enhance operational coordination and efficiency. Key features encompass robust scheduling functionality for efficient shift assignments, employee management, and accurate payroll record (Figure 5). Despite Connectteam's notable advantages, prudent considerations come to the forefront. Some users have noted a steep learning curve [23], particularly for those less acquainted with advanced technological solutions. Furthermore, it is essential to underscore that, given Connectteam's primary focus on internal management, its utility in environments such as restaurants, hotels, or salons might be limited due to the absence of specific features allowing customers to view their scheduled bookings/services and outstanding payments. In such cases, exploring additional solutions may be necessary to address these specific customer-centric needs.



Figure 4. Connectteam Scheduling feature

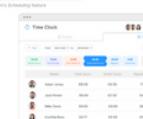


Figure 5. Connectteam payroll

findmyshift

FindMyShift emerges as a comprehensive platform crafted to simplify employee scheduling and management in dynamic workplace settings. Its intuitive interface facilitates adoption by both employers and employees alike. Noteworthy features encompass a robust scheduling functionality (Figure 6), empowering administrators to effortlessly create and adjust schedules, complemented by time-tracking tools, ensuring accurate management of work hours and payroll (Figure 7).

Its strengths, certain limitations have been highlighted in the mobile version of the platform. The application compared to its desktop counterpart, poorer experience on mobile devices [24]. Additionally, FindMyShift does not offer specific features to view their scheduled bookings/services and outstanding payments. In such cases, exploring additional solutions may be necessary to address these specific customer-centric needs.



Figure 6. FindMyShift mobile application

deputy*

Deputy emerges as an all-encompassing software solution for shift planning (Figure 11) and human resources (Figure 12), meticulously crafted for small and medium-sized enterprises. Its appealing and user-friendly interface, coupled with robust mobile support, ensures an accessible user experience. Deputy has gained recognition through several awards, including the prestigious Editors' Choice 2021 accolade in the employee scheduling and shift planning category [25], along with three categories in the TrustRadius Best Of Awards 2022 for workforce management [27].

A distinctive feature is its "stress profile" function, contributing to the mitigation of employee overtime and intervals between shifts. Despite these strengths, it is noteworthy that human resources functionalities, such as employee onboarding and task time management, are considered basic or straightforward [28].

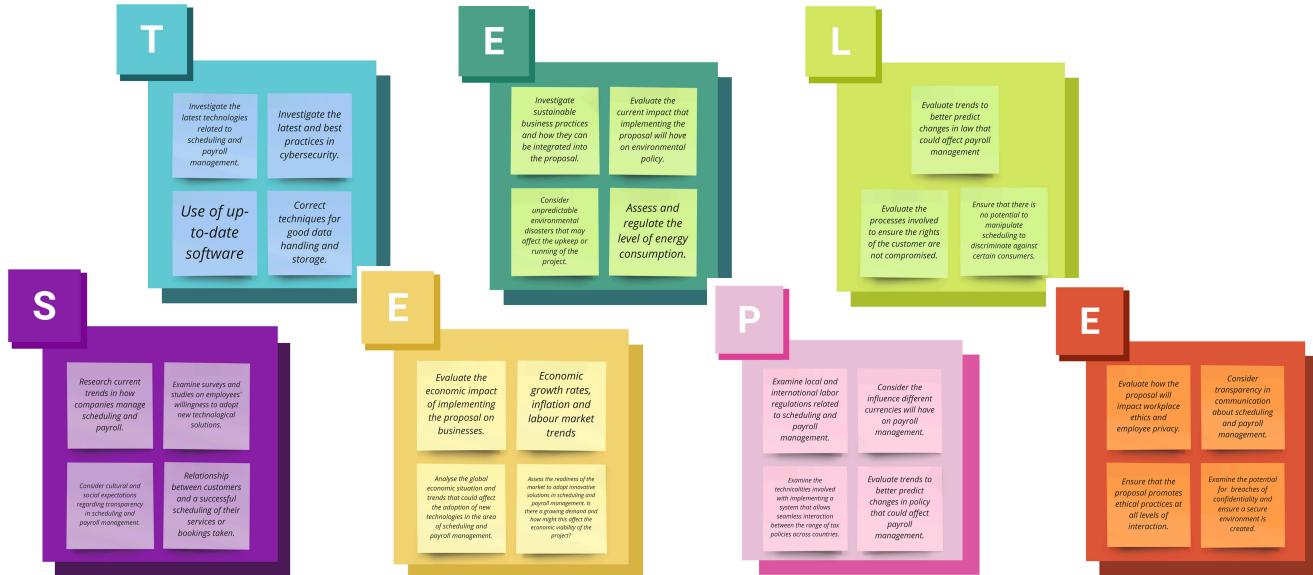


COMPARISON TABLE

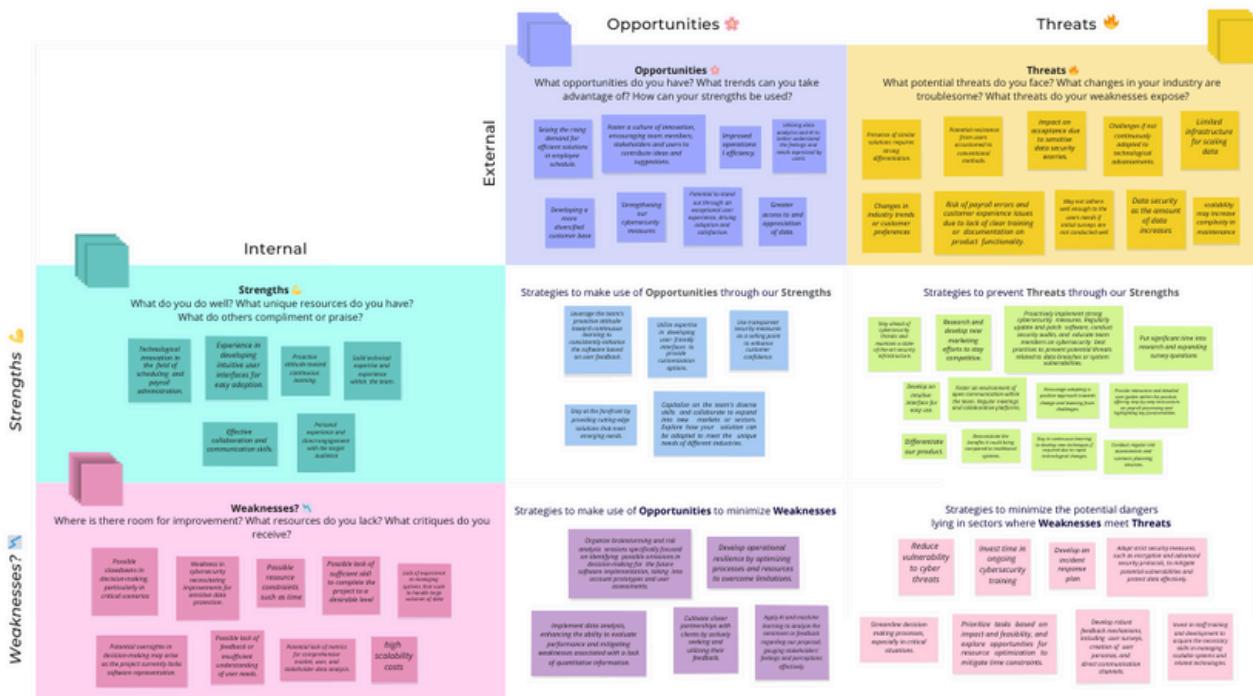
	OUR PROPOSAL	connectteam	findmyshift	ABC Roster	deputy*	When I Work
Employee Scheduling	✓	✓	✓	✓	✓	✓
Payroll Integrations	✓	✓	✓	✓	✓	✓
User Features	✓	✗	✗	✗	✓	✓
Customer Interface: Booking and Payments	✓	✗	✗	✗	✗	✗
Mobile	✓	✓	✓	✗	✓	✓
Desktop	✓	✓	✓	✓	✓	✓
Employee Scheduling: Entire control	✓	✓	✓	✗	✓	✓

Note: ✓ Our Proposal vs. Competing Applications in a Comparative Table.

STEEPLE Analysis



SWOT Analysis



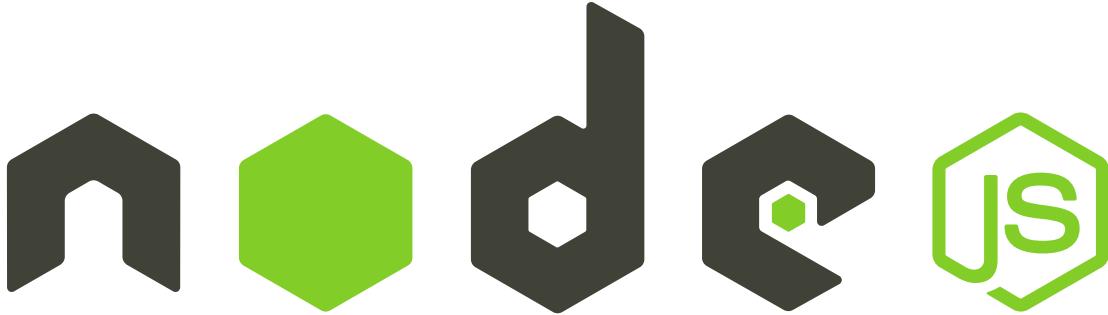
It is concluded that there is a demand of a scheduling and payroll application. There is yet comprehensive product in the market that caters all the needs of different stakeholders. Our project of making such application could provide positive value to the society.

Details of the analysis above were abridged because of the limitation of report length, please refer to the proposal.

Choice of Technology

01

Backend



Node.js stands as the cornerstone of our project, strategically chosen to lead the charge in server-side development.

Node.js [7] emerges as the optimal solution for our web-based product, particularly in navigating data-intensive processes integral to our role-based application. In the context of scheduling and payroll management, where continuous requests filtered through various query types are fundamental, Node.js is the preferred choice. Its asynchronous nature, coupled with efficient handling of I/O operation [8][9], ensures that our software can seamlessly manage the influx of diverse and continuous data requests from administrators, employees, and clients.

Also, Node.js aligns seamlessly with our choice of a JavaScript framework, React, for the client-side. This harmony streamlines development, fostering practicality and coherence throughout the project.

On other hand, the scalability is a critical concern for our project, and Node.js excels in this area. Its straightforward approach to server creation and efficient handling of routes and logic streamline the scaling process. Node.js effortlessly manages multiple servers and distributes processing logic, ensuring optimal performance and application resilience under increasing workloads.

Accessibility is paramount, and Node.js delivers on this front as well. Widely available across diverse systems—be it Windows, UNIX, LINUX, MacOS, or various mobile devices [10] —Node.js ensures that our solution is accessible to users across different platforms. This versatility is invaluable, allowing us to reach a broader audience and accommodate varied preferences seamlessly.



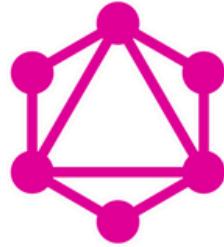
The selection of PostgreSQL [11] as the relational database management system constitutes a fundamental pillar in the architecture of our comprehensive scheduling and payroll solution. This technology stands out for its high data consistency and integrity [12], crucial qualities for an application handling sensitive user information and critical transactions. According to a research report published by StackOverflow [12], PostgreSQL has solidified its position as the most popular database technology in 2022, surpassing MySQL in the preferences of the professional developer community.

This growing popularity is not coincidental, as PostgreSQL offers comprehensive documentation, detailed reference manuals, and robust community support. Its ability to support highly transactional and mission-critical applications ensures optimal performance and the reliability required in a scheduling and payroll environment.

To harness the full capabilities of PostgreSQL, we have chosen to integrate Prisma ORM [13], which is notable for its efficiency in collaborative environments [14], a crucial aspect for our scalable project with tight deadlines. Its declarative schema provides an overview of the current state of the database, facilitating the understanding of table structures for all members of the development team. Also, by abstracting the complexity of SQL queries, Prisma ORM allows us to focus our efforts on implementing key functionalities without compromising development speed or code quality.

02

Optimizing Client– Server Interaction with GraphQL



GraphQL



REST REQUEST

```
GET https://sample.com/person/1
```

REST JSON

```
{
  "firstName": "John",
  "middleName": "Andrew"
  "lastName": "Smith",
  "email": "jas1992@gmail.com",
  "relationshipStatus": "single"
}
```



GraphQL

VS

GRAPHQL QUERY

```
{
  person {
    firstName
    lastName
  }
}
```

GRAPHQL JSON

```
{
  "data": {
    "person": {
      "firstName": "John",
      "lastName": "Smith",
    }
  }
}
```

For the development of this product, efficiency and precision in data retrieval are critical factors that directly impact the user experience. This is where GraphQL [15] emerges as a solution, surpassing the limitations of traditional REST APIs.

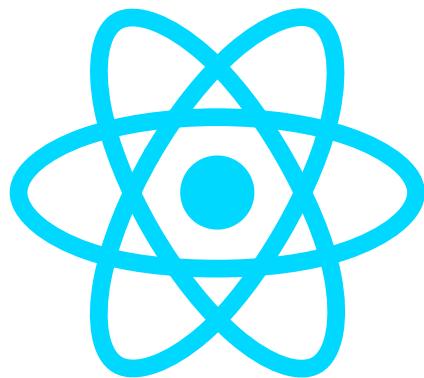
While REST necessitates multiple calls to different endpoints, GraphQL simplifies this process through a single request handled by an intelligent query system [16]. This is particularly relevant in our role-based product, where the ability to filter and deliver only the necessary information for each user profile is essential to avoid unnecessary overhead and optimize performance.

Furthermore, by integrating GraphQL into the architecture, it ensures that the product is accessible and functions smoothly, even for users with slow connections or low-end devices. This is because its ability to perform precise queries, allowing clients to specify exactly the data they need, results in faster responses, lower bandwidth demand, and lightweight and efficient data transfer. This consideration is crucial as our goal is to provide a comprehensive scheduling and payroll solution that is inclusive.

For the integration of the GraphQL server, Apollo Server will be incorporated into the backend, and GraphQL Request will be used on the frontend, establishing a robust and optimized communication channel between both layers.

03

Frontend



React

For the frontend, **React.js** [17] was chosen, a framework that aligns perfectly with the dynamic requirements and interactive nature of the project. React.js excels in creating reactive and efficient user interfaces, essential for providing a seamless experience to administrators, employees, and clients interacting with the system.

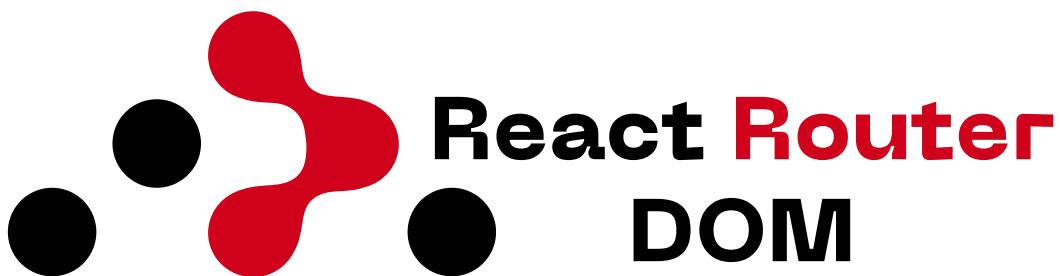
One of React.js's key strengths lies in its ability to build reusable and modularized components [18]. This not only optimizes the development process but also facilitates long-term maintenance and scalability. Additionally, the reactive nature of React.js ensures that changes in data are instantly reflected in the user interface, delivering a dynamic and real-time experience [19].

The choice of React.js is also based on its strong community support and widespread adoption in the market, ensuring a steady flow of updates, robust documentation, and a growing ecosystem of libraries and tools. This allows leveraging the latest advancements and best practices in web development, ensuring the product stays at the technological forefront.



Finally, React.js seamlessly integrates with other key technologies in our stack, such as Node.js on the backend and GraphQL as an efficient communication layer between the client and the server. This technological synergy facilitates development, collaboration, and the delivery of a comprehensive solution.

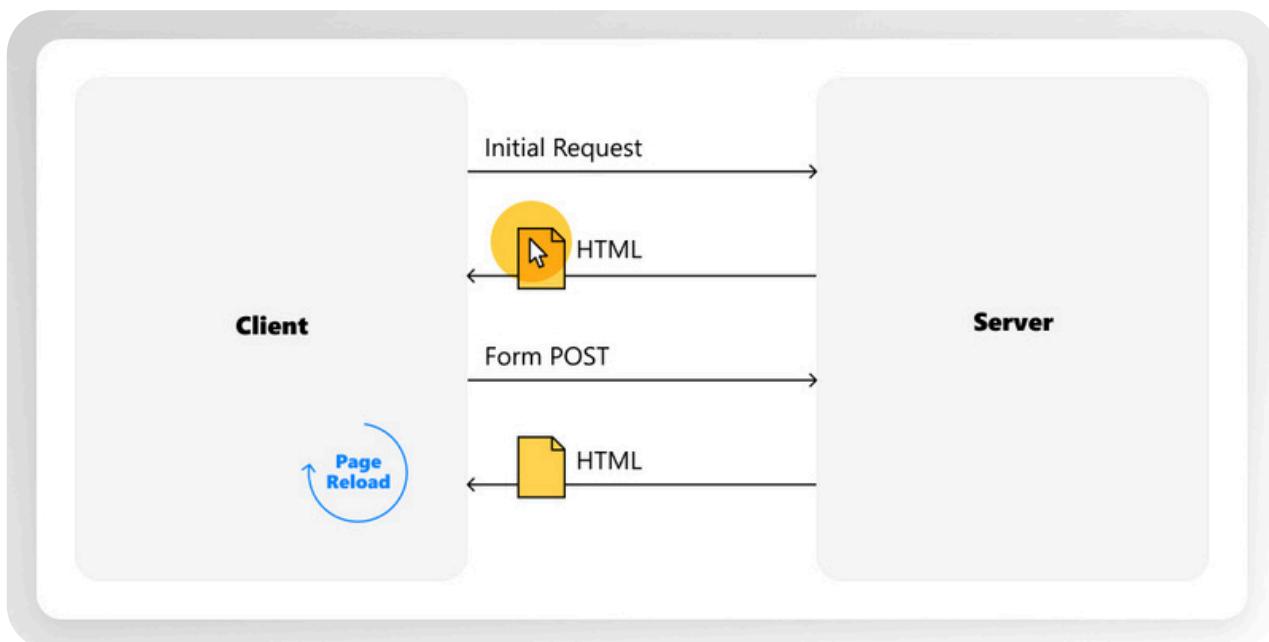
Companies that use React



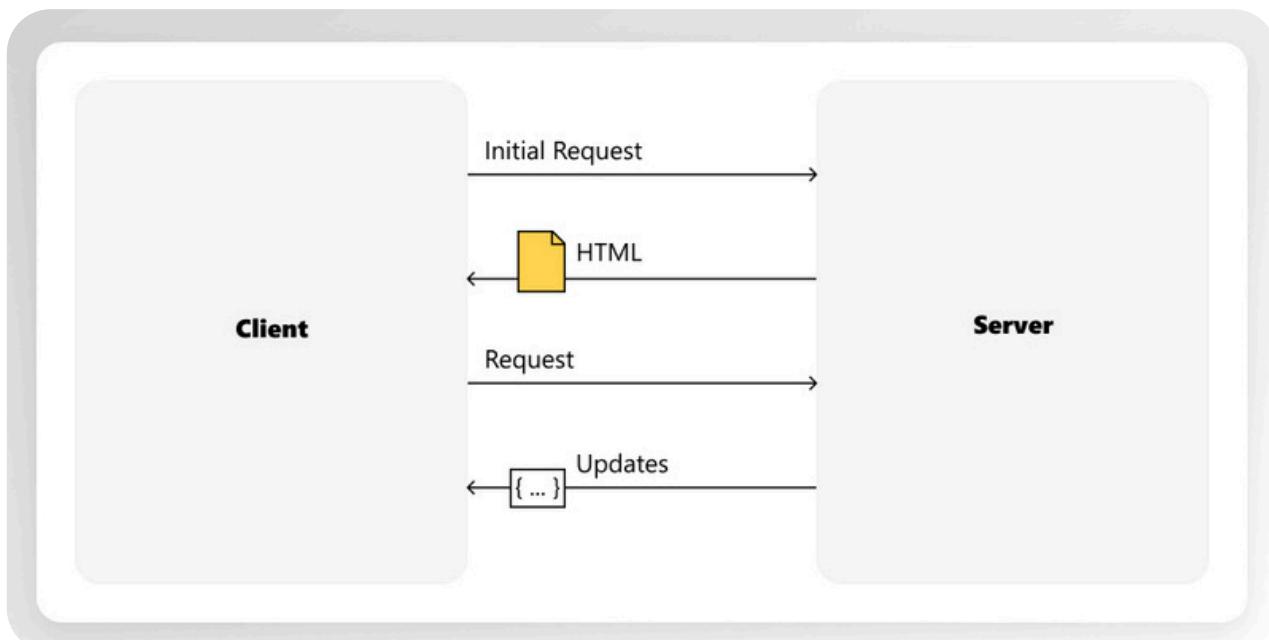
To manage seamless navigation and route structure in the frontend of our project, we've opted for React Router DOM [20]. It allows for precisely configuring nested routes and defining dynamic routes based on parameters. This feature is crucial for a system like [NAME_SYSTEM], where the diversity of roles and actions demands a variety of customized views.

The seamless integration with React.js is another advantage of React Router DOM. This synergy facilitates the creation of Single Page Applications (SPAs) [21], where transitions between different views occur smoothly without the need to reload the page. The user experience is enhanced, providing a sense of speed and continuity that is highly appealing.

Traditional Page Lifecycle vs SPA Lifecycle



Imagine Maria, an administrator at MOON-TECH, eagerly awaiting updates on the latest reservations and schedule changes made by employees. In an MPA (Multiple Page Application) approach, Maria is compelled to reload the page each time she needs to verify whether new reservations or schedule updates were edited or implemented correctly. This constant reloading process is less efficient and could impact Maria's productivity as she has to repeat the described sequence of actions.



In contrast, with an SPA (Single Page Application) approach and the implementation of React Router DOM, Maria would experience a seamless transition between different views without reloading the page. This facilitates continuous and efficient management of real-time updates in the system.



tailwindcss

In the development of modern and scalable web applications, implementing an efficient and consistent approach to user interface design is crucial. For this reason, we opted for Tailwind CSS [21], a utility-first CSS framework that allows building customized and scalable user interfaces quickly and efficiently by composing utility classes instead of writing custom CSS.

A fundamental aspect of Tailwind CSS is the ability to generate highly customized and component-specific styles, as it avoids the need to create generic CSS classes and facilitates the creation of more precise and contextual styles [22]. This feature is particularly valuable in a project like this, where customization and adaptation of the user interface to different user profiles is essential.

Finally, Tailwind CSS has extensive documentation and a strong community backing, ensuring a constant flow of updates, best practices, and a wide range of complementary resources and tools.

TanStack Query v4

In the development of modern web applications with React, efficient state management and data retrieval are fundamental aspects for delivering a smooth user experience. That's why we have chosen to integrate TanStack Query [23], an open-source JavaScript library created by TanStack, which simplifies and optimizes these critical tasks.



One of the main challenges in developing React applications is state management, a process that often necessitates complex solutions like Redux, involving the writing of a significant amount of repetitive code. TanStack Query tackles this issue by offering automated state management [24], diminishing the need for extensive state-related code and streamlining the development process.

Furthermore, efficient network requests are crucial for a seamless user experience. TanStack Query optimizes these requests by automatically caching data, eliminating redundant calls, and synchronizing data with the server. This functionality prevents common issues such as excessive or insufficient data retrieval, enhancing the performance and efficiency of our application.

Another key aspect of TanStack Query is its robust community and support [25]. As an open-source project, it benefits from an active developer base contributing optimizations, enhancements, and constant updates.



Efficient global state management is crucial to ensure a consistent and frictionless user experience. To address this need, we have chosen to employ Zustand, a small yet powerful, non-opinionated state management library built on Jotai and React-spring [26].

Zustand is a lightweight solution that relies on hooks and does not impose a rigid structure, making it an ideal choice. Its modular approach allows each state segment to be defined as an independent store, facilitating the encapsulation of related state properties and their associated actions [27]. This modularity promotes a clean and scalable implementation, a crucial aspect in an application of this magnitude.

A specific use case where Zustand proves its utility is in centralizing the current system date. By maintaining this information in the global state, all components of the application can access and synchronize with the current date, enabling precise visualization of appointments and scheduled events in relation to the current day, week, or month.



In addition to its intuitive and user-friendly hooks-based API, Zustand boasts a large user community and robust support as an open-source project. This ensures a continuous flow of updates, bug fixes, and improvements, guaranteeing that our application remains at the forefront of global state management.

04

Collaborative Development Workflow



Linear

For effective and organized tracking of pending tasks in our project, we have adopted Linear [28], a powerful project management tool specifically designed for software development teams. Linear is an all-in-one platform that combines issue tracking, project management, and product documentation functionalities in a single place.

In the initial stage, we established a clear structure in Linear, dividing all pending tasks into three main groups: tasks for the landing page, tasks for the frontend, and tasks for the backend. This categorization allows us to maintain an organized overview of the different components of the project, facilitating task assignment and progress monitoring in each area.

Within each group, individual tasks are detailed with clear descriptions, assigned priorities, and linked to the team members responsible for their execution. This granular structure provides us with total transparency on the current status of each task, fostering fluid collaboration and better coordination among team members.

Additionally, Linear offers advanced features such as task dependency tracking, Gantt chart visualization, and integration with our version control and communication tools [29]. These features allow us to efficiently manage interdependencies, identify potential bottlenecks, and keep the entire team updated on project progress and changes.

Next, a detailed walkthrough will be provided describing how tasks should be implemented, ordered, and executed effectively.

1. BACKLOG: THE CENTRALIZED REPOSITORY OF PENDING TASKS

Concept: The backlog acts as a centralized repository where all pending project tasks are stored. This comprehensive list of tasks is essential for keeping an organized track of requirements and ensuring that no task is left unaddressed.

Why: Having a well-structured and up-to-date backlog is crucial for several reasons. First, it provides a complete overview of all the remaining work, facilitating efficient planning and resource allocation. Additionally, by having all tasks documented in one place, duplicates are avoided, and transparency is promoted within the team. Finally, the backlog allows for prioritizing tasks based on their importance and dependencies, ensuring that the most critical items are addressed first.

BACKEND LANDING PAGE +

BACKEND ... ★

SaaS TEAM 65 0% Filter

Backlog 21

	Description	Category	Last Update	Status
T65-1	Set up a Node.js development environment.	Environment...	21 ene	🟡
T65-2	Install and configure a cloud-based MySQL database management system.	Environment...	21 ene	🟡
T65-4	Design and define the necessary data models for managing employees, adm...	Data Model...	21 ene	🟡
T65-5	Create controllers in Express to handle CRUD (Create, Read, Update, Delete) ...	Controller...	21 ene	🟡
T65-6	Define routes in Express to handle... > Create controllers in Express to han...	Route Imp...	21 ene	🟡
T65-7	Implement an authentication and aut... > Create controllers in Express to ...	Authentication...	21 ene	🟡
T65-8	Utilize Prisma to perform databa... > Create controllers in Express to handle...	Integration...	21 ene	🟡
T65-10	Develop the necessary business logic for performing payroll calculations ...	Business Log...	21 ene	🟡
T65-11	Implement a robust error handling system that provides appropriate respo...	Error Hand...	21 ene	🟡
T65-12	Write unit tests to verify the correct functionality of controllers and busine...	Unit Tests...	21 ene	🟡
T65-13	Perform integration testing to ensure that different backend components ...	Unit Tests...	21 ene	🟡

Backlog Tasks - Backend

BACKEND FRONTEND +

SaaS TEAM 65 > FRONTEND ... ★

SaaS TEAM 65 0% Filter

Backlog 17

	Description	Category	Last Update	Status
T65-34	Install necessary dependencies such as Tanstack Query, React Router Do...	Set up Re...	10 feb	🟡
T65-33	Install Node.js and configure a development environment for React.	Set up Re...	10 feb	🟡
T65-42	Design and implement registration and login pages, including necessary lo...	Create re...	10 feb	🟡
T65-50	On the "Schedule Employee" page, make sure that the shifts display...	Improvement...	27 feb	🟡
T65-41	Develop an authentication and authorization system in the frontend to pro...	Implemen...	10 feb	🟡
T65-43	Develop specific pages for each user type, such as client, employee, and a...	Create pa...	10 feb	🟡
T65-39	Integrate React Query to handle API requests, including queries, mutation...	Connect ...	10 feb	🟡
T65-40	Configure queries to fetch data from the backend efficiently and optimize ...	Connect ...	10 feb	🟡
T65-36	Utilize Tailwind CSS to efficiently style components and maintain a consist...	Design re...	10 feb	🟡
T65-35	Design and develop reusable components like buttons, forms, and panels f...	Design re...	10 feb	🟡
T65-37	Use React Router DOM to set up application routes and enable navigation ...	Configure...	10 feb	🟡

Backlog Tasks - Frontend

BACKEND FRONTEND LANDING PAGE +

SaaS TEAM 65 > LANDING PAGE ... ★

SaaS TEAM 65 0% Filter

Backlog 10

	Description	Category	Last Update	Status
T65-22	Apply CSS styles to the landing page elements.	CSS Styles	23 ene	🟡
T65-24	Design and create the Hero section at the top of the landing page. Include...	Hero Sect...	23 ene	🟡
T65-9	Create the HTML structure for the landing page, including sections for the...	HTML Str...	21 ene	🟡
T65-23	Implement JavaScript code to add interactivity	JavaScript...	23 ene	🟡

Backlog Tasks - Landing Page

2. TO-DO: THE ACTIVE TASKS BOARD

Concept: The TO-DO column represents the set of tasks selected from the backlog that will be addressed during the current week. These tasks are the ones the team has committed to completing within the established timeframe.

Why: Having a clear list of active tasks is crucial for maintaining focus and team productivity. By limiting the number of tasks in progress simultaneously, overload is avoided, and a more efficient workflow is promoted. Additionally, by having a specific view of the weekly tasks, team members can better plan their time and resources, facilitating the meeting of established deadlines.

The screenshot shows a digital task board titled "Todo Tasks - Backend". On the left, there's a sidebar with navigation links like "New issue", "Inbox", "My issues", "Views", "Roadmaps", "Favorites", "FRONTEND", and "BACKEND". Under "Your teams", "SaaS TEAM 65" is selected, showing "Issues", "Active", "Backlog", "Projects", and "Views". The main area displays two columns: "Backlog" (17 tasks) and "Todo" (4 tasks). The "Todo" column contains tasks for user T65-1, each with a brief description, due date (28 ene), priority level (orange), environment (Environment...), and a GitHub link. The tasks are: "Set up a Node.js development environment.", "Install and configure a cloud-based MySQL database...", and "Configure and connect Prisma ORM to the database.".

3. IN REVIEW: VALIDATION AND QUALITY CONTROL

Concept: Once a task has been completed, it moves to the "In Review" column. At this stage, tasks are thoroughly reviewed by other team members to ensure they meet the established quality standards and requirements.

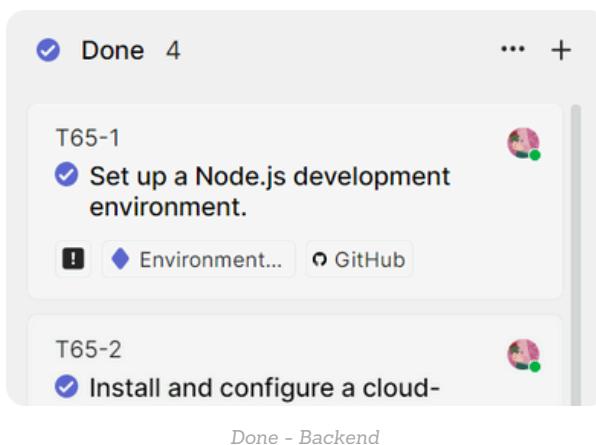
Why: The review process is essential for maintaining the integrity and quality of the final product. By subjecting each task to rigorous inspection, errors, inconsistencies, or potential issues can be detected and corrected before the task is considered complete. Additionally, reviews foster collaboration and learning among team members, as they can share feedback, suggestions, and best practices.

The screenshot shows a digital task board titled "In Progress, In review Tasks - Backend". The sidebar and team selection are identical to the previous board. The main area displays three columns: "In Progress" (2 tasks), "In Review" (2 tasks), and "Dor". The "In Review" column contains tasks for users T65-1 and T65-2, each with a brief description, due date (28 ene), priority level (green), environment (Environment...), and a GitHub link. The tasks are: "Set up a Node.js development environment." and "Install and configure a cloud-based MySQL database...".

4. GROUP REVIEW AND FEEDBACK CYCLE

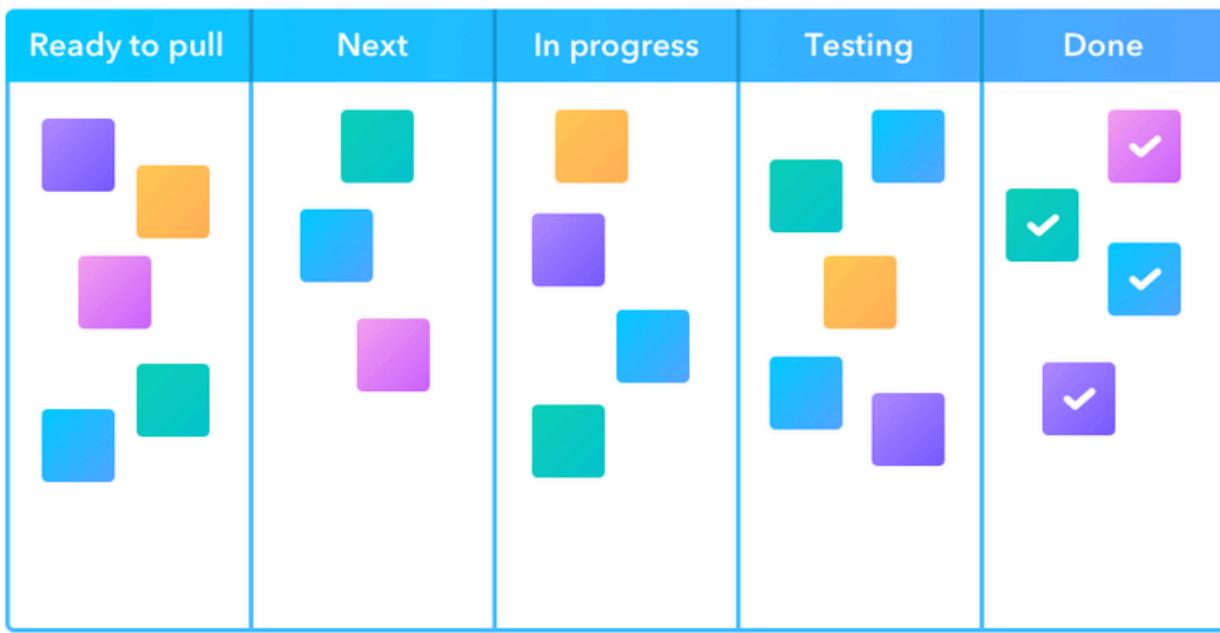
Concept: At the end of each week, a group review of all tasks in the "In Review" column is conducted. During this review, the entire team analyzes each task, discusses any comments or concerns, and decides whether the task meets the acceptance criteria to be marked as "DONE" or if it needs to go back into the cycle for refinement and improvement.

Why: The group review is essential for several reasons. First, it promotes transparency and accountability within the team, as all members have the opportunity to provide their perspective and participate in decision-making. Secondly, by involving the entire team in the review process, it ensures that different perspectives are addressed and reduces the risk of overlooking critical issues. Finally, the feedback cycle allows tasks that do not meet the standards to be returned for refinement, ensuring the quality of the final product and promoting a process of continuous improvement.



05

Agile kanban METHOD



This task management approach follows the agile Kanban method, which is widely used in software development and other complex projects. Kanban is a lean framework that promotes continuous delivery of value through visualization of the workflow and limitation of work in progress. By adopting this method, our team benefits in several ways:

WORKFLOW VISIBILITY

The Kanban board, with its "Backlog," "TO-DO," "In Review," and "DONE" columns, provides us with a clear visual representation of the status of each task and the overall workflow. This transparency facilitates the identification of bottlenecks and informed decision-making to optimize the process.

LIMITATION OF WORK IN PROGRESS:

By limiting the number of tasks being addressed simultaneously in the "TO-DO" column, we avoid overloading the team and promote a more focused approach. This leads to greater efficiency and quality in task execution.

CONTINUOUS DELIVERY OF VALUE

Kanban promotes the continuous delivery of value by encouraging the team to complete and deliver tasks incrementally. Finished tasks are reviewed, and if they meet the acceptance criteria, they are marked as "DONE," meaning they are ready for delivery to the client or for implementation.

CONTINUOUS IMPROVEMENT

The feedback cycle, where tasks can go back into the cycle for refinement, fosters a process of continuous improvement. This allows us to identify and address issues or areas for improvement, leading to ever-increasing quality of the final product.

Planning and Correction

Gantt Chat

A Gantt Chart is used to keep track of our plan in allocation of time. Time planned for each item is shown in yellow, time spent is shown in green(on time) or red(delayed). Blue is for buffer time.

Notes of our Plans and changes

We have constructed a time table in the early stage of the project. Aiming to finish one specific task in each week. However, things do not go well starting from week 5 while waiting for users' feedback. We find that our users tend to submit their feedback slower than we thought. Therefore, we started late for the prototypes later. We solved that by evening out the time shortage in the following 2 weeks, and actively encourage users to respond faster in the later stages.

Also, we planned to finish the proposal by week 11, however, we are behind schedule as there are a steep learning curve for some team member to learn using a new text editing software. Fortunately, we have one week of buffer time prepared. The investment of learning a new editing tool results in a way better looking proposal. We are satisfied with the results and we believe we would not be using that much time in the final report as we became more experienced.

On week 13, we started building scheduling function as planned. However, we found our progress was slower than our plan at week 14 as 2 of our team members is not responsive since the submission of the midterm proposal. To cover the loss of manpower, we decided to limit the function of clients to view the schedule only. Skipping the functionality of editing their booking.

Fortunately, one of our team members is a full stack developer and the other one has some front end developing experience. After reviewing the situation, the we have decided to split up, one keep working on the functionality and the other one start early on the desktop interface.

Although we finished the basic functionality on week 15, the desktop interface development was having a rather slow progress. It is because the person in charge only had experience on rather simple web development projects and he found using the chosen framework of React.js was harder than he expected. He ended up used a lots of time to learn instead of moving the project forward. The situation improved drastically after the full stack developer stepped in to help after the basic back end functions were finished. It was finally finished at the expanse of the time planned for mobile interface development and half of the buffering time on week 17.

On week 17, after evaluating the fact that we were 1.5 weeks behind and only half of the team is working. we have decided to give up on the mobile interface and start the user testing and correction process. It was a painful decision but we did not want to risk not finishing the project on week 22.

Although we have reserved extra time for the user testing and correction process, it had also took longer than planned due to lack of manpower. On week 20, we have decided to drop the extra functionality of a review system.

At the end, the two of us used up the last buffering time to finish writing the final report of 4 people during the exam period.

Prototyping & Iteration

01

User Testing

To ensure that the application addresses the needs and expectations of a broad user base, a dedicated section for user personas was implemented in the project proposal. These detailed representations of various user groups allowed an assessment of how the proposal would be received and utilized across diverse profiles.

Unique and well-defined user personas were carefully crafted, each possessing distinct demographic characteristics, goals, skills, and specific challenges. The user personas ranged from the experienced administrator seeking efficiency and control to the casual employee prioritizing ease of use, and the busy client valuing accessibility and transparency, creating a diverse spectrum of perspectives.

For this final product, valuable insights from different user persona groups will be leveraged once again. Periodic usability tests will be executed, with representatives from each user persona directly interacting with the application. This approach will provide real-time feedback on aspects such as ease of use, accessibility, and overall satisfaction, ensuring a user-centric and well-refined end product.

In this phase, images sourced from Pexels.com under the CCO Creative Commons license will be utilized to visually represent each user archetype.

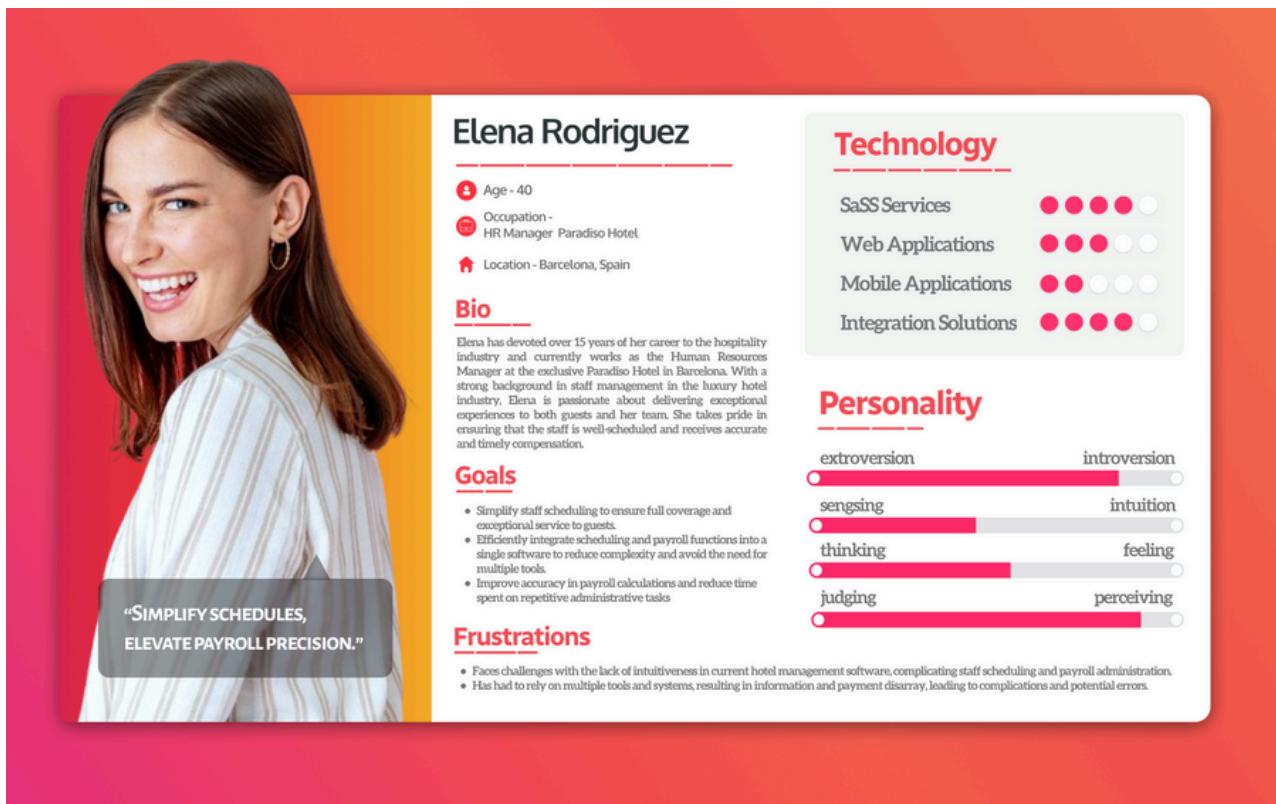


Figure A. Image of Elena, first user persona representing the group of professionals with experience in team management across hotels, restaurants, and similar sectors.

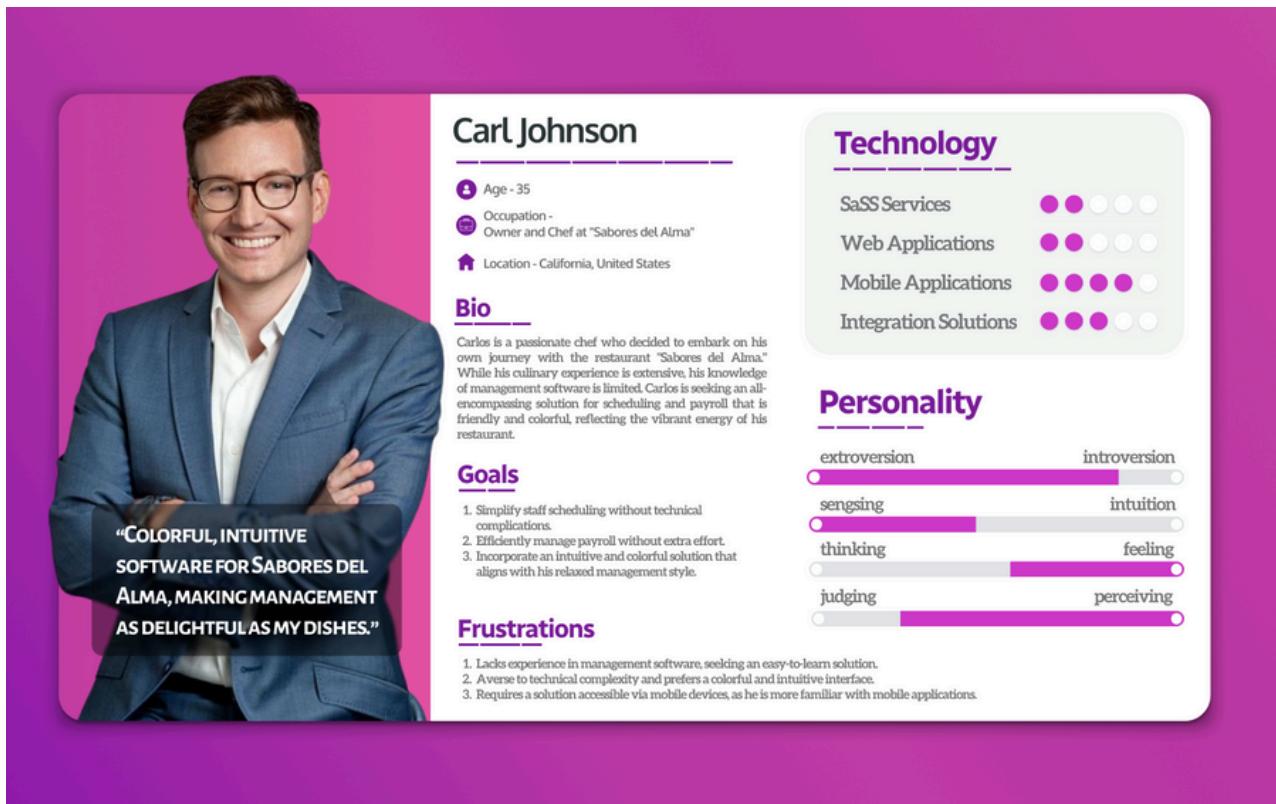


Figure B. Image of Carl, second user persona representing individuals managing smaller services or organizations with limited experience in using SaaS or technological tools for such tasks.

Emma Turner

Age: 28
Occupation: Delivery Driver and Order Dispatcher
Location: London, England

Bio

Emma is a dynamic delivery driver and order dispatcher based in London. Constantly on the move, she faces challenges with existing software platforms that display reservations in a disorganized manner. Emma is looking for a user-friendly software solution that allows easy access and navigation, especially on her mobile device, as she's frequently on the go coordinating and delivering orders.

Goals

1. Easily view and manage reservations on the move.
2. Access a software platform that is mobile-friendly and intuitive.
3. Simplify the login process for quick and efficient access.

Frustrations

1. Reservations are consistently displayed in a disorderly fashion on current software.
2. Limited mobile accessibility, making it challenging to manage reservations while on the move.
3. Cumbersome login processes on existing platforms.

Technology

Category	Score
SaaS Services	● ● ● ○ ○
Web Applications	● ● ○ ○ ○
Mobile Applications	● ● ● ● ○
Integration Solutions	● ● ○ ○ ○

Personality

Trait	Score
extroversion	○ ○ ○ ○ ○
sensing	○ ○ ○ ○ ○
thinking	○ ○ ○ ○ ○
judging	○ ○ ○ ○ ○
intuition	● ● ● ○ ○
feeling	○ ○ ○ ○ ○
perceiving	○ ○ ○ ○ ○

Figure Group C. Image of Emma, third user persona representing individuals who work on-the-go and rely on their mobile devices to manage schedules and appointments efficiently.

Liam Anderson

Age: 33
Occupation: Part-Time Tutor at Anderson's Academy
Location: Sydney, Australia

Bio

Liam is a temporary private tutor at Anderson's Academy in Sydney, Australia. With a focus on providing quality education, Liam and his brother are searching for a user-friendly software solution that caters to students' understanding. They desire an aesthetically pleasing platform that clearly showcases schedules, making it easy for both students and Liam to comprehend. Additionally, Liam prefers automated weekly payments to streamline his financial management.

Goals

1. Enhance student understanding of schedules.
2. Utilize an aesthetically pleasing and user-friendly platform.
3. Automate weekly payment tracking for financial ease.

Frustrations

1. Current platforms lack student-friendly design.
2. Difficulty in understanding and managing schedules.
3. Manual tracking of weekly payments is error-prone.

Technology

Category	Score
SaaS Services	● ● ○ ○ ○
Web Applications	● ● ○ ○ ○
Mobile Applications	● ● ○ ○ ○
Integration Solutions	● ● ○ ○ ○

Personality

Trait	Score
extroversion	○ ○ ○ ○ ○
sensing	○ ○ ○ ○ ○
thinking	○ ○ ○ ○ ○
judging	○ ○ ○ ○ ○
intuition	● ● ● ○ ○
feeling	○ ○ ○ ○ ○
perceiving	○ ○ ○ ○ ○

Figure Group D. Image of Liam, representing individuals involved in temporary roles such as private tutoring or managing short-term teams. This user persona group lacks extensive experience in nuanced payment structures and seeks a software solution that is exceptionally user-friendly and aesthetically designed.

Sofia Martinez

Bio

Sofia is a loyal client of the "Radiant Beauty" salon in Buenos Aires. Along with the salon owner, they are in search of an application that provides customers with an enjoyable experience to view and manage their appointments and schedules easily. Sofia values her time and dislikes waiting for extended periods at the salon due to informal schedules, so she is looking for a solution that offers precision and convenience.

Goals

- Clearly visualize her appointments and schedules.
- Experience a simple and comfortable booking process.
- Avoid long waits at the beauty salon.

Frustrations

- Extended waits due to informal schedules.
- Lack of clear visibility on appointments and schedules.
- Complicated and unfriendly booking process.

Technology

Technology Type	Interest Level (Scale 1-5)
SaaS Services	4
Web Applications	4
Mobile Applications	4
Integration Solutions	3

Personality

Personality Trait	Score (Extroversion to Introversion)	Score (Sensing to Intuition)	Score (Thinking to Feeling)	Score (Judging to Perceiving)
extroversion	1	8	2	1
sensing	1	8	2	1
thinking	8	1	2	1
judging	8	1	2	1
intuition	1	8	2	1
feeling	1	8	2	1
perceiving	1	8	2	1

**APPOINTMENTS
WITHOUT WAITS,
ALWAYS RADIANT."**

Figure Group E. Sofia, the fifth user persona, reflects those who value time, avoiding informal or complex tools. With a preference for punctuality, they seek software that aligns with their need for straightforward and time-efficient interactions.



Connor Mitchell

Age - 29
Occupation - Founder and CEO of "InnovaTech"
Location - Toronto, Canada

Bio

Connor is an entrepreneur and software developer with the vision to start his own startup, "InnovaTech Solutions". As the founder and CEO, he seeks a comprehensive task and project management software to efficiently organize his team's operations. His goal is not only to coordinate tasks but also to empower his employees to visualize how their contributions impact their personal and professional growth, including accessing transparent information about their salaries.

Goals

- Efficiently organize and coordinate development tasks.
- Facilitate individual and professional progress visualization for employees.
- Implement a transparent system for employees to access salary information.

Frustrations

- Challenges in efficiently coordinating tasks and projects.
- Lack of transparency in individual progress and salary information for employees.
- Need for a comprehensive tool for managing the startup.

Technology

Service	Rating
SaaS Services	4.5
Web Applications	4.5
Mobile Applications	4.0
Integration Solutions	4.0

Personality

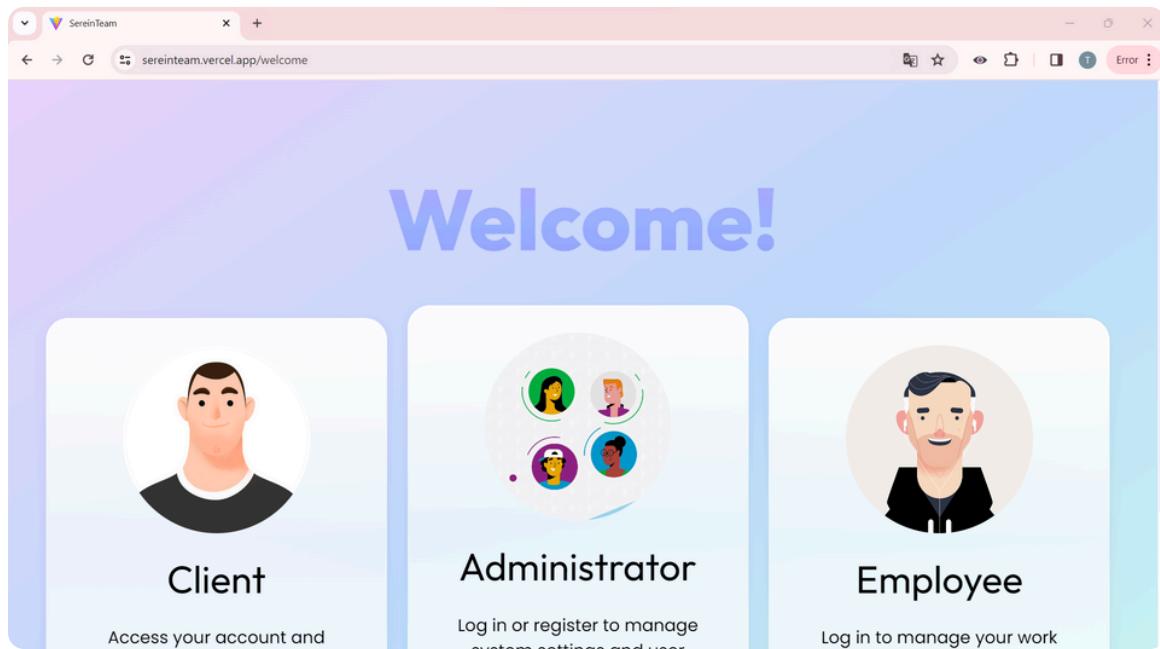
Trait	Score	Opposite
extroversion	100%	introversion
sensing	100%	intuition
thinking	100%	feeling
judging	100%	perceiving

**EMPWER PROGRESS,
ENHANCE TRANSPARENCY™**

Figure Group F: Connor, the sixth and final user persona, symbolizes individuals who highly value the efficiency of tools for simplifying daily tasks. They prioritize empathy and transparency.

First Iteration

Welcome Page



Login Pages

The image displays two side-by-side screenshots of a web application's authentication interface.

Login page (Left): The URL in the address bar is 'auth/login'. The page features a large 'Welcome Back' heading. It includes fields for 'Username' (with placeholder 'o_Brian56') and 'Password' (with placeholder '*****'). A blue 'Sign in' button is at the bottom.

Register Page (Right): The URL in the address bar is 'vercel.app/auth/register'. The page features a large 'Register' heading. It includes fields for 'First Name' and 'Last Name'. Below these are fields for 'Business Email' (placeholder 'example@gmail.com'), 'Username' (placeholder 'o_Brian56'), 'Password' (placeholder '*****'), 'Company Name' (placeholder 'Umbrella Corporation'), and 'Company URL' (placeholder 'umbrella-corporation'). A pink 'Register' button is at the bottom.

Admin Page

Admin - Schedule Page

Admin - Employee Details Page

Admin - Client Details Page

Payroll & Employee Performance Overview

EMPLOYEE NA... HOURS WORK... ADDITIONAL E... GROSS PAY

Employee Name	Rate	Hours Worked	Additional Earnings	Gross Pay
Brian Dallas	\$15/hour	10H		\$150
Andrea S...	\$35/hour	8H		\$280
Ana De A...	\$25/hour	OH		\$0
Ryan Ross	\$25/hour	2H		\$50

March 2024 April 2024

Name of Employee

Admin - Payroll Summary Page

Employee Page

Reservations

Camila Russell Mar 11 - Mar 17 2024

Date	Title	Time	Price
15 Mar	Wellness Workshop	17:00 - 17:45	\$15

Description: Join us for a holistic wellness workshop covering mindfulness, nutrition tips, and light exercises.

Feedback: Joe D. ★★★★☆

Leave Feedback

12:00 - 20:00

Employee - Work Schedule Page

Work Schedule Summary

Hours & Payment Summary

Total Hours: 8

Breakdown by Week

Date	Total Hours	Payment
15/MAR/2024	8	\$160

Ratings & Feedback

Average Rating: ★★

High-Rated: June 9, 2023, ★★★★☆

Low-Rated: April 20, 2021, ★★★★☆

Total Payment: \$160

Employee - Summary Page

Client Page

The screenshot shows a web browser window for 'SereinTeam' with the URL 'sereinteam.vercel.app/app/ange-tech/client'. The main area is titled 'Reservations' and shows a weekly calendar for March 11-17, 2024. The Friday section is highlighted in blue. Below the calendar, there are six reservation cards:

- Wellness Workshop** (17:00 - 17:45) on March 15, led by Camila R.
- Tech Innovation Seminar** (15:00 - 16:05) on March 15, led by Camila R.
- Trendsetter's Fashion Showcase** (18:00 - 18:45) on March 15, led by Camila R.
- Business Meeting** (15:00 - 16:00) on March 15, no details provided.
- Marketing Strategy Session** (15:00 - 16:00) on March 15, no details provided.
- Customer Support Call** (15:00 - 16:00) on March 15, no details provided.

A modal window on the right provides more details about the Tech Innovation Seminar:

- Title:** Tech Innovation Seminar
- Description:** Explore the latest trends and breakthroughs in technology. Join industry experts for an insightful session.
- Date:** 15 Mar
- Time:** 15:00 - 16:05
- Duration:** Hour
- Price:** \$45

Below the details are buttons for 'Leave Feedback' (with a 5-star rating) and 'Done'.

Profile Page

The screenshot shows a web browser window for 'SereinTeam' with the URL 'sereinteam.vercel.app/app/ange-tech/profile'. The page title is 'AngeTech'. There are two tabs: 'Schedule' (selected) and 'Employee Details'. The 'Employee Details' tab shows the profile of Camila Russell:

- Employee:** Camila Russell
- Birthday:** 11/MAR/2024
- Gender:** Female
- E-mail Address:** [redacted]
- Telephone:** 997461020

To the right of the profile information is a large, semi-transparent placeholder for a profile picture of another employee.

Profile Page

System Usability Scale (SUS)

Next, we will apply the System Usability Scale (SUS) to assess the accessibility and ease of use of our application. This evaluation will be based on the principles established by the ISO 9241-11 standard [30], providing guidelines for measuring a product's usability.

The selection of SUS is highly recommended as it has become an industry standard, referenced in over 1300 articles and publications. The highlighted benefits of using SUS include: (1) It is a very easy scale to administer to participants. (2) It can be used with small samples and still yield reliable results. (3) It is valid – effectively distinguishing between usable and non-usable systems. [30]

In our case, the SUS test will be applied to 12 users, divided into four groups of three individuals, each representing one of our predefined user personas. This approach will provide a comprehensive perspective on the user experience from different profiles and needs.

It is important to note that one of the participants has deuteranopia, a type of color blindness affecting the perception of green and red. Including this user in our tests is crucial to evaluating the accessibility of our application for individuals with visual impairments, ensuring our design is inclusive and does not present unnecessary barriers.

Survey template

Rate each item between 1 - 5 with 1 being "Strongly Disagree" and 5 being "Strongly Agree".

	Strongly Disagree			Strongly Agree
1. I think that I would like to use this system frequently.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
2. I found the system unnecessarily complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I thought the system was easy to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I think that I would need the support of a technical person to be able to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I found the various functions in this system were well integrated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I thought there was too much inconsistency in this system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I would imagine that most people would learn to use this system very quickly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I found the system very cumbersome to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I felt very confident using the system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I needed to learn a lot of things before I could get going with this system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To calculate the SUS score, first sum the score contributions from each item. Each item's score contribution will range from 0 to 4. For items 1,3,5,7, and 9 the score contribution is the scale position minus 1. For items 2,4,6,8 and 10, the contribution is 5 minus the scale position. Multiply the sum of the scores by 2.5 to obtain the overall value of SU. [31]

Results

Participant	SUS score
User 1	60
User 2	73
User 3	73
User 4	68
User 5	71
User 6	67
User 7	84
User 8	78
User 9	64
User 10	62
User 11	51
User 12	87
Average Score	69.83

"Based on research, a SUS score above a 68 would be considered above average and anything below 68 is below average, however the best way to interpret your results involves "normalizing" the scores to produce a percentile ranking." [30]

After the initial round of System Usability Scale (SUS) tests, an average score of 69.83 has been obtained. While this result is considered acceptable, it highlights significant areas for improvement in terms of usability and accessibility. An SUS score above 68 is considered exceeded, but the objective is to attain a rating higher than 80, which is recognized as an excellent level of usability in accordance with industry standards. A product scoring above 80 indicates that the majority of users are satisfied with the ease of use and overall experience.

In-depth User Experience Survey

To gain a comprehensive understanding of user perceptions about the application, an in-depth User Experience (UX) survey will be implemented targeted at each of the identified user persona groups. This survey will focus on key aspects of the user experience, such as navigability, alignment with workflows, visual aesthetics, accessibility, and overall satisfaction.

Explanation: Through open-ended and detailed questions, participants will be encouraged to freely express their opinions, experiences, and suggestions related to these crucial aspects of the application. By providing a space for extensive and descriptive responses, users will be able to share their perspectives more thoroughly and deeply.

The survey questions will address topics such as the ease of navigation through the user interface, the extent to which the application's functionalities align with their workflows and specific needs, the visual appeal, and the aesthetic coherence of the design, as well as any barriers or difficulties encountered due to potential disabilities.

Furthermore, users will be encouraged to identify the most satisfying and frustrating aspects of the application, providing details about the reasons behind their perceptions and suggesting potential improvements.

This open and honest feedback will be invaluable for the team, allowing a better understanding of the perceived strengths and weaknesses by each user group.

CONCERNING ACCESSIBILITY, DID YOU ENCOUNTER ANY BARRIERS OR DIFFICULTIES WHILE USING THE APPLICATION DUE TO YOUR [VISUAL/HEARING/MOTOR/COGNITIVE] DISABILITY? IF SO, PLEASE DESCRIBE THESE CHALLENGES IN DETAIL AND SUGGEST IMPROVEMENTS THAT COULD BE EFFECTIVELY IMPLEMENTED.

FROM YOUR PERSPECTIVE AS AN [ADMINISTRATOR/EMPLOYEE/CLIENT], HOW WELL DID THE APPLICATION'S FUNCTIONALITIES ALIGN WITH YOUR NEEDS AND USUAL WORKFLOWS? DELVE INTO ASPECTS THAT WORKED WELL AND THOSE THAT COULD BE IMPROVED, EXPLAINING HOW THESE IMPACTED YOUR EFFICIENCY AND PRODUCTIVITY.

THINKING ABOUT THE OVERALL USER EXPERIENCE, WHAT ASPECT OF THE APPLICATION WAS MOST SATISFYING, AND WHICH WAS THE MOST FRUSTRATING OR DISAPPOINTING? EXPLAIN THE REASONS BEHIND YOUR RESPONSES AND PROVIDE SPECIFIC SUGGESTIONS ON HOW WE COULD IMPROVE USER SATISFACTION.

DESCRIBE YOUR OVERALL EXPERIENCE WITH THE VISUAL AESTHETICS OF THE APPLICATION, INCLUDING DESIGN, COLORS, TYPOGRAPHY, AND THE USE OF ICONS AND GRAPHIC ELEMENTS. WHAT ASPECTS DID YOU FIND PLEASING AND APPEALING, AND WHICH COULD BE OPTIMIZED TO ENHANCE THE VISUAL EXPERIENCE?

Results - 1st Question

From your perspective as an [administrator/employee/client], how well did the application's functionalities align with your needs and usual workflows?

Delve into aspects that worked well and those that could be improved, explaining how these impacted your efficiency and productivity.

Group A

THE APPLICATION'S FEATURES ALIGNED EXCEPTIONALLY WELL WITH MY NEEDS AND TYPICAL WORKFLOWS.

Group B

IN GENERAL, THE APPLICATION WAS QUITE INTUITIVE, BUT I ENCOUNTERED SOME DIFFICULTIES WHEN TRYING TO ADD CLIENTS. HOWEVER, DESPITE MY LIMITED EXPERIENCE, I THOROUGHLY ENJOYED EXPLORING ITS FUNCTIONALITIES.

Group C

THE NAVIGATION WAS SMOOTH, AND I COULD EFFICIENTLY MANAGE MY SCHEDULES AND APPOINTMENTS, WHICH IS CRUCIAL FOR MY WORK STYLE.

Group D

THE APPLICATION'S FUNCTIONALITIES ALIGNED PERFECTLY WITH MY NEEDS AS AN ADMINISTRATOR. EFFICIENT TASK MANAGEMENT AND EASY ACCESS TO INFORMATION SIGNIFICANTLY ENHANCED MY PRODUCTIVITY.

Group E

THE APPLICATION'S FUNCTIONALITIES EFFECTIVELY ALIGNED WITH MY TIME-ORIENTED APPROACH. THE ABILITY TO CARRY OUT DIRECT AND EFFICIENT INTERACTIONS CONTRIBUTED TO OPTIMIZING MY TASK AND SCHEDULE MANAGEMENT.

Group F

SOME TASKS PROVED MORE COMPLICATED THAN EXPECTED, IMPACTING MY EFFICIENCY-FOCUSED APPROACH. I DIDN'T UNDERSTAND HOW ADDING CLIENTS AND EMPLOYEES WORKED.

Results - 2nd Question

Describe your overall experience with the visual aesthetics of the application, including design, colors, typography, and the use of icons and graphic elements. What aspects did you find pleasing and appealing, and which could be optimized to enhance the visual experience?

Group A

THE VISUAL AESTHETICS OF THE APPLICATION WERE GENERALLY PLEASING. THE SOFT COLORS AND COLORFUL DESIGN APPEALED TO ME. HOWEVER, I SUGGEST CONSIDERING A MONOCHROMATIC PALETTE FOR GREATER VISUAL COHERENCE. ADDITIONALLY, THE LETTERS IN THE PAYROLL SECTION WERE A BIT LARGE, AND THERE WERE CHALLENGES WITH LABEL CONCORDANCE IN MY PROFILE,

Group D

THE VISUAL AESTHETICS WERE PLEASING, ALTHOUGH THE LARGE FONTS IN THE PAYROLL SECTION COULD BE IMPROVED. ATTRACTIVE COLORS AND AN INTUITIVE DESIGN FACILITATED THE OVERALL EXPERIENCE.

Group B

I FELT A BIT LOST AS AN ADMINISTRATOR AT THE BEGINNING, ESPECIALLY WITH LARGE BUTTONS AND LABELS. I NOTICED THAT THE "DELETE EMPLOYEE" BUTTON HAS RED LETTERS, BUT THE BUTTON'S BACKGROUND DOES NOT DIFFERENTIATE FROM THE REST, WHICH COULD BE POTENTIALLY DANGEROUS. HOWEVER, AS A CLIENT, I COULD NAVIGATE THROUGH MY TASKS AND APPOINTMENTS SMOOTHLY.

Group E

THE VISUAL AESTHETICS OF THE APPLICATION WERE PLEASANT AND EASY TO FOLLOW. HOWEVER, SOME DETAILS, SUCH AS LARGE FONTS IN CERTAIN SECTIONS, COULD BE IMPROVED TO PROVIDE AN EVEN FASTER AND MORE EFFICIENT EXPERIENCE.

Group C

THE APPLICATION ADAPTED EXCELLENTLY TO MY ON-THE-GO WORK STYLE. HOWEVER, I NOTICED THAT SOME LETTERS WERE A BIT LARGE, WHICH COULD BE IMPROVED FOR A MORE COMFORTABLE EXPERIENCE.

Group F

WHILE THE OVERALL AESTHETICS OF THE APPLICATION ARE ACCEPTABLE, CERTAIN ASPECTS OF THE DESIGN AND ARRANGEMENT OF GRAPHIC ELEMENTS COULD BE CONSIDERED UNINTUITIVE. FOR INSTANCE, A DARKER COLOR PALETTE OR A REDUCTION IN THE NUMBER OF COLORS COULD ENHANCE READABILITY AND VISUAL CLARITY. ADDITIONALLY, SOME ELEMENTS COULD BE REARRANGED TO FACILITATE NAVIGATION AND COMPREHENSION.

Results - 3rd Question

Concerning accessibility, did you encounter any barriers or difficulties while using the application due to your [visual/hearing/motor/cognitive] disability?

If so, please describe these challenges in detail and suggest improvements that could be effectively implemented.

Group A

YES, AS SOMEONE WITH DEUTERANOPIA, I HAD DIFFICULTIES DISTINGUISHING THE ALERT BUTTON FOR POTENTIALLY RISKY ACTIONS. I SUGGEST IMPROVING VISUAL DIFFERENTIATION FOR BETTER ACCESSIBILITY.

Group D

I ENCOUNTERED DIFFICULTIES IN IDENTIFYING CERTAIN BUTTONS DUE TO MY DEUTERANOPIA. I WOULD SUGGEST INCORPORATING HIGHER CONTRAST OR ADDITIONAL INDICATORS FOR CRUCIAL ACTIONS.

Group B

NO, THE LETTERS ARE LARGE, BUT THE APPLICATION SHOULD ADAPT BETTER FOR MOBILE DEVICES.

Group E

ACCESSIBILITY WAS QUITE GOOD OVERALL. I DIDN'T ENCOUNTER SIGNIFICANT BARRIERS, BUT I SUGGEST OPTIMIZING THE DISPLAY ON MOBILE DEVICES FOR ADDED CONVENIENCE.

Group C

NOTHING

Group F

I FACED ACCESSIBILITY CHALLENGES WHEN ATTEMPTING TO CUSTOMIZE CERTAIN ASPECTS OF THE APPLICATION ACCORDING TO MY PREFERENCES. IT WOULD BE BENEFICIAL TO ENHANCE ACCESSIBILITY, ENSURING THAT THE APPLICATION IS EASILY USABLE FOR ALL USERS. GREATER FLEXIBILITY IN CUSTOMIZATION, SUCH AS FONT SIZE ADJUSTMENTS OR ARRANGEMENT OF ELEMENTS, WOULD BE A VALUABLE IMPROVEMENT.

Results - 4th Question

Thinking about the overall user experience, what aspect of the application was most satisfying, and which was the most frustrating or disappointing? Explain the reasons behind your responses and provide specific suggestions on how we could improve user satisfaction.

Group A

THE MOST SATISFYING ASPECT WAS THE COMPREHENSIVE SOLUTION THE APPLICATION OFFERED, MAKING CLIENT AND EMPLOYEE MANAGEMENT EASIER. HOWEVER, THE DISORDER WITH THE LABELS ON MY PROFILE WAS A FRUSTRATING ASPECT THAT COULD BE IMPROVED FOR A MORE ORGANIZED AND EFFICIENT EXPERIENCE.

Group D

THE MOST SATISFYING ASPECT WAS THE ABILITY TO CARRY OUT QUICK AND DIRECT INTERACTIONS. HOWEVER, THE LACK OF CUSTOMIZATION OPTIONS TO TAILOR THE APPLICATION TO MY PREFERENCES WAS A DISAPPOINTING FACTOR.

Group B

YES, THE LABELS ON THE PROFILE PAGE ARE INCORRECT. THIS CAUSED SOME CONFUSION IN MY EXPERIENCE.

Group E

THE MOST SATISFYING ASPECT WAS THE EFFICIENCY IN TASK MANAGEMENT. THE LACK OF CUSTOMIZATION IN CERTAIN AREAS WAS A DISAPPOINTING FACTOR. I RECOMMEND PROVIDING CUSTOMIZATION OPTIONS TO CATER TO DIVERSE PREFERENCES. THE MOST SATISFYING ELEMENT WAS THE EASE OF NAVIGATION. HOWEVER, THE DISCREPANCY BETWEEN LABELS AND CONTENT IN THE PROFILE CAUSED SOME CONFUSION AND STRESS.

Group C

I DIDN'T EXPERIENCE SIGNIFICANT ACCESSIBILITY ISSUES. HOWEVER, SOME LETTERS WERE A BIT LARGE AND COULD BE IMPROVED TO ENSURE AN OPTIMAL EXPERIENCE.

Group F

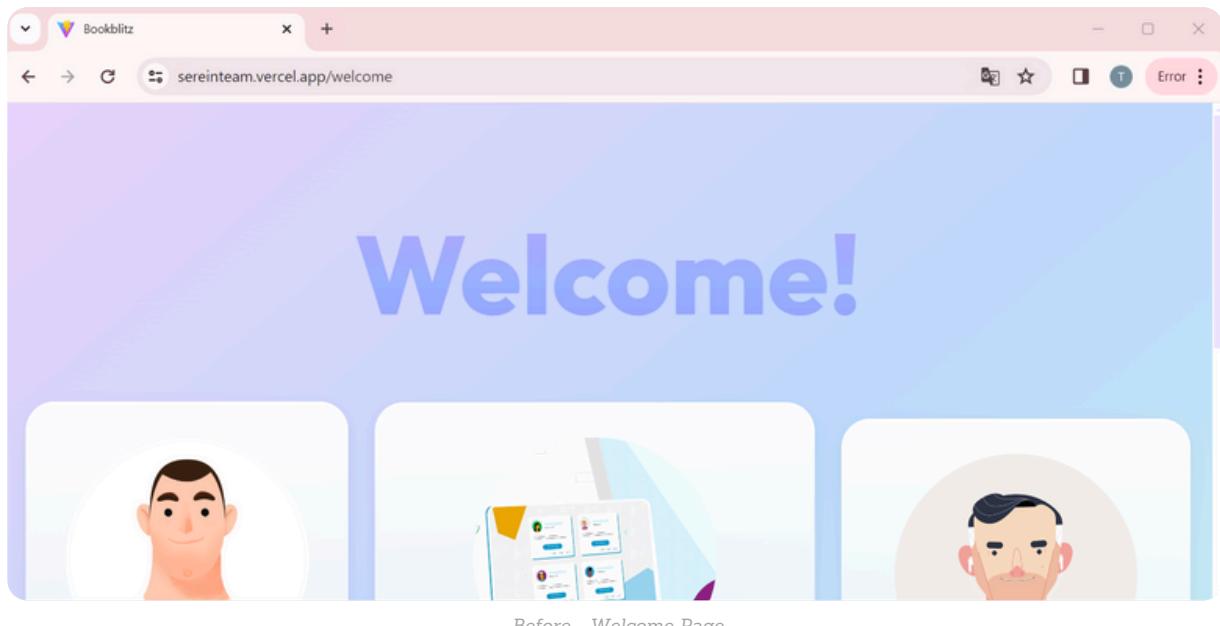
THE APPLICATION IS NOT AVAILABLE FOR MOBILE DEVICES, LIMITING MY ABILITY TO ACCESS AND MANAGE TASKS EFFICIENTLY WHILE ON THE MOVE. MOBILE AVAILABILITY WOULD BE A CRUCIAL ADDITION TO ALIGN WITH MY EFFICIENCY-FOCUSED APPROACH AND THE SIMPLIFICATION OF DAILY TASKS.

First Iteration Improvements

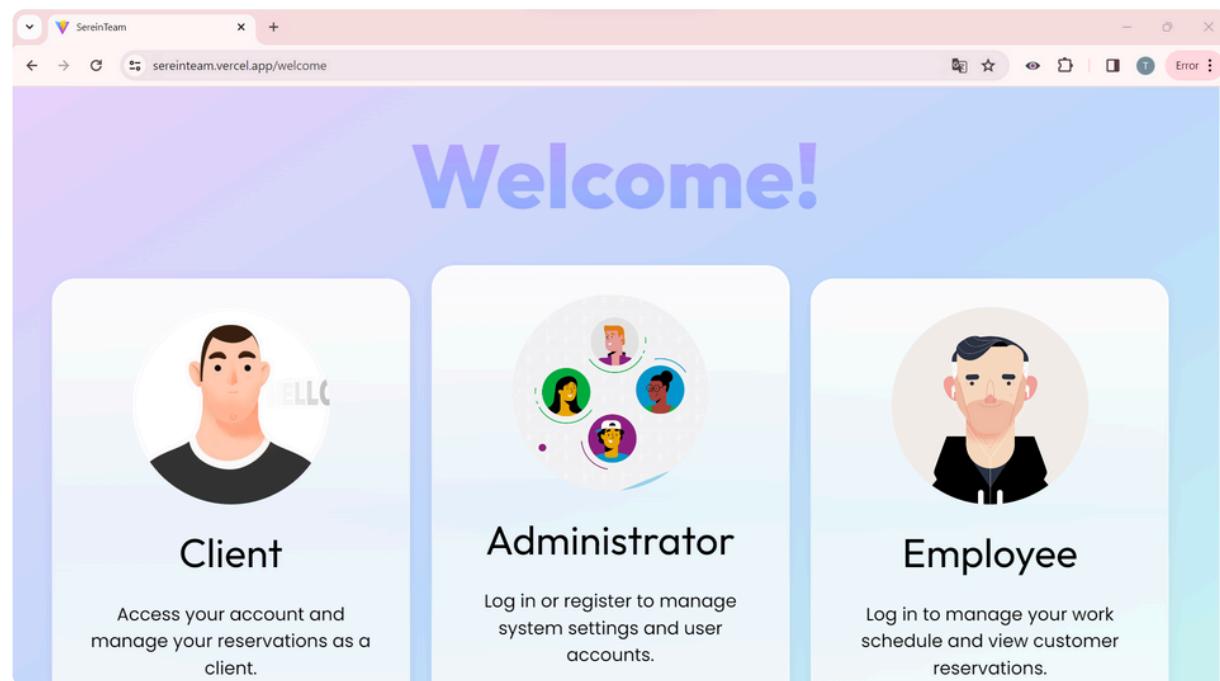


This section outlines the key optimizations directly derived from user feedback, highlighting how we have proactively addressed the concerns and suggestions of our end users. From improvements in the user interface to adjustments in workflow and the introduction of new features, each iteration has been driven by the goal of providing a more intuitive, efficient solution aligned with the real needs of our users. The following details the key implemented changes.

One of the key aspects addressed based on user feedback was the **optimization of spacing and element distribution** in the interface. Initially, certain sections exhibited a visual imbalance, with excessive space in some areas and a sense of overcrowding in others. As seen in the following image, the upper area of the interface displayed excessive spacing, creating a feeling of emptiness and wasting valuable screen real estate. Efforts were made to adjust the vertical spacing by reducing unnecessary distances and achieving a more balanced distribution of elements.



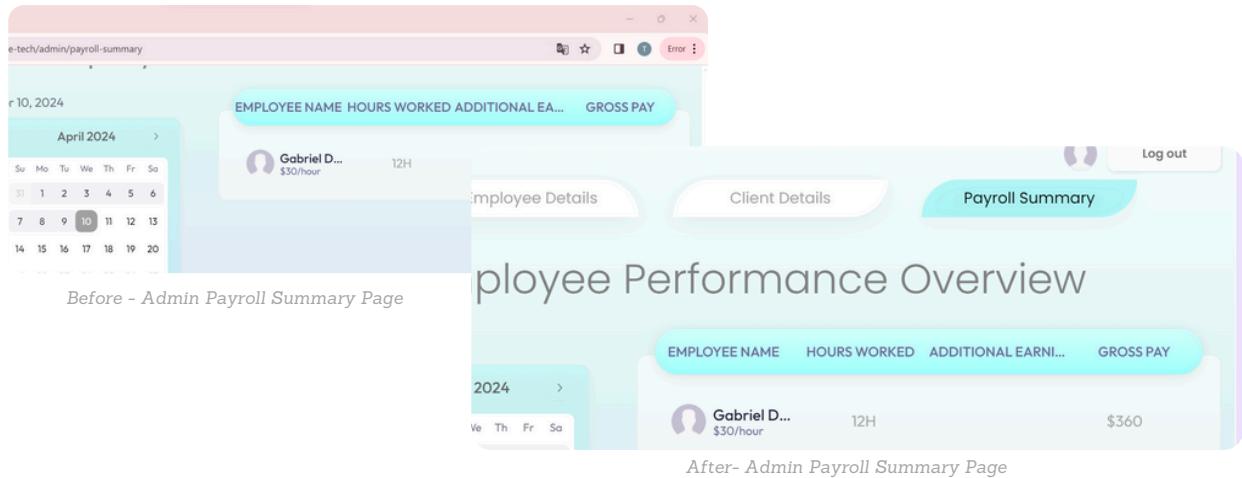
Before - Welcome Page



After - Welcome Page

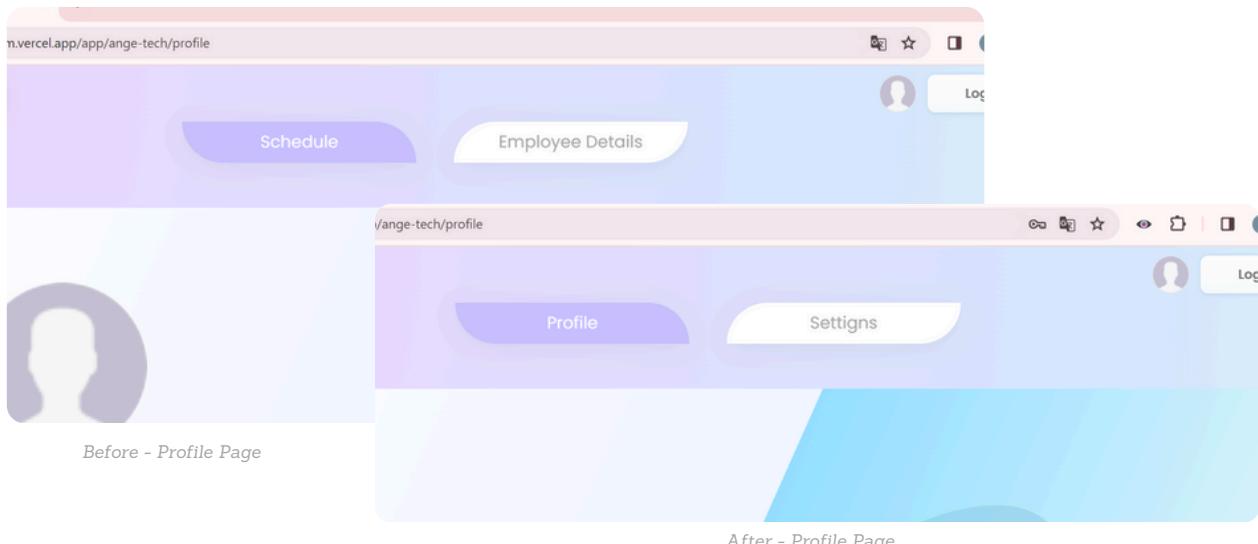
Another area of improvement identified was the text label size in certain sections of the interface. Initially, some of these labels had **disproportionately large sizes**, creating a sense of visual clutter and hindering the smooth reading of information.

In response to these observations, careful adjustments were made to the typography, reducing the size of the labels to achieve a more balanced and harmonious appearance. As seen in the following image, the change in label size has contributed to a more organized and aesthetically pleasing distribution of elements on the screen.

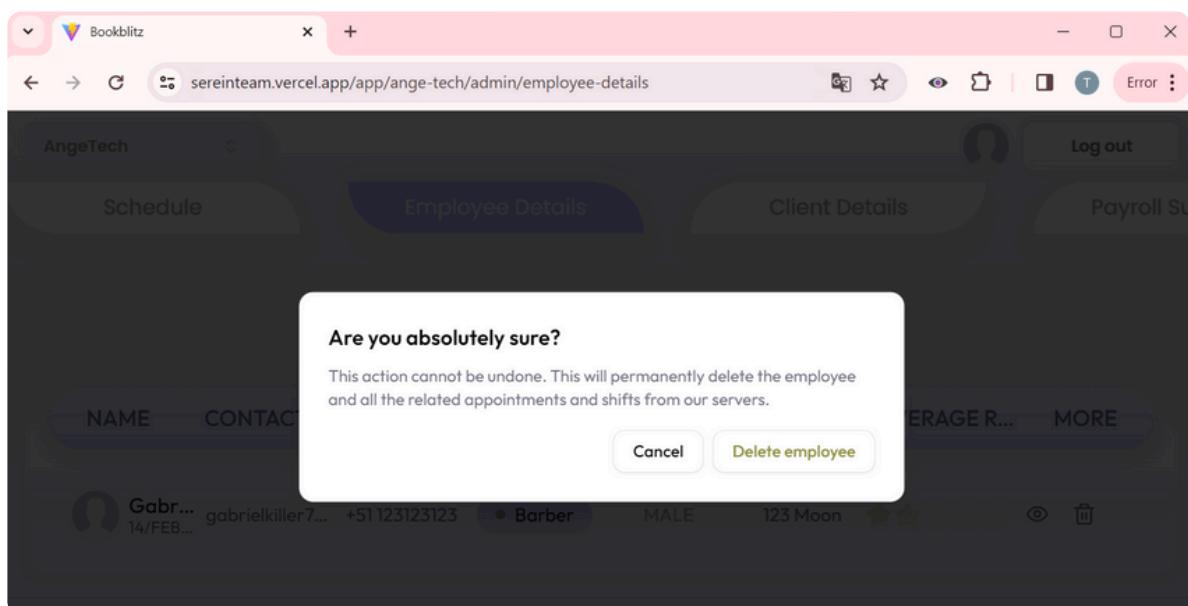


One of the crucial aspects identified was the presence of **incorrect labels** in the profile section of our application. Several users reported confusion and a lack of clarity when encountering field names that did not match the expected information in that section.

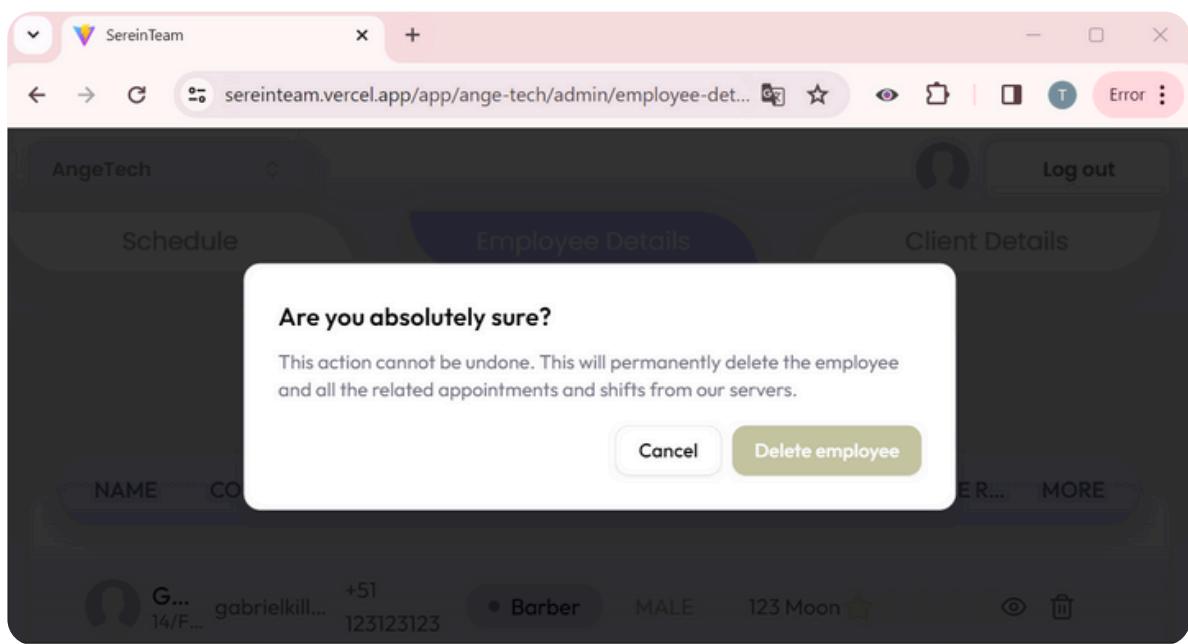
In response to these observations, prompt action was taken to address this issue and ensure a more intuitive and accurate user experience. After a thorough review, the incorrect labels were identified and updated, replaced with descriptive and consistent names that appropriately reflect the content of each field.



One of the fundamental aspects in application design is ensuring an accessible and inclusive experience for all users, regardless of their visual abilities or disabilities. During the feedback process, we encountered a significant challenge related to the accessibility of our alerts and action buttons. Specifically, a user with deutanopia, a form of color blindness that makes it difficult to distinguish between certain shades of green and red, reported issues clearly differentiating confirmation and cancellation buttons in critical action alerts, such as deleting a client or employee. After thorough analysis and additional testing with users experiencing different types of color blindness, the decision was made to change the color of the button to a more distinctive and accessible shade.



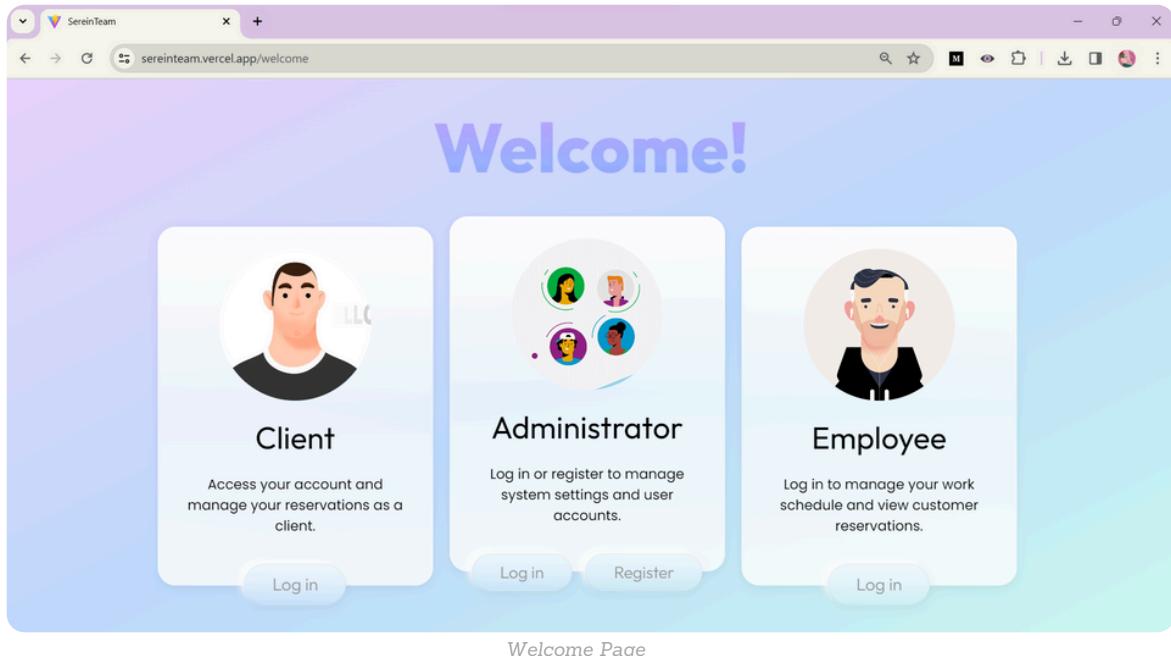
Before - Alert Dialog



After - Alert Dialog

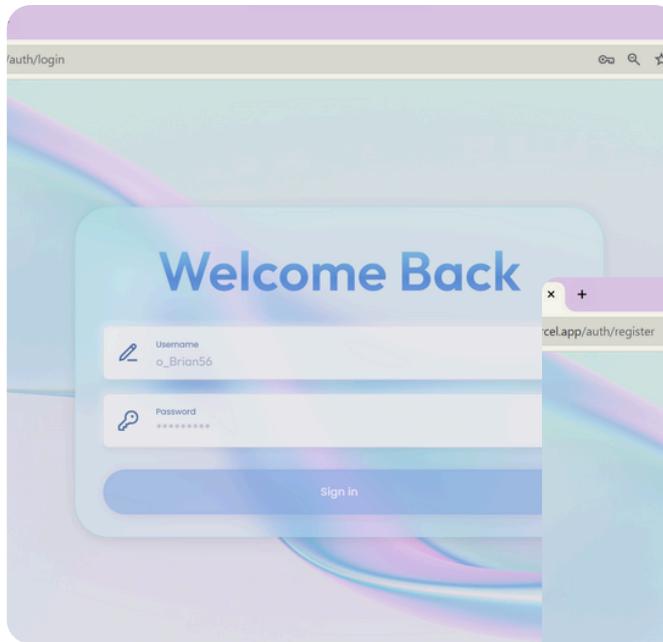
Second Iteration

Welcome Page



Welcome Page

Login Pages



Login page

The screenshot shows a web browser window with the URL `vercel.app/auth/register`. It features a "Register" header and six input fields:

- "First Name" and "Last Name"
- "Business Email" (containing "example@gmail.com")
- "Username" (containing "o_Brian56")
- "Password" (containing a masked password)
- "Company Name" (containing "Umbrella Corporation")
- "Company URL" (containing "umbrella-corporation")

A "Register" button is at the bottom.

Register Page

Admin Page

Admin - Schedule Page

The Admin - Schedule Page displays a weekly shift calendar from March 11 to March 17, 2024. The interface includes tabs for Employee Details, Client Details, and Payroll Summary. The schedule grid shows time slots for each employee, with specific shifts highlighted in colored boxes (e.g., green for 07:00 - 17:00 Appointments). A modal window titled "Appointments" is overlaid, showing three entries for Joe Douncey on March 15th at various times and locations.

Admin - Employee Details Page

Employee Directory

The Admin - Employee Details Page shows the Employee Directory with four entries:

Name	Contact	Phone	Position	Gender	Address	Rating	Actions
Brian Dallas	brian.dallas@example.com	(555) 555-1234	Marketing Coordinator	MALE	567 Elm Street, Apt 3B	★★★★★	
Andrea Smith	andrea.smith@maildomain...	(555) 555-6789	Human Resources Specialist	FEMALE	789 Oak Lane, Suite 2C	★★★☆☆	
Ana De Armas	ana.dea@emailprovider.com	(555) 555-4321	Software Engineer	FEMALE			
Ryan Ross	ryan.ross@examplemail.com	(555) 555-8765	Graphic Designer	MALE			

Are you absolutely sure?
This action cannot be undone. This will permanently delete the client and all the related appointments from our servers.
Delete client

Admin - Client Details Page

Client Directory

The Admin - Client Details Page shows the Client Directory with four entries:

Name	Contact	Phone	Gender	More
David Smith	david.smith@example...	(555) 555-7890	MALE	
Mirta Herrera	mirta.herrera@example...	(555) 555-5678	FEMALE	
Matthew Williams	matthew.williams@example...	(555) 555-8901	MALE	
Joe Douncey	joe.douncey@example...	(555) 555-6789	OTHER	

The screenshot shows a payroll summary interface. At the top, there are tabs for Schedule, Employee Details, Client Details, and Payroll Summary, with Payroll Summary being the active tab. Below the tabs, the title "Payroll & Employee Performance Overview" is displayed. A date range selector "Mar 10, 2024 - Apr 10, 2024" is shown above two calendar grids: March 2024 and April 2024. To the right of the calendars is a table listing employees with their names, hours worked, additional earnings, and gross pay.

Employee Name	Hours Worked	Additional Earnings	Gross Pay
Brian Dallas \$15/hour	10H		\$150
Andrea Smith \$35/hour	8H		\$280
Ana De Armas \$25/hour	OH		\$0
Ryan Ross \$25/hour	2H		\$50
Camila Russell \$20/hour	8H		\$160

On the left side, there is a sidebar for an employee named Andrea Smith, showing her profile picture, name, address (789 Oak Lane, Suite 2C, Meadowville, Texas, 67890), birthday (06/AUG/2020), and phone number (555 555-6789).

Admin - Payroll Summary Page

Employee Page

The screenshot displays two pages for an employee named Camila Russell. The top part is the "Employee - Schedule Page", which features a weekly calendar view from Monday to Sunday. It highlights specific days with colored boxes (pink, green, blue) and lists events such as "Virtual Coffee Chat" on March 15th and "Wellness Workshop" on March 15th. A modal window is open over the schedule, showing details for a reservation on March 15th from 19:00 to 19:45, titled "Fashion Design Brainstorm". The bottom part is the "Employee - Summary Page", which provides a summary of Camila's work schedule and payment information. It includes a "Work Schedule" section with a calendar, a "Hours & Payment Summary" section showing "Total Hours" of 8 and a "Payment" of \$160, and a "Ratings & Feedback" section with average ratings and high/low-rated reviews.

Employee - Summary Page

Client Page

The screenshot shows a web browser window for 'SereinTeam' with the URL 'sereinteam.vercel.app/app/ange-tech/client'. The main heading is 'Reservations' under the user 'Alexis Jenkins'. A date range 'Mar 11 - Mar 17' and year '2024' are selected. The calendar shows several events for Friday, March 15:

- Wellness Workshop (17:00 - 17:45) by Camila R.
- Trendsetter's Fashion Showcase (18:00 - 18:45) by Camila R.
- Virtual Coffee Chat (12:30 - 14:00) by Camila R.

A detailed view of the 'Virtual Coffee Chat' is shown on the right, with a pink gradient header containing the date '15 Mar', time '12:30 - 14:00 Hour', and price '\$10 Price'. The event title is 'Virtual Coffee Chat' and the description is 'Casual online meeting to connect, share ideas, and discuss upcoming projects. Grab your favorite bev'. It includes a profile picture of Camila R., a 5-star rating, and a 'Leave Feedback' button. A 'Done' button is at the bottom right.

Client Page

Profile Page

The screenshot shows a web browser window for 'SereinTeam' with the URL 'sereinteam.vercel.app/app/ange-tech/profile'. The main heading is 'Profile' under the user 'Camila Russell'. The profile picture is a circular image of a woman with long dark hair, wearing an orange top. The profile information includes:

- Name: Camila Russell
- Title: Employee
- Birthday: 11/MAR/2024
- Gender: Female
- E-mail Address: (placeholder)
- Telephone: 997461020

A large blue placeholder area is visible on the right side of the page.

Profile Page

System Usability Scale (SUS)

Results

Participant	SUS score
User 1	80
User 2	74
User 3	81
User 4	68
User 5	73
User 6	73
User 7	68
User 8	65
User 9	74
User 10	72
User 11	68
User 12	90
Average Score	73.83

The results show a score of 73, representing a significant increase of 5 points compared to the previous rating. This substantial improvement in the SUS score is a tangible testament to the positive impact of the optimizations implemented in response to user feedback and suggestions. However, despite this encouraging progress, there is awareness that there is still room for further improvement to provide an exceptional user experience. The goal is to achieve increasingly higher SUS scores, reflecting optimal usability and user satisfaction.

In-depth User Experience Survey

This open and honest feedback will be invaluable for the team, allowing a better understanding of the perceived strengths and weaknesses by each user group.

CONCERNING ACCESSIBILITY, DID YOU ENCOUNTER ANY BARRIERS OR DIFFICULTIES WHILE USING THE APPLICATION DUE TO YOUR [VISUAL/HEARING/MOTOR/COGNITIVE] DISABILITY? IF SO, PLEASE DESCRIBE THESE CHALLENGES IN DETAIL AND SUGGEST IMPROVEMENTS THAT COULD BE EFFECTIVELY IMPLEMENTED.

FROM YOUR PERSPECTIVE AS AN [ADMINISTRATOR/EMPLOYEE/CLIENT], HOW WELL DID THE APPLICATION'S FUNCTIONALITIES ALIGN WITH YOUR NEEDS AND USUAL WORKFLOWS? DELVE INTO ASPECTS THAT WORKED WELL AND THOSE THAT COULD BE IMPROVED, EXPLAINING HOW THESE IMPACTED YOUR EFFICIENCY AND PRODUCTIVITY.

THINKING ABOUT THE OVERALL USER EXPERIENCE, WHAT ASPECT OF THE APPLICATION WAS MOST SATISFYING, AND WHICH WAS THE MOST FRUSTRATING OR DISAPPOINTING? EXPLAIN THE REASONS BEHIND YOUR RESPONSES AND PROVIDE SPECIFIC SUGGESTIONS ON HOW WE COULD IMPROVE USER SATISFACTION.

DESCRIBE YOUR OVERALL EXPERIENCE WITH THE VISUAL AESTHETICS OF THE APPLICATION, INCLUDING DESIGN, COLORS, TYPOGRAPHY, AND THE USE OF ICONS AND GRAPHIC ELEMENTS. WHAT ASPECTS DID YOU FIND PLEASING AND APPEALING, AND WHICH COULD BE OPTIMIZED TO ENHANCE THE VISUAL EXPERIENCE?

Results - 1st Question

From your perspective as an [administrator/employee/client], how well did the application's functionalities align with your needs and usual workflows?

Delve into aspects that worked well and those that could be improved, explaining how these impacted your efficiency and productivity.

Group A

THE EYE ICON BUTTON FOR BOTH EMPLOYEES AND CLIENTS IS NOT FUNCTIONAL, CAUSING SOME FRUSTRATION. I INITIALLY THOUGHT THERE WAS AN ISSUE WITH MY SOFTWARE DUE TO THIS MALFUNCTION.

Group D

I ENCOUNTERED AN ISSUE WHEN ADDING AN EMPLOYEE, DELETING, AND THEN RE-ADDING THEM. A RED ERROR MESSAGE APPEARED, SEEMINGLY RELATED TO THE UNDERLYING CODE. SUCH MESSAGES SHOULD NOT BE VISIBLE TO USERS.

Group B

AS AN ADMINISTRATOR, VIEWING THE PAYROLL SUMMARY IS INCONVENIENT BECAUSE EVERYTHING APPEARS EXCESSIVELY LARGE IN THE INTERFACE.

Group E

ADDING THE BIRTH YEAR OF AN EMPLOYEE OR CLIENT AS AN ADMINISTRATOR IS A SOMEWHAT COMPLEX AND UNINTUITIVE PROCESS.

Group C

IT WAS FASCINATING HOW I MANAGED TO CONNECT EVERYTHING SEAMLESSLY. I FOUND IT IMPECCABLE HOW THE APPLICATION INTEGRATES VARIOUS FUNCTIONS INTO A SINGLE PLATFORM.

Group F

THE APPOINTMENT DISPLAY ON THE RIGHT SIDE AS A CLIENT IS TOO SMALL, MAKING IT CHALLENGING TO READ AND UNDERSTAND.

Results - 2nd Question

Describe your overall experience with the visual aesthetics of the application, including design, colors, typography, and the use of icons and graphic elements. What aspects did you find pleasing and appealing, and which could be optimized to enhance the visual experience?

Group A

I REALLY LIKE THE SERENE AND CALM COLOR PALETTE USED IN THE BACKGROUNDS; IT BRINGS A SENSE OF TRANQUILITY TO THE EXPERIENCE.

Group D

THE ABILITY TO ADD IMAGES TO MY EMPLOYEES AND CLIENTS IS AN EXCELLENT FEATURE. IT HELPS ME REMEMBER WHOM I'VE ASSIGNED TASKS OR RESERVATIONS TO.

Group B

DESPITE THE IMPROVEMENT IN READABILITY, THE APP IS STILL TOO COLORFUL FOR MY TASTE, AND IT TENDS TO BE OVERWHELMING.

Group E

LEGIBILITY HAS IMPROVED SIGNIFICANTLY; THE FONT SIZE IS APPROPRIATE, AND SPACINGS HAVE BEEN ADJUSTED CORRECTLY.

Group C

THE APPLICATION REMINDS ME OF GAMES AND APPS FROM MY CHILDHOOD, WHICH IS NOT A BAD THING. IT EVOKE A FEELING OF PEACE AND FAMILIARITY.

Group F

THE BUTTONS ARE CLEAR AND VISUALLY APPEALING, WHICH I REALLY LIKE. THE FONT CHOICE IS FITTING, AND THE LABELS ON THE PROFILE PAGE ARE FINALLY ACCURATE.

Results - 3rd Question

Concerning accessibility, did you encounter any barriers or difficulties while using the application due to your [visual/hearing/motor/cognitive] disability?

If so, please describe these challenges in detail and suggest improvements that could be effectively implemented.

Group A

THE ALERT BUTTON FOR CONFIRMING THE DELETION OF AN EMPLOYEE OR CLIENT IS NOW VISUALLY APPEALING AND RECOGNIZABLE TO ME (AS SOMEONE WITH DEUTERANOPIA).

Group D

THE LEGIBILITY OF TEXT IS GOOD; THE FONT SIZE STRIKES A BALANCE, MAKING IT QUITE ACCESSIBLE.

Group B

THE ALERT BUTTONS HAVE BEEN MODIFIED FOR RECOGNITION, WHICH IS GREAT. THE APP IS QUITE ACCESSIBLE. HOWEVER, IT'S DISAPPOINTING THAT DETAILS OF EMPLOYEES AND CLIENTS CAN'T BE VIEWED IN MORE DETAIL FOR SOMEONE WITH LIMITED VISION DUE TO SMALL TEXT IN TABLES.

Group E

I'D APPRECIATE A MOBILE VERSION FOR ON-THE-GO WORK, CATERING TO USERS LIKE ME WHO PREFER USING APPLICATIONS ON THEIR PHONES.

Group C

LARGE FONTS AND SOFT COLORS MAKE THE APP COMFORTABLE FOR THOSE WHO PREFER SUBTLE CONTRASTS.

Group F

IMAGES ARE LARGE, AND I CAN SEE DETAILS IN APPOINTMENTS. THE LARGE HOURS AND ISOLATED MODALS HELP FOCUS ON SPECIFIC CONTENT WITHOUT DISTRACTION FROM THE BACKGROUND'S STRONG COLORS, WHICH IS BENEFICIAL FOR THOSE SENSITIVE TO THEM.

Results - 4th Question

Thinking about the overall user experience, what aspect of the application was most satisfying, and which was the most frustrating or disappointing? Explain the reasons behind your responses and provide specific suggestions on how we could improve user satisfaction.

Group A

THE MOST SATISFYING ASPECT FOR ME WAS THE IMPLEMENTATION OF FEATURES TO MAKE THE SYSTEM ALL-IN-ONE, SIGNIFICANTLY IMPROVING MY WORK AND MANAGEMENT OF EMPLOYEES AND CLIENTS. HOWEVER, IT WAS A BIT FRUSTRATING THAT THE EYE ICON FOR DETAILED VIEWS OF EMPLOYEES AND CLIENTS WASN'T FUNCTIONING.

Group D

THE PAGE LOOKS VERY NICE, AND I APPRECIATED THE MULTITUDE OF FUNCTIONS AND INTERESTING DETAILS. HOWEVER, I STRUGGLED TO FIND THE BUTTON TO EDIT APPOINTMENTS UNTIL I ACCIDENTALLY RIGHT-CLICKED ON AN APPOINTMENT.

Group B

I APPRECIATED THE EASE OF USING THE PROGRAM, BUT IT WAS FRUSTRATING THAT THE EYE ICON COULDN'T BE UTILIZED.

Group E

THE FUNCTIONALITY OF USING EMAILS TO HANDLE USERNAMES AND PASSWORDS CAUGHT MY INTEREST.

Group C

I REALLY LIKED THE EASE OF USE FROM REGISTRATION ONWARDS. IT'S INTRIGUING HOW ADMINISTRATORS DON'T NEED TO INTERACT WITH CONFIDENTIAL INFORMATION ABOUT CLIENTS OR EMPLOYEES. HOWEVER, THE COLORS ARE STILL TOO VIBRANT.

Group F

OVERALL, EVERYTHING IS QUITE GOOD, BUT I STILL DON'T LIKE THE COLORS, AND THERE'S ROOM FOR IMPROVEMENT IN INTUITIVENESS.

Second Iteration **Improvements**



One of the critical aspects identified through user experience feedback and Usability Rating System (SUS) results was an issue with the details view icon on the employee and client directory page for the administrator profile. Several users reported that clicking on this icon did not display the expected modal window with the detailed information of the corresponding employee or client.

After thorough investigation, the root cause of the problem was identified: an apparent bug within the code preventing the correct visualization of the modal. This issue not only caused inconvenience for users but also limited the key functionality of accessing comprehensive details of employee and client profiles.

Understanding the significance of this functionality for efficient administrator workflows, diligent efforts were made to debug and correct the affected code. Following a series of rigorous tests, an effective solution was implemented, addressing the root problem.

As a result, the details view icon now functions correctly.

The screenshot shows the 'Employee Details' tab selected in the navigation bar. Below it, the 'Employee Directory' section lists two employees:

NAME	CONTACT	PHONE	POSITION	GENDER	ADDRESS	AVERAGE RATING	MORE
Brian Dallas 19/MAR/2020	brian.dallas@example.com	(555) 555-1234	Marketing Coordinator	MALE	567 Elm Street, Apt 3B	★★★★★	
Andrea Smith 06/AUG/2020	andrea.smith@emaildoma...	(555) 555-6789	Human Resources Specialist	FEMALE	789 Oak Lane, Suite 2C	★★★★★	

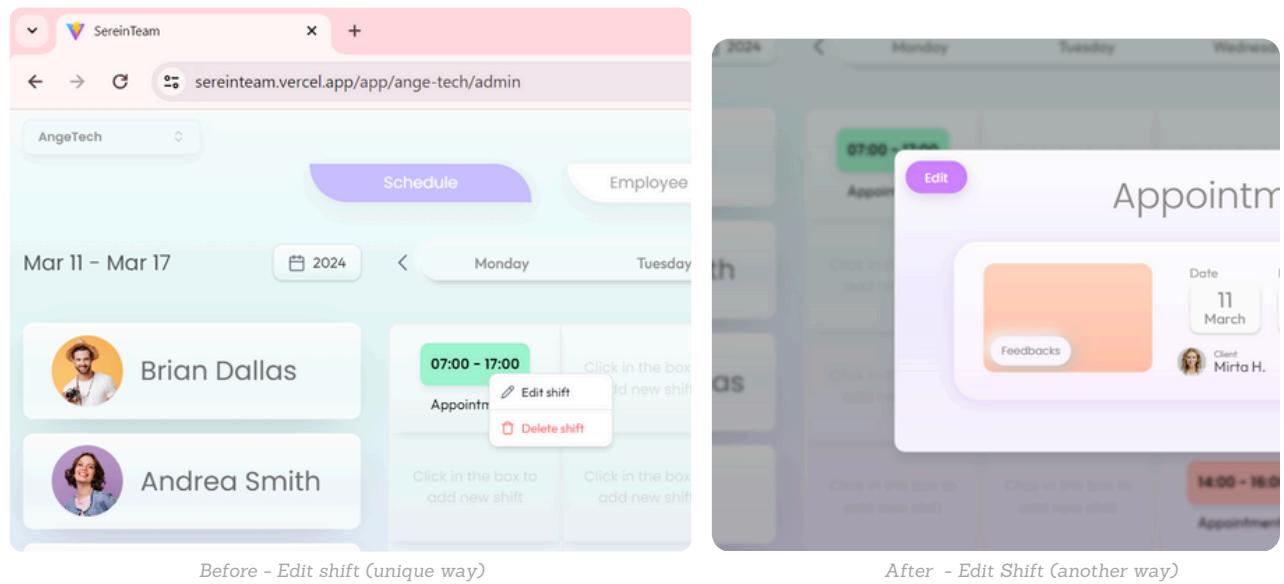
Before - Eye Icon

The image contains two parts demonstrating the resolution of the issue:

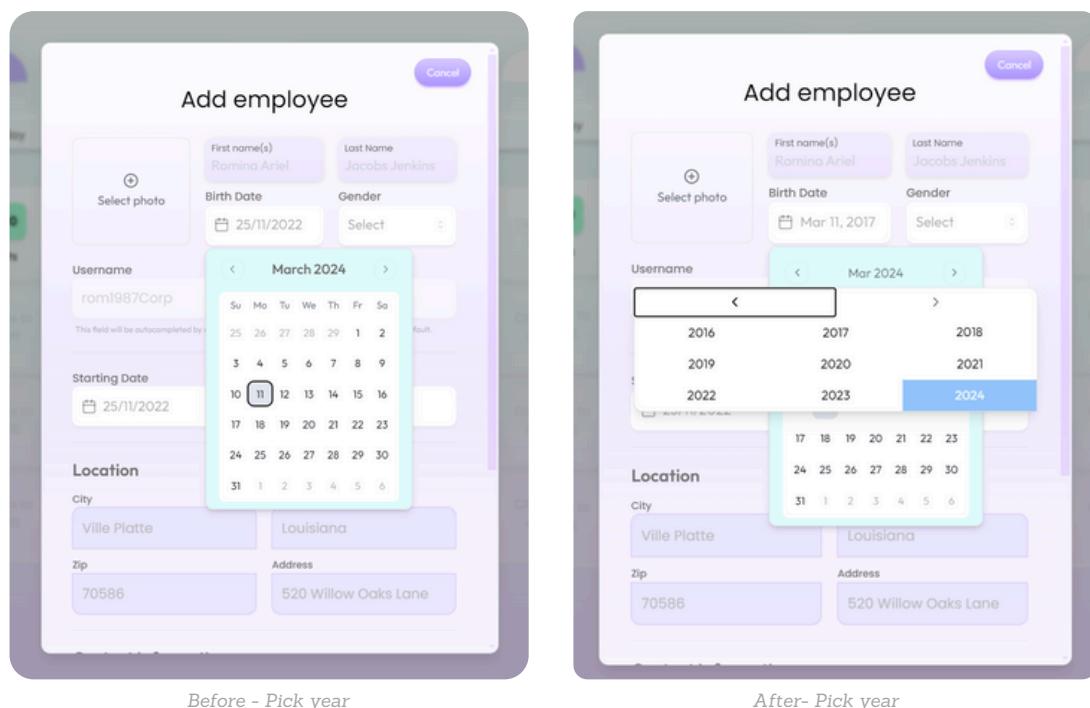
- After- Eye Icon Employee Details:** A screenshot of the application showing a modal window for an employee named Mirta Herrera. The modal displays her profile picture, name, title, and contact information. An 'Eye' icon is present in the top right corner of the modal.
- After- Eye Icon Clients Details:** Another screenshot showing a modal for a client. Similar to the employee modal, it includes a profile picture, name, title, and contact information, with an 'Eye' icon in the top right corner.

Purple arrows from the first screenshot point to the 'Eye' icons in both the 'Employee Details' and 'Clients Details' modals.

Another identified area for improvement was the lack of intuitiveness when attempting to edit employee shifts from the administrator's profile. Initially, the process for performing this task was neither clear nor evident, requiring a right-click action, causing confusion and hindering administrators' efficient workflow. In response to this feedback, the decision was made to add a new button at the top of each shift.

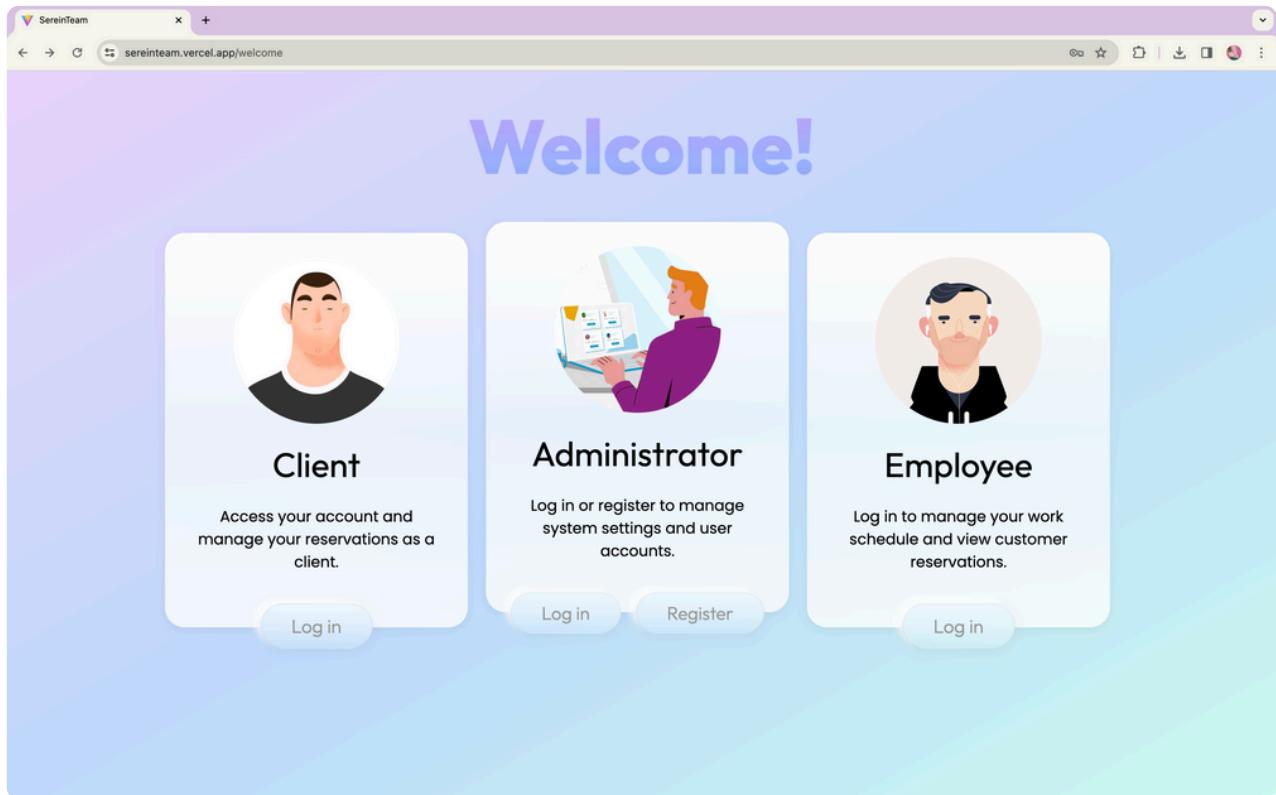


Finally, the system's handling of selecting the birth year when creating a new employee or client was improved. To enhance user experience, a year picker was implemented, allowing users to choose the desired year more easily and efficiently. This eliminates the need to scroll continuously with arrows, addressing the inconvenience and monotony associated with the previous method.

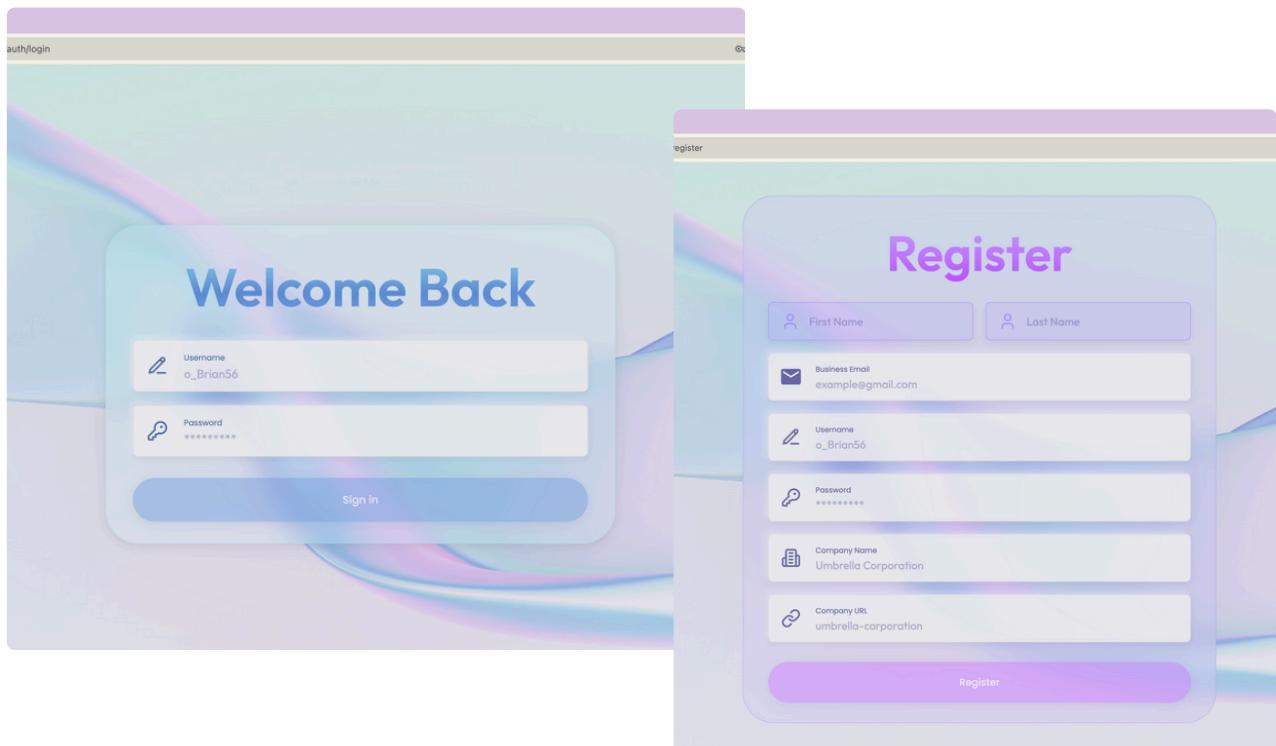


Final Product

Welcome Page



Login Pages



Admin Page

The screenshot shows the Admin Page interface. At the top, there are four tabs: Schedule, Employee Details, Client Details, and Payroll Summary. The Schedule tab is active, displaying a weekly calendar for March 11 - Mar 17, 2024. On the left, employee names are listed with their profile pictures: Brian Dallas, Andrea Smith, Ana De Armas, and Ryan Ross. The main area shows a grid of time slots (07:00 - 17:00 and 14:00 - 22:00) for each day. A modal window titled "Edit shift" is overlaid on the calendar, showing specific shift details. Below the calendar, there's a section for "Appointments" with two entries: one for Brian Dallas and one for Ryan Ross. At the bottom, there's a button to "Add new employee".

The screenshot shows the Employee Directory page. At the top, there are four tabs: Schedule, Employee Details, Client Details, and Payroll Summary. The Employee Details tab is active. Below the tabs, there's a search bar and a large heading "Employee Directory". The main content is a table with columns: NAME, CONTACT, PHONE, POSITION, GENDER, ADDRESS, AVERAGE RATING, and MORE. Each row represents an employee with their name, hire date, contact information, phone number, position, gender, address, average rating (with a star icon), and edit/delete icons. At the bottom, there's a button to "Add new employee".

SereinTeam

sereinteam.vercel.app/app/ange-tech/admin/client-details

Log out

Schedule Employee Details Client Details Payroll Summary

Client Directory

NAME	CONTACT	PHONE	GENDER	MORE
David Smith 05/MAR/2024	david.smith@example.com	(555) 555-7890	MALE	
Mirta Herrera... 03/MAR/2024	mirta.herrera@example.com	(555) 555-5678	FEMALE	
		(555) 555-8901	MALE	
		(555) 555-6789	OTHER	
		(555) 555-7890	OTHER	

Are you absolutely sure?
This action cannot be undone. This will permanently delete the client and all the related appointments from our servers.

Add client

First name(s): Romina Ariel Last Name: Jacobs Jenkins

Birth Date: 25/11/2022 Gender: Select

Username: romi987Corp 8-digit Password: q@?KC\Yh7C

Contact Information

Email Address: romi9@gmail.com Telephone: (808) 555-0111

Add new client

David Smith
Client
Birthday: 05/MAR/2024
Gender: Male
E-mail Address: david.smith@examplemail.com
Telephone: (555) 555-7890

AngTech

Schedule Employee Details Client Details Payroll Summary

Payroll & Employee Performance Overview

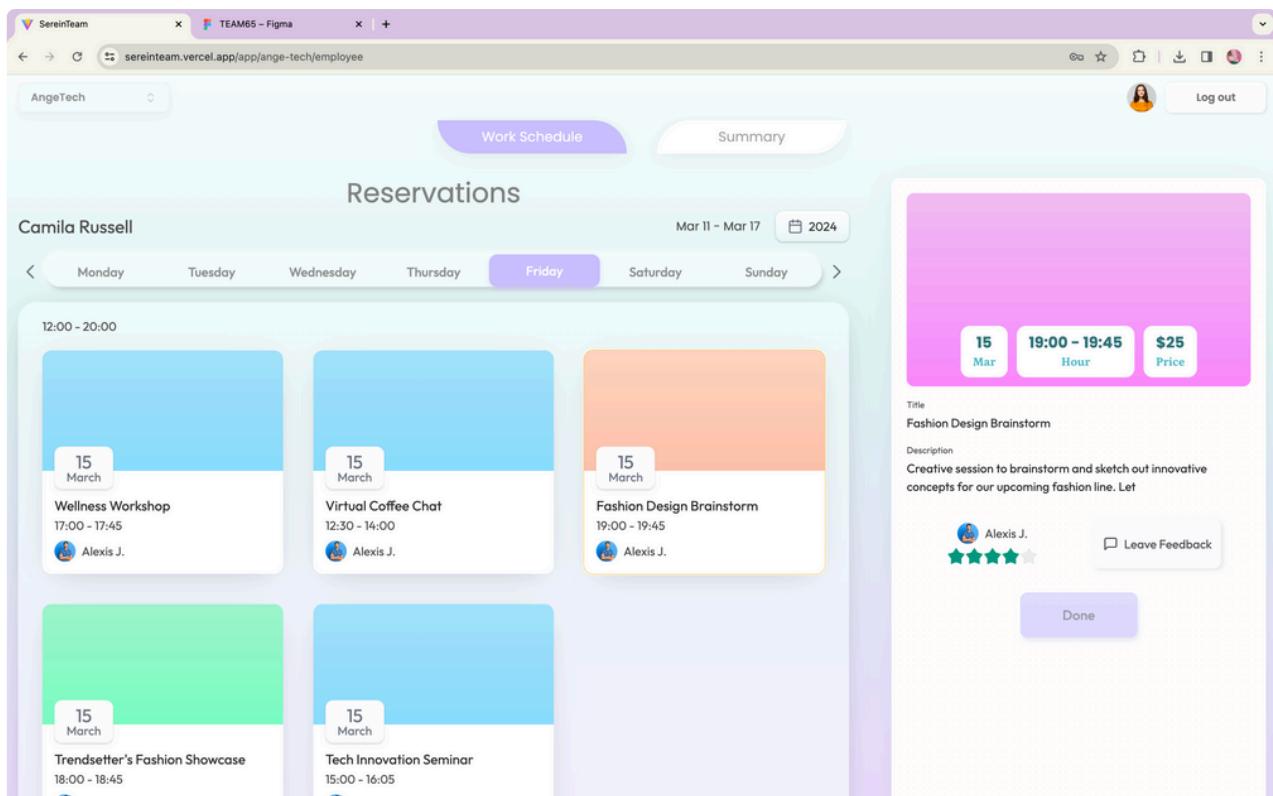
Mar 11, 2024 - Apr 11, 2024

EMPLOYEE NAME	HOURS WORKED	ADDITIONAL EARNINGS	GROSS PAY
Brian Dallas \$15/hour	10H		\$150
Andrea Smith \$35/hour	8H		\$280
Ana De Armas \$25/hour	0H		\$0
Brian Dallas \$15/hour	10H		\$150
Andrea Smith \$35/hour	8H		\$280
Ana De Armas \$25/hour	0H		\$0
Ryan Ross \$23/hour	2H		\$50
Camila Russell \$20/hour	8H		\$160

Name of Employee: Brian Dallas
Address: 567 Elm Street, Apt 3B, Riverfront, New Hampshire, 12345
Birthday: 19/MAR/2020 Cell-Phone: (555) 555-1234
Gender: Male E-mail Address: brian.dallas@example.com

From Mar 11, 2024 to Apr 11, 2024
Avg. Daily Hours: 10h Total Hours Worked: 10h
Pay Type: HOURS Rate: \$15/hr Total Wage: \$150/hr
Average Rating: ★★★★★

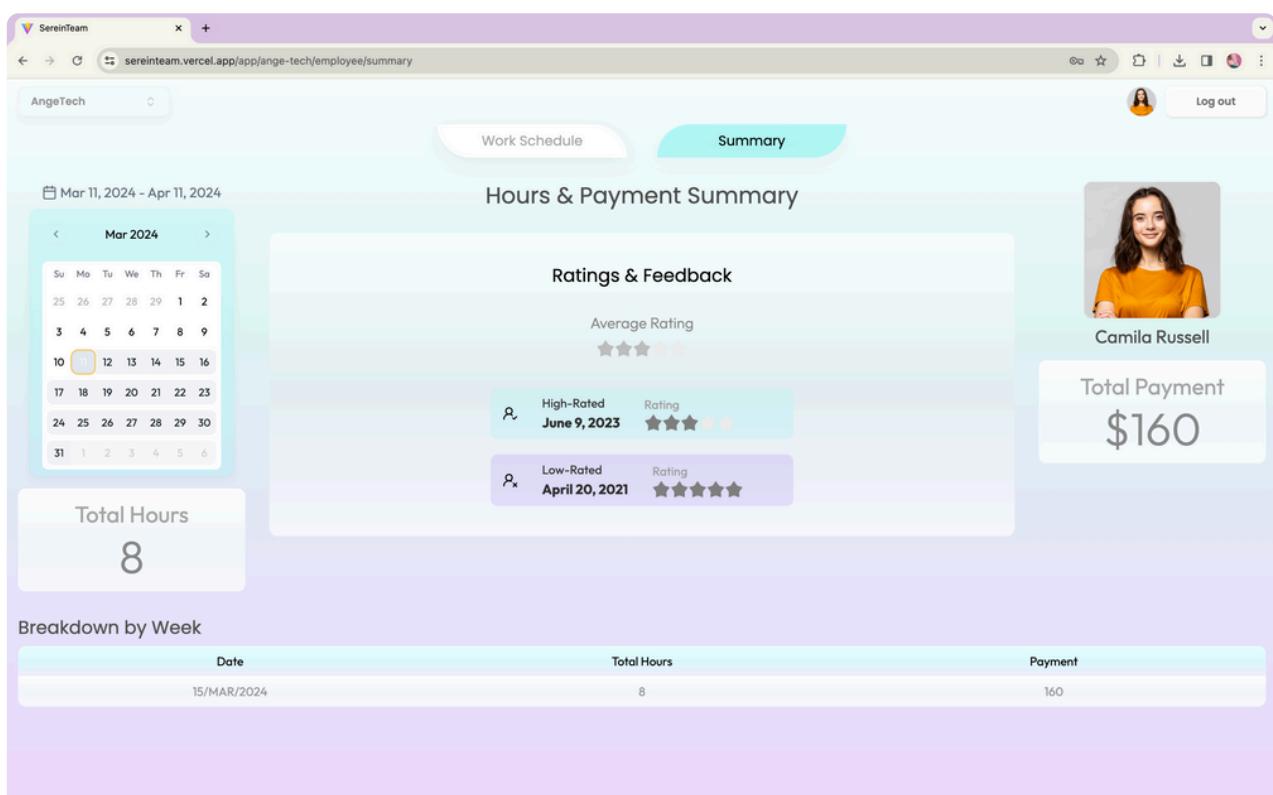
Employee Page



The screenshot shows the 'Reservations' section of the employee dashboard. It displays a weekly calendar for Camila Russell from March 11 to March 17, 2024. The calendar highlights various events:

- Monday:** Wellness Workshop (17:00 - 17:45) by Alexis J.
- Wednesday:** Trendsetter's Fashion Showcase (18:00 - 18:45) by Alexis J.
- Friday:** Virtual Coffee Chat (12:30 - 14:00) by Alexis J.
- Saturday:** Tech Innovation Seminar (15:00 - 16:05) by Alexis J.
- Sunday:** Fashion Design Brainstorm (19:00 - 19:45) by Alexis J.

A detailed view of the Fashion Design Brainstorm reservation is shown on the right, including the date (15 Mar), time (19:00 - 19:45), price (\$25), and a brief description: "Creative session to brainstorm and sketch out innovative concepts for our upcoming fashion line. Let". It also shows a rating of 4 stars and a 'Leave Feedback' button.



The screenshot shows the 'Summary' section of the employee dashboard. It includes the following components:

- Calendar:** A monthly calendar for March 2024 showing the days from 25 to 31. The 10th is highlighted.
- Total Hours:** A summary box showing 8 total hours.
- Ratings & Feedback:** A section showing average rating (3.5 stars) and two specific reviews:
 - High-Rated:** June 9, 2023, Rating 4 stars
 - Low-Rated:** April 20, 2021, Rating 5 stars
- Profile:** A photo of Camila Russell and her name.
- Total Payment:** A summary box showing \$160.
- Breakdown by Week:** A table showing the breakdown of hours and payment by week.

Date	Total Hours	Payment
15/MAR/2024	8	\$160

Client Page

The screenshot shows a client interface for managing reservations. At the top, a navigation bar includes 'File', 'Edit', 'View', 'History', 'Bookmarks', 'Profiles', 'Tab', 'Window', and 'Help'. A date range 'Mar 11 - Mar 17' and a calendar icon are visible. On the right, there's a user profile icon and a 'Log out' button.

The main area is titled 'Reservations' and shows a list for 'Alexis Jenkins'. A date selector shows 'Mar 11 - Mar 17' and '2024'. Below this, a weekly calendar grid displays events for Friday, March 15:

- Wellness Workshop** (17:00 - 17:45) by Camila R.
- Trendsetter's Fashion Showcase** (18:00 - 18:45) by Camila R.
- Virtual Coffee Chat** (12:30 - 14:00) by Camila R.
- Fashion Design Brainstorm** (15:00 - 16:00)
- Tech Innovation Seminar** (15:00 - 16:00)

A detailed view of the 'Trendsetter's Fashion Showcase' event is shown on the right, featuring:
Title: Trendsetter's Fashion Showcase
Description: Exclusive preview of the upcoming season's fashion trends. Join us for an evening of glamour and st...
Date: 15 Mar
Time: 18:00 - 18:45 Hour
Price: \$15
Rating: 5 stars (Camila R.)
Leave Feedback
Done

Profile Page

The screenshot shows a profile page for 'AngeTech'. The top navigation bar includes 'File', 'Edit', 'View', 'History', 'Bookmarks', 'Profiles', 'Tab', 'Window', and 'Help'. A date range 'Mar 11 - Mar 17' and a calendar icon are visible. On the right, there's a user profile icon and a 'Log out' button.

The main area shows a large circular profile picture of a woman with long brown hair, wearing an orange t-shirt. Below the picture, tabs for 'Profile' and 'Settings' are visible, with 'Settings' being the active tab.

A modal window titled 'Administrator' contains the following form fields:

- First Name: Camila
- Last Name: Russell
- Gender: Female
- Telephone: 997461020

A 'Save' button is located at the bottom right of the modal.

Final Evaluation and Analysis

In this final stage of the iterative design implementation, we will conduct a comprehensive evaluation of the progress and improvements achieved based on the feedback provided by different user groups. This thorough assessment will cover various aspects, ultimately including the growth in the SUS (System Usability Scale) scores, the optimization of custom feedback, and the enhancement of system accessibility.

First and foremost, we will conduct a new round of SUS application. We will compare the obtained scores with the initial results, enabling us to quantify the progress in terms of perceived usability. Our goal is to achieve a score higher than 85, indicating an excellent level of usability according to industry standards.

Also, we will thoroughly analyze the detailed comments and ratings provided by each user persona group in the user experience surveys. We will carefully examine how perceptions have evolved in key aspects such as navigability, alignment with workflows, visual aesthetics, and overall satisfaction. This review will help us identify areas that have significantly improved, as well as those that may require minor adjustments.

System Usability Scale (SUS)

Final Results

Participant	SUS score
User 1	73
User 2	84
User 3	91
User 4	76
User 5	83
User 6	67
User 7	84
User 8	78
User 9	94
User 10	74
User 11	85
User 12	100
Average Score	82.41

The average score of the results are 82.41/100, the high SUS score of over 80 points suggests that users are satisfied with their experience due to user-centered design, efficient workflow, learnability, consistency, and effective feedback mechanisms. This achievement reflects our commitment to providing great user experience and positions as an outstanding product in terms of ease of use and user satisfaction.

Final In-depth User Experience Survey

This open and honest feedback will be invaluable for the team, allowing a better understanding of the perceived strengths and weaknesses by each user group.

CONCERNING ACCESSIBILITY, DID YOU ENCOUNTER ANY BARRIERS OR DIFFICULTIES WHILE USING THE APPLICATION DUE TO YOUR [VISUAL/HEARING/MOTOR/COGNITIVE] DISABILITY? IF SO, PLEASE DESCRIBE THESE CHALLENGES IN DETAIL AND SUGGEST IMPROVEMENTS THAT COULD BE EFFECTIVELY IMPLEMENTED.

FROM YOUR PERSPECTIVE AS AN [ADMINISTRATOR/EMPLOYEE/CLIENT], HOW WELL DID THE APPLICATION'S FUNCTIONALITIES ALIGN WITH YOUR NEEDS AND USUAL WORKFLOWS? DELVE INTO ASPECTS THAT WORKED WELL AND THOSE THAT COULD BE IMPROVED, EXPLAINING HOW THESE IMPACTED YOUR EFFICIENCY AND PRODUCTIVITY.

THINKING ABOUT THE OVERALL USER EXPERIENCE, WHAT ASPECT OF THE APPLICATION WAS MOST SATISFYING, AND WHICH WAS THE MOST FRUSTRATING OR DISAPPOINTING? EXPLAIN THE REASONS BEHIND YOUR RESPONSES AND PROVIDE SPECIFIC SUGGESTIONS ON HOW WE COULD IMPROVE USER SATISFACTION.

DESCRIBE YOUR OVERALL EXPERIENCE WITH THE VISUAL AESTHETICS OF THE APPLICATION, INCLUDING DESIGN, COLORS, TYPOGRAPHY, AND THE USE OF ICONS AND GRAPHIC ELEMENTS. WHAT ASPECTS DID YOU FIND PLEASING AND APPEALING, AND WHICH COULD BE OPTIMIZED TO ENHANCE THE VISUAL EXPERIENCE?

Results - 1st Question

From your perspective as an [administrator/employee/client], how well did the application's functionalities align with your needs and usual workflows?

Delve into aspects that worked well and those that could be improved, explaining how these impacted your efficiency and productivity.

Group A

FROM AN ADMINISTRATOR'S PERSPECTIVE, HAVING AN ALL-IN-ONE SOLUTION IN THIS APPLICATION IS FANTASTIC. IT'S REMARKABLY EASY TO USE, AND I APPRECIATE THE COMPLETENESS OF THE PLATFORM. AS SOMEONE WITH EXPERIENCE IN HANDLING CLIENTS AND EMPLOYEES THROUGH VARIOUS PLATFORMS, THIS ONE STANDS OUT.

Group D

AS AN EMPLOYEE OR CLIENT, I FIND THE APPLICATION HIGHLY BENEFICIAL. THE INTERACTIVE AND STRAIGHTFORWARD DISPLAY OF MY SHIFTS IS A STANDOUT FEATURE. I APPRECIATE THE USER-FRIENDLY NATURE OF THIS APPLICATION.

Group B

AS A USER WITH LIMITED EXPERIENCE, I FOUND THE TOOLS PROVIDED TO BE REMARKABLY INTUITIVE. EVEN THOUGH I'M NOT WELL-VERSED IN SUCH RESOURCES, THE APPLICATION MADE IT EASY FOR ME TO NAVIGATE. I AM GENUINELY PLEASED WITH IT AND WOULD LOVE TO INCORPORATE IT INTO MY WORK.

Group E

WHILE I WOULD HAVE LIKED A MOBILE VERSION, I UNDERSTAND THE CONSTRAINTS, AND I CAN STILL ENJOY THE APPLICATION ON MY PC. IT STRIKES ME AS AN INTUITIVE APP, AND I BELIEVE IT WOULD BE EXCELLENT FOR YOUNGER USERS.

Group C

HAVING EXPERIENCE WITH SUCH APPLICATIONS, I ENJOYED THE IMPLEMENTATION PROCESS. AS AN ADMINISTRATOR, I WOULD BE MORE THAN WILLING TO UTILIZE AN APP LIKE THIS.

Group F

I DON'T TOLERATE DELAYS OR LAGS, AND THIS ALL-IN-ONE PLATFORM IS IMPRESSIVE IN ITS SPEED. NOW, I CAN EFFICIENTLY CREATE SHIFTS, ASSIGN EMPLOYEES AND CLIENTS WITHOUT MUCH HASSLE. IT'S TRULY IMPRESSIVE.

Results - 2nd Question

Describe your overall experience with the visual aesthetics of the application, including design, colors, typography, and the use of icons and graphic elements. What aspects did you find pleasing and appealing, and which could be optimized to enhance the visual experience?

Group A

THE COLORS ARE SERENE, AND AS I PROGRESSED THROUGH THE PROCESS, I LEARNED TO APPRECIATE THEM. I DEFINITELY PREFER THESE COLORS NOW. THE SPACING, FONTS, EVERYTHING IS BETTER. I REALLY LIKE HOW IT TURNED OUT, AND NOW IT FEELS LESS INVASIVE WITH THE ADJUSTED SIZES.

Group D

THE ICONS AND BUTTONS ARE INTUITIVE, AND I GENERALLY LIKED IT. THE COLORS ARE CALMING, ALTHOUGH I WOULD HAVE PREFERRED SOMETHING LESS COLORFUL. NONETHELESS, IT'S QUITE GOOD.

Group B

THIS IS A GREAT CHOICE FOR SOMETHING THAT CAN BE USED BY A DIVERSE AGE GROUP. HOWEVER, I WOULD LIKE MORE CUSTOMIZATION OPTIONS BASED ON THE USER'S PREFERENCES. NEVERTHELESS, I LIKE IT.

Group E

WHILE I STILL PREFER A MONOCHROMATIC THEME, I WOULDN'T MIND USING AN APP WITH THESE COLORS. THEY DON'T BOTHER ME, THE FONTS ARE ESSENTIAL AND SEEM WELL-ORGANIZED. ADDITIONALLY, THE GRAPHIC ELEMENTS ARE QUITE SMOOTH, AND THE ANIMATIONS ARE WELL-EXECUTED.

Group C

I ENJOYED THE AESTHETICS, THE ORGANIZATION, AND THE ICONS, ALTHOUGH I STILL FIND IT A BIT UNINTUITIVE.

Group F

THE ORGANIZATION IS GOOD, AND WHILE THE FONT SIZES AREN'T QUITE RIGHT FOR THE EMPLOYEE SUMMARY PAGE, I LIKED EVERYTHING ELSE.

Results - 3rd Question

Concerning accessibility, did you encounter any barriers or difficulties while using the application due to your [visual/hearing/motor/cognitive] disability?

If so, please describe these challenges in detail and suggest improvements that could be effectively implemented.

Group A

THE ACCESSIBILITY IS GENERALLY GOOD, ESPECIALLY WITH THE APPROPRIATELY SIZED FONTS. HOWEVER, A DARK MODE OPTION WOULD HAVE BEEN APPRECIATED FOR REDUCED EYE STRAIN DURING PROLONGED USAGE. ADDITIONALLY, HAVING A MOBILE VERSION WOULD ENHANCE ACCESSIBILITY ON THE GO.

Group D

A MOBILE VERSION WOULD ENHANCE ACCESSIBILITY FOR INDIVIDUALS VALUING STREAMLINED AND EFFICIENT TOOLS IN THEIR DAILY ACTIVITIES.

Group B

FOR INDIVIDUALS INVOLVED IN TEMPORARY ROLES, A STREAMLINED MOBILE VERSION IS PARAMOUNT. IMPLEMENTING SIMPLIFIED ICONS WITH CLEAR VISUAL DISTINCTIONS AND ADDING A VOICE-GUIDED TUTORIAL FOR FIRST-TIME USERS COULD SIGNIFICANTLY ENHANCE ACCESSIBILITY AND USABILITY.

Group E

RECOGNIZING THE EMPHASIS ON TOOL EFFICIENCY, OFFERING CUSTOMIZABLE COLOR SCHEMES COULD ENHANCE THE VISUAL EXPERIENCE BASED ON INDIVIDUAL PREFERENCES. MOREOVER, INTRODUCING A GUIDED TOUR OR TOOLTIPS FOR NEW FEATURES MIGHT AID USERS WHO HIGHLY PRIORITIZE TRANSPARENT AND EMPATHETIC TOOL USAGE.

Group C

OR THOSE VALUING TIME EFFICIENCY, INTEGRATING KEYBOARD SHORTCUTS FOR COMMON ACTIONS CAN PROVIDE AN ALTERNATIVE AND QUICKER MEANS OF NAVIGATION. FURTHERMORE, ENSURING A RESPONSIVE DESIGN FOR A SEAMLESS EXPERIENCE ACROSS VARIOUS DEVICES, INCLUDING MOBILE, WOULD BE ADVANTAGEOUS.

Group F

EXPANDING ACCESSIBILITY TO MOBILE DEVICES IS CRUCIAL FOR USERS CONSTANTLY ON THE MOVE. CONSIDERING TACTILE FEEDBACK OR VIBRATION ALERTS FOR CRUCIAL ACTIONS ON THE MOBILE VERSION COULD ADD AN EXTRA LAYER OF INTERACTION, ESPECIALLY FOR USERS MANAGING SCHEDULES EFFICIENTLY.

Results - 4th Question

Thinking about the overall user experience, what aspect of the application was most satisfying, and which was the most frustrating or disappointing? Explain the reasons behind your responses and provide specific suggestions on how we could improve user satisfaction.

Group A

THIS USER GROUP HIGHLY VALUED THE CENTRALIZED MANAGEMENT OF TASKS AND TEAM-RELATED INFORMATION. THE SEAMLESS INTEGRATION OF EMPLOYEE DETAILS, SHIFTS, AND CLIENT INFORMATION INTO ONE COHESIVE PLATFORM SIGNIFICANTLY STREAMLINED TEAM MANAGEMENT RESPONSIBILITIES. TO ENHANCE SATISFACTION, REAL-TIME SYNCHRONIZATION OF UPDATES ACROSS ALL SECTIONS COULD FURTHER BOOST THEIR EXPERIENCE.

Group D

THIS USER GROUP, VALUING TIME EFFICIENCY, PRAISED THE INTEGRATION OF VARIOUS FUNCTIONALITIES INTO A UNIFIED SYSTEM. THE APPLICATION'S ABILITY TO STREAMLINE TASKS ALIGNED PERFECTLY WITH THEIR PREFERENCE FOR STRAIGHTFORWARD INTERACTIONS. TO FURTHER ENHANCE USER SATISFACTION, PROVIDING CUSTOMIZABLE KEYBOARD SHORTCUTS FOR COMMON ACTIONS COULD ADD AN EXTRA LAYER OF EFFICIENCY FOR USERS IN THIS GROUP.

Group B

USERS SEEKING USER-FRIENDLY DESIGN WERE PLEASED WITH THE AESTHETICALLY PLEASING VISUALS AND STRAIGHTFORWARD FUNCTIONALITY. THE EMPHASIS ON SIMPLICITY IN HANDLING TEMPORARY ROLES AND TEAMS RESONATED POSITIVELY.

Group E

THIS USER GROUP, MANAGING SCHEDULES ON-THE-GO, COMMENDED THE APPLICATION'S ADAPTABILITY TO MOBILE DEVICES. THE SMOOTH EXPERIENCE IN NAVIGATING TASKS AND APPOINTMENTS ON A SMALLER SCREEN GREATLY CONTRIBUTED TO THEIR OVERALL SATISFACTION. TO FURTHER ENHANCE THEIR EXPERIENCE, ENSURING THAT ALL FEATURES ARE OPTIMIZED FOR MOBILE USE, INCLUDING A RESPONSIVE DESIGN, WOULD BE KEY.

Group C

USERS WITH LIMITED SaaS EXPERIENCE APPRECIATED THE USER-FRIENDLY INTERFACE THAT FACILITATED SMOOTH NAVIGATION. THE SIMPLICITY IN ADDING CLIENTS AND EMPLOYEES WAS A NOTABLE POSITIVE POINT. TO ENHANCE USER SATISFACTION, INCORPORATING INTERACTIVE TUTORIALS OR TOOLTIPS DIRECTLY WITHIN THE APPLICATION COULD GUIDE USERS THROUGH MORE ADVANCED FEATURES AND FUNCTIONALITIES.

Group F

USERS VALUING EFFICIENCY AND TRANSPARENCY FOUND THE TOOL SIMPLIFICATION HIGHLY SATISFYING. THE EMPHASIS ON EMPATHY AND USER-CENTRIC DESIGN POSITIVELY IMPACTED THEIR EXPERIENCE. TO MAXIMIZE SATISFACTION, INTRODUCING PERSONALIZED DASHBOARDS OR CUSTOMIZABLE WIDGETS COULD EMPOWER USERS TO TAILOR THE INTERFACE TO THEIR SPECIFIC DAILY TASKS, ENHANCING BOTH EFFICIENCY AND TRANSPARENCY.

Heuristic Evaluation

For summative user evaluation 2, we conducted an in-depth interview with two partner-owners of an educational learning center that offers tutoring classes to students. Their business has 2 branches, 30 full time and part time employees and serving over 700 clients.

The first part of the interview was about the usability of the application. Questions are built around the 10 principles for User Interface Design[32]. The second part was about the comments and suggestions on functionality.

Below are the summary of the Heuristic Evaluation from interview.

Visibility of System Status

"The system should always keep users informed about what is going on, through appropriate feedback within a reasonable time."

Heuristic Compliance: YES

- Buttons change color and cursor changes shapes when there is something to interact with. The system loaded fast and there is a spinning logo while loading

User Control and Freedom

"Users often choose system functions by mistake and will need a clearly marked 'emergency exit' to leave the unwanted state without having to go through an extended dialogue. Support undo and redo."

Heuristic Compliance: YES

- In most windows, there are a cancel button or a cross on the top.

Consistency and Standards

"Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions."

Heuristic Compliance: YES

- The terminology in the application is mostly straight forward.

Heuristic Compliance: NO

- I misunderstood the word "fee" at the beginning. It could mean fee to spend or fee to collect.

Recognition Rather Than Recall

"Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate."

Heuristic Compliance: YES

- Everything regarding to the task is shown on the screen at that moment

Flexibility and Efficiency of Use

"Accelerators — unseen by the novice user — may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions."

Heuristic Compliance: NO

- The application does not allow customization of actions

Aesthetic and Minimalist Design

"Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility."

Heuristic Compliance: YES

- It is a very clean design

Help and Documentation

"The application provide documentation to help users understand how to complete their tasks."

Heuristic Compliance: YES

- It does provide tutorial at the home page. And the system is easy to use

Help Users Recognize, Diagnose, and Recover from Errors

"Error messages should be expressed in plain language"

Heuristic Compliance: YES

- It prompt me for entering the wrong password with plain language

Match between System and the Real World

"The system should speak the users' language, with words, phrases, and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order."

Heuristic Compliance: YES

- Buttons are popped like a real button in the real world

In addition to the above questions, the interviewees also pointed out that they think this is an interesting application that had the potential to increase productivity of their business. There are three additional functions they would like to see in our future updates of the product.

- Options for different jobs for the same employee:

A employee might have different roles in a company, like we are paying different salary to an employee when he teaches different classes.

- Fast navigation mechanism on dates

- Options to add new branches or sort item by branches

The application is not perfectly suitable for our company as we have a few branches. We managed to try it out in one of our branches, but it would be troublesome if we need to make accounts for each branch.

They also suggest that the login page of clients should be separated as letting them see the login portal of employees and admin is weird.

User Evaluation Conclusion

From the results of the 3 user evaluations, we can conclude that users are mostly satisfied with our final product.

Design & System Development

01

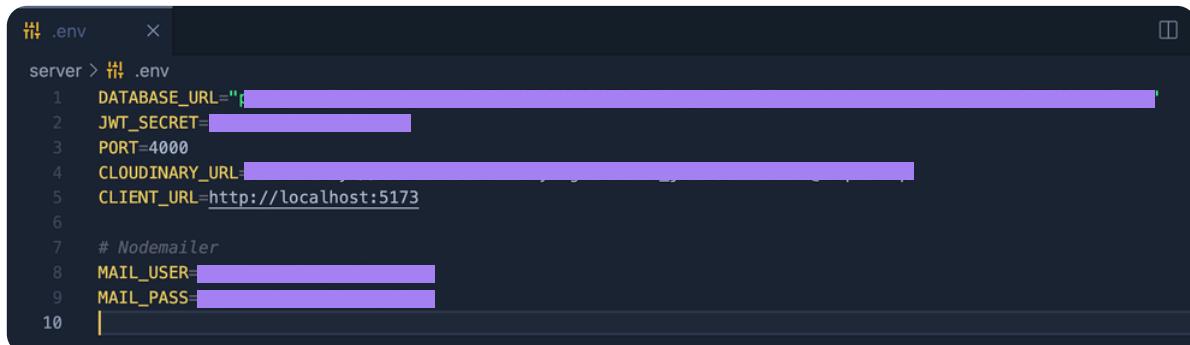
Backend

Setting up the Node.js environment using pnpm

The decision to use pnpm (Package Node Package Manager) as the package manager instead of npm was made due to its numerous advantages. pnpm offers superior performance by leveraging package caching, significantly reducing both installation time and disk space usage. Additionally, pnpm ensures consistent and reproducible package installations, avoiding version conflicts and issues. This choice facilitated a more efficient and reliable development process.

Using pnpm, the following crucial dependencies were installed for the backend of the project: Apollo Server, Prisma, Cloudinary, CORS (Cross-Origin Resource Sharing (a security mechanism allowing controlled access to resources from different origins, essential for communication between the frontend and backend)), Express.js, JSON Web Token (JWT) and Nodemailer (a node.js module allowing the sending of emails from JavaScript applications).

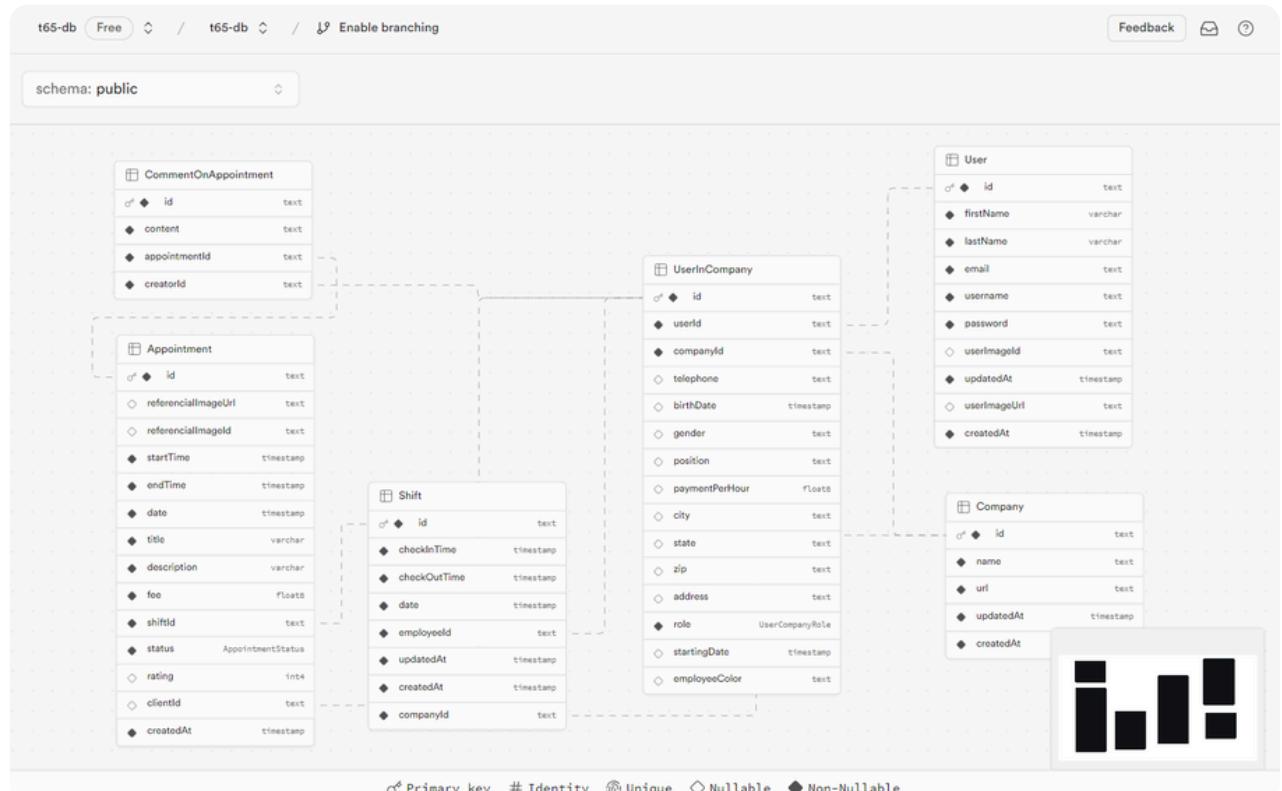
Relevant environment variables were established to ensure the security and proper configuration of the development and production environments. These variables included database access credentials, API keys, security tokens, and other sensitive data. Separating these configurations into environment variables allows for easy management and maintains the confidentiality of sensitive information.



```
# .env
server > # .env
1 DATABASE_URL=""
2 JWT_SECRET=""
3 PORT=4000
4 CLOUDINARY_URL=""
5 CLIENT_URL=http://localhost:5173
6
7 # Nodemailer
8 MAIL_USER=""
9 MAIL_PASS=""
```

Prisma

Using Prisma, a secure connection to the chosen relational database for the project was configured and established. Prisma simplifies database interaction by providing a query abstraction layer and an object-based API. This allows for faster and more maintainable development while ensuring data integrity and consistency. The schema created using Prisma to define data models and relationships is presented below:



GraphQL Schema

Following the creation of the Prisma schema, the GraphQL schema was defined, specifying the corresponding types, queries, and mutations. They are as follows:

Queries

<code>Company_GetClientCompany : Company!</code>	Get the appointments of a client. (client) <code>companyUrl String!</code>
<code>Company_GetEmployeeCompany : Company!</code>	Get the shifts and appointments of an employee. (employee) <code>companyUrl String!</code>
<code>Company_GetPayroll : [PayrollEmployee!]!</code>	Get the payroll. (admin) <code>companyId String!</code>
<code>Company_GetSummary : EmployeeSummary!</code>	Get the summary of hours worked, payments, etc. (employee) <code>companyUrl String!</code> <code>filter PayrollFilterInput!</code>
<code>GetAccount : User!</code>	Get the account of the current user. (all)
<code>GetCompany : Company!</code>	Get the info of a company. (all) <code>companyUrl String!</code>

Mutations

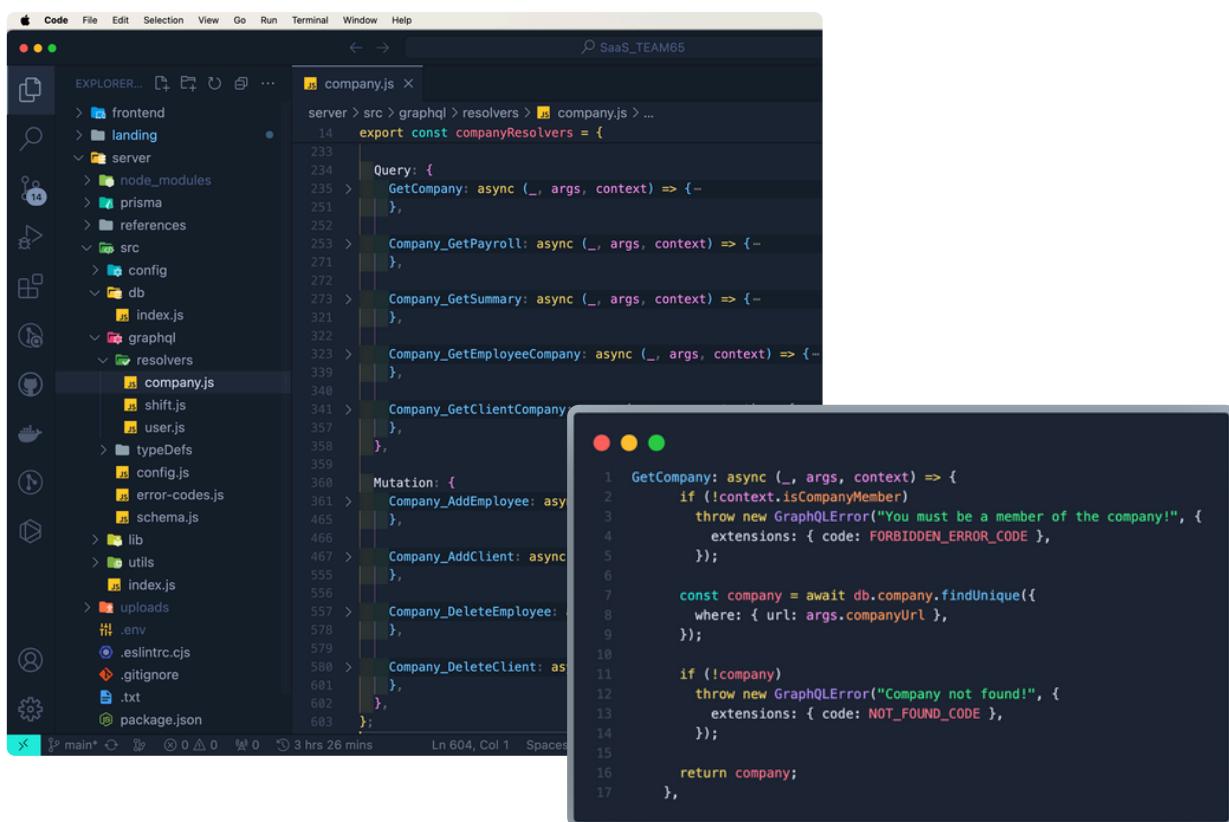
<code>Shift_UpdateShift : Shift!</code>	Update a shift. (admin) <code>shiftId String!</code> <code>shiftDto UpdateShiftDto!</code> <code>companyId String!</code>
<code>UpdateProfile : String!</code>	Update the profile of the current user. (all) <code>userDto UserUpdateDto!</code> <code>companyUrl String!</code>

Company_DeleteEmployee : UserInCompany!	Delete an employee of the company. (admin) companyId String! employeeId String!
LoginUser : String!	Login the user and return a JWT token. (all) userDto UserLoginDto!
RegisterUser : String!	Register the user and return a JWT token. (all) userDto UserRegisterDto!
Shift_CreateShift : Shift!	Create and assign a shift to an employee (admin) shiftDto ShiftDto! companyId String!
Shift_DeleteShift : Shift!	Delete a shift (admin) shiftId String! companyId String!
Appointment_CreateComment : CommentOnAppointment!	Create a comment in an appointment (employee, client) commentDto CommentDto!
Company_AddClient : UserInCompany!	Add a client to a company (admin) clientDto AddClientDto! companyId String!
Company_AddEmployee : UserInCompany!	Add employee to a company (admin) employeeDto AddEmployeeDto! companyId String!
Company_DeleteClient : UserInCompany!	Delete client from a company (admin) companyId String! clientId String!

This GraphQL schema acts as a contract between the server and the client, defining data types, allowed operations (queries and mutations), and the structure of expected responses. By using GraphQL, a flexible and efficient API is provided, allowing the client to request precisely the data it needs, reducing transfer overhead and improving performance.

Resolvers

After defining the GraphQL schema, the corresponding resolvers were implemented. Resolvers are functions responsible for handling business logic and interacting with data sources (such as the database) to resolve queries and mutations defined in the schema.



The image shows a code editor interface with two main panes. The left pane is the file explorer, showing a project structure with folders like 'frontend', 'landing', 'server', 'prisma', 'references', 'src' (containing 'config', 'db', 'graphql', 'resolvers'), and files like 'index.js', 'company.js', 'shift.js', 'user.js', 'typeDefs', 'config.js', 'error-codes.js', 'schema.js', 'lib', 'utils', 'index.js', 'uploads', '.env', '.eslintrc.cjs', '.gitignore', '.txt', and 'package.json'. The right pane is the code editor, currently displaying 'company.js'. A modal window is overlaid on the right side, showing the content of the 'company.js' file. The code in the modal is as follows:

```
1  GetCompany: async (_, args, context) => {
2    if (!context.isCompanyMember)
3      throw new GraphQLError("You must be a member of the company!", {
4        extensions: { code: FORBIDDEN_ERROR_CODE },
5      });
6
7    const company = await db.company.findUnique({
8      where: { url: args.companyUrl },
9    });
10
11    if (!company)
12      throw new GraphQLError("Company not found!", {
13        extensions: { code: NOT_FOUND_CODE },
14      });
15
16    return company;
17},
```

Role-based access control (RBAC)

A role-based access control (RBAC) system was implemented to ensure the proper separation of permissions and responsibilities among different user types within the application. This approach allows for the assignment of specific privileges based on the role each user plays within the system.

The primary role is that of an "administrator," who possesses the broadest permissions to manage and control various aspects of the application. Only users with this role have the ability to create shifts and accounts for clients and employees. During the account creation process, the system automatically and securely generates access credentials, including a random username and a temporary password.

To ensure password privacy and security, the system implements a hashing process using a unique salt function for each user. This approach prevents the storage of passwords in plain text, safeguarding them against potential security breaches and unauthorized access.

Once the access credentials are generated, the system sends an automated email to the provided email address during registration. This email contains the random username and temporary password, allowing the new user (whether a client or employee) to log in to the platform securely.

This differentiated workflow based on roles ensures that clients and employees do not have access to sensitive functionalities and data reserved exclusively for administrators. Similarly, administrators do not have access to personal or confidential information of clients and employees unless strictly necessary for the proper functioning of the application.

```
1 import slug from "slug";
2 import { init } from "@paralleldrive/cuid2";
3 import { db } from "../db/index.js";
4
5 export const generateRandomUsername = async (
6   companyId,
7   firstName,
8   lastName
9 ) => {
10   const company = await db.company.findUnique({ where: { id: companyId } });
11   if (!company) return;
12
13   const firstNameNoSpaces = firstName.replace(/\s/g, "");
14   const lastNameNoSpaces = lastName.replace(/\s/g, "");
15
16   const username =
17     slug(firstNameNoSpaces.slice(0, 3), "-") +
18     slug(lastNameNoSpaces.slice(0, 3), "-");
19
20   const usernameId = init({
21     length: 8,
22   });
23
24   return username + usernameId() + company.url;
25 };
26
```

```
1 const username = await generateRandomUsername(
2   args.companyId,
3   firstName,
4   lastName
5 );
```

```
1 export const generateRandomPassword = () => {
2   const allowedChars =
3     "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789";
4   let password = "";
5
6   for (let i = 0; i < 16; i++) {
7     const randomIndex = Math.floor(Math.random() * allowedChars.length);
8     password += allowedChars.charAt(randomIndex);
9   }
10
11   return password;
12};
```

```
1
2 const password = generateRandomPassword();
3 const hashedPassword = await bcrypt.hash(password, saltRounds);
```

02

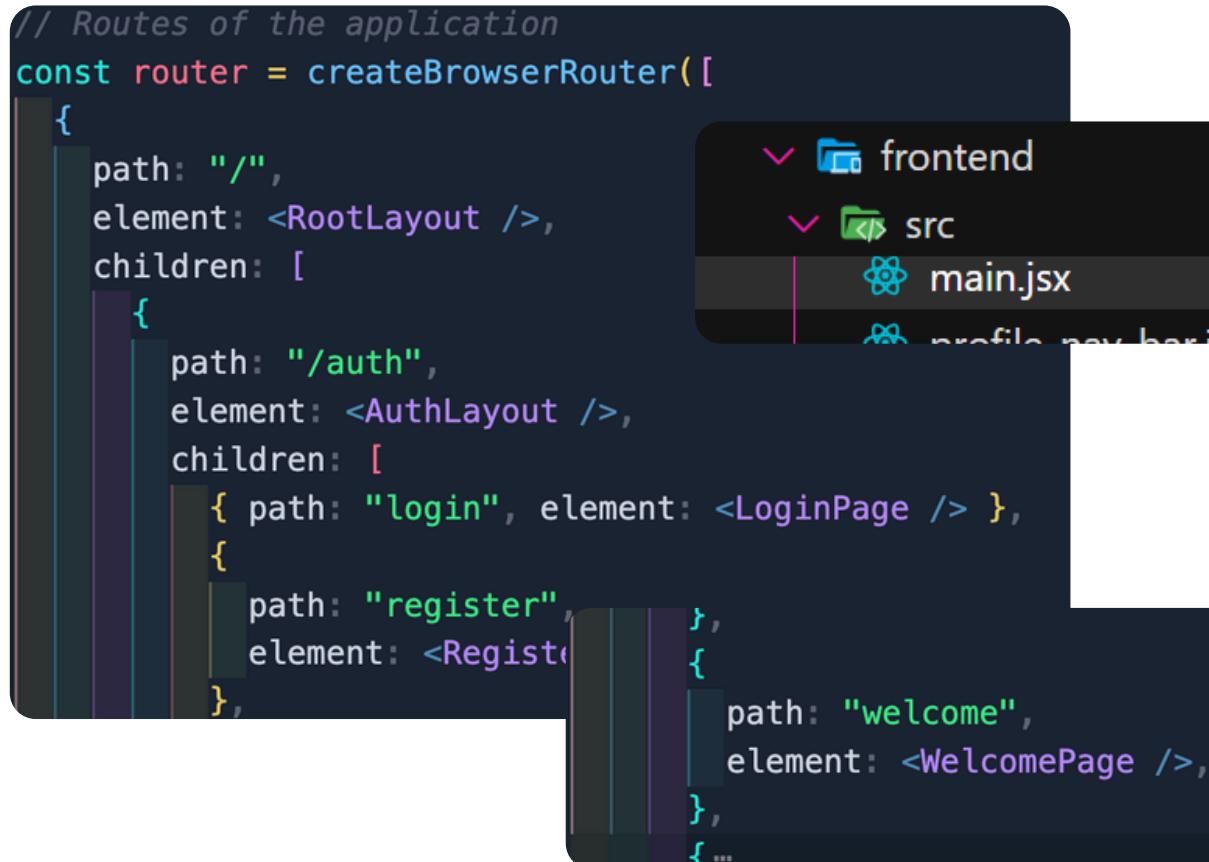
Frontend

The frontend development was initiated using React, a popular JavaScript framework for building user interfaces. Instead of using `create-react-app`, Vite was chosen, a modern build tool and development server offering superior performance and faster startup times compared to traditional alternatives. This choice was based on the increased speed and efficiency that Vite provides, particularly beneficial in large-scale projects and active development environments.

Subsequently, the necessary dependencies for the frontend were installed through the package manager. These include: React Router DOM, GraphQL Request, Tailwind CSS, TanStack Query y Zustand

Application Routes

Once the dependencies were configured, the application routes were defined using React Router DOM. This approach allowed for the consistent and declarative structuring of the application navigation, facilitating the development of a smooth user experience.

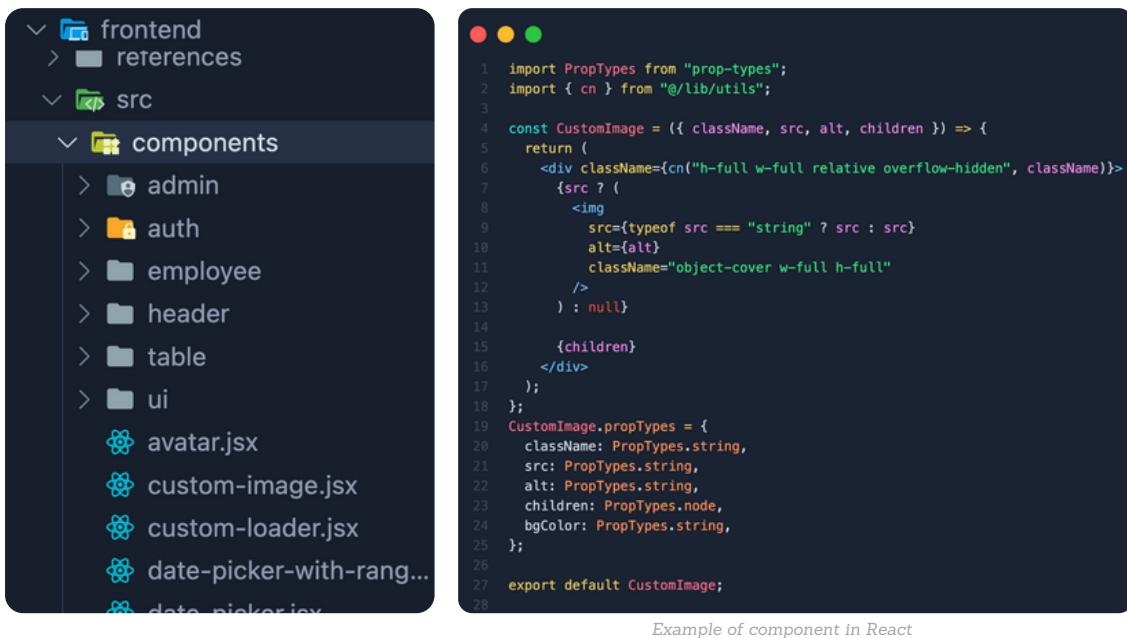


A screenshot of a code editor showing a file tree and a snippet of React Router code. The file tree on the right shows a project structure with a `frontend` folder containing a `src` folder and a `main.jsx` file. The `main.jsx` file contains the following code:

```
// Routes of the application
const router = createBrowserRouter([
  {
    path: "/",
    element: <RootLayout />,
    children: [
      {
        path: "/auth",
        element: <AuthLayout />,
        children: [
          { path: "login", element: <LoginPage /> },
          {
            path: "register",
            element: <RegisterPage />
          }
        ],
        {
          path: "welcome",
          element: <WelcomePage />
        },
        ...
      }
    ]
  }
])
```

Pages Implementation

Next, pages corresponding to each defined route were created. These pages were built using a combination of semantic HTML, Tailwind CSS styles, and React components. Additionally, pre-designed components from the Shadcn library were utilized – a collection of accessible components designed with a focus on usability and the user experience.



The image shows a file explorer on the left and a code editor on the right. The file explorer displays a directory structure under 'frontend': 'references', 'src' (which contains 'components' with subfolders 'admin', 'auth', 'employee', 'header', 'table', 'ui', and files 'avatar.jsx', 'custom-image.jsx', 'custom-loader.jsx', 'date-picker-with-rang...', and 'date-picker.jsx'). The code editor shows a snippet of a React component named 'CustomImage'. The component takes props for 'className', 'src', 'alt', and 'children'. It returns a div with a specific class name and an img element if 'src' is provided. The code also includes prop types for 'CustomImage' and an export statement.

```
1 import PropTypes from "prop-types";
2 import { cn } from "@/lib/utils";
3
4 const CustomImage = ({ className, src, alt, children }) => {
5   return (
6     <div className={cn("h-full w-full relative overflow-hidden", className)}>
7       {src ? (
8         <img
9           src={typeof src === "string" ? src : src}
10          alt={alt}
11          className="object-cover w-full h-full"
12        />
13      ) : null}
14
15      {children}
16    </div>
17  );
18 };
19 CustomImage.propTypes = {
20   className: PropTypes.string,
21   src: PropTypes.string,
22   alt: PropTypes.string,
23   children: PropTypes.node,
24   bgColor: PropTypes.string,
25 };
26
27 export default CustomImage;
```

Example of component in React

Role-Based Access Control (RBAC)

Next, a Role-Based Access Control (RBAC) system was implemented in the frontend of the application. This approach ensures that users are redirected to the appropriate views and functionalities based on their assigned role, enhancing security, privacy, and the overall user experience.

The RBAC system was integrated into the authentication and authorization flow of the application. Upon logging in, the backend provides information about the user's role (administrator, employee, or client) along with the access token. This information is securely stored in the frontend application state. Then, using React Router DOM, specific routes accessible only to users with authorized roles were defined. For instance, routes related to user management and system administration are only accessible to users with the administrator role. If a user attempts to access a route or functionality restricted to their role, the RBAC system intercepts this action and automatically redirects the user to an appropriate view.



Implementation of GraphQL Queries and Mutations with RBAC in the Frontend

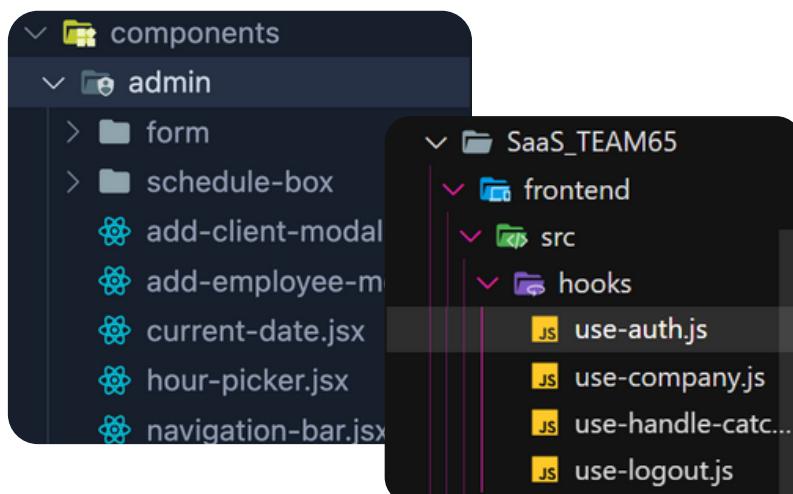
After implementing the Role-Based Access Control (RBAC) system, the next step involved integrating the queries and mutations defined in the GraphQL schema into the frontend of the application. This facilitated efficient and secure communication between the frontend and backend, enabling the retrieval and manipulation of necessary data.

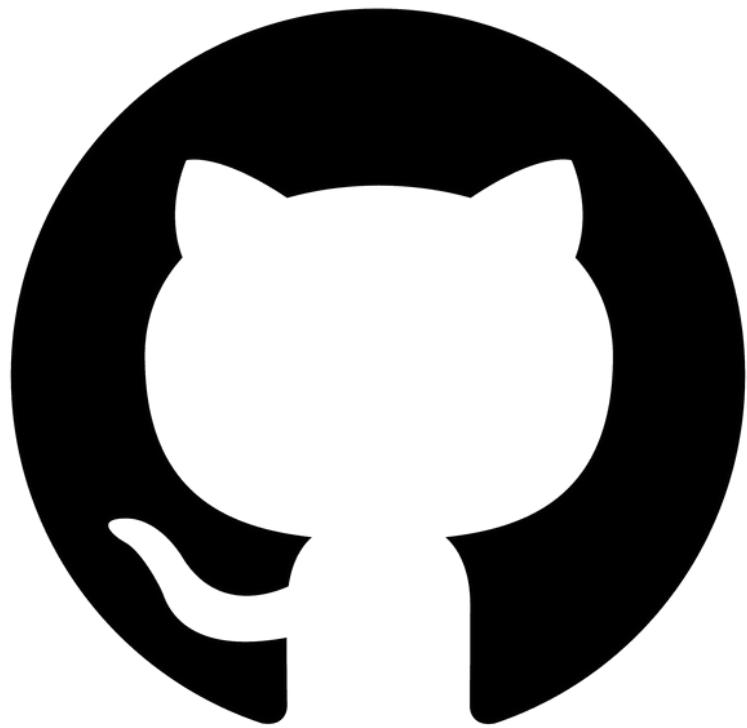
To interact with the GraphQL API from the frontend, custom React hooks were created. These hooks encapsulate the logic needed to send GraphQL queries and mutations, handle responses, and manage the application state appropriately. The use of custom hooks promotes code reuse, improves readability, and facilitates frontend maintenance.

A key focus was on creating specific hooks for each user type (administrator, employee, and client), allowing for a clear separation of responsibilities and better code organization. For instance, custom hooks were implemented to enable administrators to create, update, and delete users, manage schedules, and generate payroll reports. On the other hand, employees and clients had access to custom hooks allowing them to view their work schedules, request changes, and review payment details.

These queries and mutations were integrated into the corresponding React components, enabling a smooth and responsive user experience. For example, when an administrator creates a new user, the GraphQL mutation is sent to the backend, and the new user is immediately displayed in the user interface without the need to refresh the entire page.

In addition to custom hooks, the necessary React components were developed for each user type. These components represent different views and functionalities of the application, such as administration panels, scheduling calendars, profile forms, and data tables.





GitHub

https://github.com/angelaL8a/SaaS_TEAM65

<https://sereinteam.vercel.app> (on the web)

Evaluation

IN RELATION TO ORIGINAL PROPOSAL AND PLAN

Evaluation on Product

The final product meets most of the specifications stated in the proposal.

It managed to perform the basic functions:

1. Allow admins to view and edit information of employees and clients,
2. Allow admins to view and edit booking,
3. Generate payroll data,
4. Allow clients to view their booking schedule,
5. Allow employees to view their working schedule.

For the above functional requirements, our final product had successfully delivered values to user.

However there are still some of the functionality are not built:

1. Admins are not able to manually edit payroll data,
2. Employees are not able to update their available time slots,
3. Clients are not able to edit their bookings.

Also, the construction of mobile interface and the extra functionality of reviewing an employee was not able to implement.

The missing of functionality was mainly caused by insufficient manpower since two of the team members did not contribute according to plan. The rest of us tried the best we could to complete all the possible tasks, but we have to cut some functionality due to time constraints.

Despite of the missing functionality, the remaining parts of our final deliverable serves as a handy tool for human resources management.

Evaluation on Plan

The development of the project was a intense. From the gantt chart and notes in the planning section, we can see that our plans kept changing since week 13 due to insufficient manpower. Developing an application in less than 2 months was already challenging for a group of 4 students. With only two people, this was even more challenging.

We are glad that we had prepared enough buffering time for the contingency like this. Under the leadership and guidance of the more experienced team member, we managed to build a working product at the end. We are satisfied with the result as time used for each tasks were just around 1.5 times longer than planned, when there were 2 times of workload laying on 2 team members only.

Evaluating the changes of plans we made in the last two months about cutting functionalities or change of role, we believe that we have made the right choice. Forcefully act according to the original plan regardless of reality could lead to disastrous consequences of not finishing the project.

Conclusion

AND DISCUSSION OF FUTURE WORK

Concluding the project

in conclusion, the team has created a functional web application that could assist scheduling and payroll management for business.

The final deliverable achieved the goals set in the proposal to a certain extend and could bring positive impact on users. Business owner benefits from a lower cost to maintain a scheduling and payroll system. Admins benefits from reduced workload when dealing with bookings and calculating payroll. Employees and clients are also benefit from the possibility of viewing their schedule at ease.

The team has undertaken an rather ambitious project at the planning stage. Although there are tradeoffs in terms of functionality, we managed to deliver a functional web application at the end, under the challenge of insufficient manpower.

The timely respond to the problem and updates on the allocation of resources demonstrated the flexibility of the team. Also the assistance from the more experienced team member to the inexperienced team member also demonstrated high level of team work.

Discussion of future work

In the future, there are improvements that could be made in 3 aspects.

Improvements in functions of the application

There are some functions like the reviewing function, the tax calculation and the mobile interface was dropped due to the limitation of time. Also, user feedback from the final product had suggested some additional functions like multiple roles for an employee and multiple branches, to be developed. These are some ideas that could be added in future works

Improvements in planning

It was unfortunate that the team needs to work intensively to cover the loss of two manpower loss. In the future, we should leave more room for buffer in case it happens again. Also we could think of an incentive program to encourage participant of work.

Improvements in selection of tools

As discussed in the planning section, another cause of delay of work is the lack in experience of some developing tools, for example, React.js and GraphQL are rather unfamiliar for a student just passed level 4 courses last year. Although advance tools are powerful, the learning curve could be steep for green developer. In the future, carefully choosing tools that are suitable for the team's level could improve working efficiency

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