BILKENT UNIVERSITY

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CS 299

SUMMER TRAINING REPORT

Yasemin Akın

22101782

Performed at

Başarı Mobile A.Ş.

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1 Introduction

During my summer training, I got the opportunity to work in the Research and Development (R&D) department of Başarı Mobile. Başarı Mobile is a prestigious telecommunications firm that specializes in innovative developments in mobile communication and network services. Several different factors influenced my decision to intern at this organization. To begin with, I've always had a strong interest in telecommunications and mobile technologies, so it was a perfect fit for me. The industry's dynamic character and ongoing change aroused my curiosity, so I looked for an internship that would allow me to learn about these fascinating advances. Secondly, Başarı Mobile's outstanding reputation for technological competence and inventive solutions was a major attraction. I regarded this internship as a once-in-a-lifetime opportunity to learn from industry professionals and contribute to ground-breaking telecoms initiatives. Finally, the company's dedication to promoting a culture of continual learning and personal improvement was clear, and it completely aligned with my own goals. This internship has helped me improve both my technical abilities and my overall understanding of the telecoms business.

During my four-week internship at Başarı Mobile, I got my first taste of frontend web programming. The motive behind choosing this subject, which I will work on with my supervisor at the firm throughout my internship, was to equip myself with a technology that would be beneficial both in my projects while studying and in my future working life. My work began with a detailed study on frontend technologies, followed by hands-on experience developing frontends using the React.js and Vue.js frameworks. Despite some difficulties, I found enormous delight in problem-solving and mastering these frameworks. Reflecting on my experience, I'm tempted to continue learning about React and its various uses. This internship not only provided me with significant technical skills but also sparked my interest in frontend and general web development, influencing my future career options.

This report has been carefully organized to offer a complete description of my summer training experience at Başarı Mobile. Beginning with Section 2, "Company Information," we build the basis by providing key background about the firm, my department, the technology utilized, and information about my supervisor. This leads us to Section 3, "Work Done," in which we go over the various activities and projects I worked on during my internship. Before I conclude, in Section 4, "Performance and Outcomes," we assess my performance using criteria such as problem-solving, ethical conduct, decision-making, learning methodologies, knowledge application, and diversity awareness.

2 Company Information

2.1 About the company

Başarı Mobile Information Technology Products and Services Incorporation is Turkey's first firm dedicated to the Mobile Entertainment market. It began providing services under Başarı Holding in 1998 with the merger of the divisions of Information Technologies and Mobile Internet Services. Since its foundation, Başarı Mobile has been a pioneering force in the sector. Initially focusing on mobile infrastructure and content creation, the firm expanded its scope in 2003 to provide a wide variety of value-added services and innovative information technologies in mobile settings. Başarı Mobile is a significant participant in Turkey's mobile app industry, known for its skill in the creation and administration of Android and iOS applications. To achieve

this purpose, the firm views itself as a worldwide recognized leader in the mobile content industry, actively engaging with national and international partners.

Başarı Mobile not only provides billing and pricing solutions for operators, but it also makes important advances in the Internet of Things (IoT). Their dedication to technological innovation is seen in their deployment of approximately 30,000 IoT modules for monitoring and regulating energy assets in the Osmangazi Electricity Distribution and Yeşilırmak Electricity Distribution areas between 2015 and 2017. Başarı Mobile also regularly participates in The Scientific and Technological Research Council of Turkey (TUBITAK) and European Union programs. Their capacity to adapt to changing technologies is aided by a dynamic staff and cutting-edge technology infrastructure. Başarı Mobile provides unwavering client satisfaction and offers ready-to-use and customizable projects, as well as extensive after-sales service. Furthermore, the firm's organizational structure is based on Başarı Holding, and the company continues to create industry standards in Turkey's Mobile Entertainment sector [1, 9].

2.2 About your department

The R&D department of Başarı Mobile, where I did my summer training, is well-structured for innovation. Specialized teams work together on IoT, machine learning, and video encoding projects, encouraging efficient idea exchange and meaningful outcomes. These groups promote continual technical progress.

Several important projects have been completed by the R&D teams that demonstrate their dedication to innovation. Among these initiatives, "AGSEDIS" stands out, as they used machine learning and deep learning to extend their systems' monitoring and control capabilities. The creation of next-generation Internet of Things (IoT) Modem units, a candidate architecture for next-generation SCADA systems, and IoT-ready sensor infrastructure were all part of this project. They also went into the IoT space, especially in the measurement and monitoring of energy production and consumption, deploying approximately 30,000 IoT modules between 2015 and 2017. The TUBITAK-1501 program is supporting the "SPM2M" project, which intends to standardize machine-to-machine (M2M) connections, enabling centralized control and intelligent system advancements. Remote reading and monitoring of all devices and sockets, as well as remote control of device-specific functions like on/off switches and temperature settings, are all part of it. "ASYS" is working on creating an Automated Meter Reading System for the Turkish Electricity Distribution Corporation (TEDAŞ), which will allow for remote data reading, validation, storage, and display. Başarı Mobile offered not only the essential software and hardware but also training and operational support. They encoded TV and internet videos into formats suited for various cell phones under the "ACDC" project, allowing consumers to see videos on mobile devices. Finally, the "iCARE" and "H2B2VS" initiatives reflect ground-breaking attempts to integrate cloud computing with the television and home entertainment worlds, resulting in cost-effective content delivery options and improved user accessibility. These initiatives have received major attention in Europe and throughout the world, demonstrating Başarı Mobile's commitment to pushing technological limits and delivering creative solutions [2, 9].

2.3 About the hardware and software systems

At Başarı Mobile, our workstations are equipped with powerful processors such as the Intel Core i9 and AMD Ryzen 9, paired with NVIDIA RTX graphics cards. On the

software front, applications like Visual Studio Code and JetBrains IntelliJ IDEA are go-to choices for coding and development. For database management, Microsoft SQL Server and MongoDB are used. In the case of project management workflows, the company utilizes platforms such as JIRA and Trello. Başarı Mobile employs Norton Security and Cisco Firepower for security.

2.4 About your supervisor

My supervisor at Başarı Mobile during my summer training was Melih Sevsay, Software Architect Manager/Consultant in Başarı Mobile. He can be reached at melih.sevsay@basarimobile.com and 0 (542) 530 59 02. Melih Sevsay has an educational background, having graduated from Osmania University in 2012 with a degree in bachelor's degree in computer software engineering.

3 Work Done

3.1 About the Main Project

Throughout my internship, my primary objective was to contribute to a company project that came to the forefront in the final week of my internship period. The work I had been engaged in, the materials I had prepared, and the preliminary studies I had conducted all served as the building blocks necessary to equip me for this bigger task.

The core of my involvement within the company revolved around the enhancement of the frontend of the company's website. Our mission was to identify and address issues affecting the user interface. To accomplish this, I collaborated closely with a dedicated team of individuals specifically assigned to this task. Our collective efforts aimed not only to pinpoint existing problems but also to devise technically sound solutions to rectify them comprehensively. Furthermore, our responsibilities extended beyond troubleshooting. We were also tasked with identifying additional features that could be incorporated into the website to enhance its functionality. This involved a comprehensive assessment of user needs and expectations, followed by determining the feasibility of implementing these features within the website's framework.

One significant challenge I faced was my limited prior knowledge of front-end development. As a result, a substantial portion of my internship was dedicated to acquiring the requisite technical and conceptual knowledge. I achieved this by engaging in practical experiences, such as hands-on coding and website development, and conducting extensive research into front-end development principles and best practices.

3.2 Significance of the Work Done

During my summer internship, I embarked on an incredible journey of professional growth. The core of this experience lay in my aim to become proficient in a completely unfamiliar and technical field, specifically front-end development. Armed with no prior knowledge, I set out to acquire the skills required from the ground up. What made this journey truly significant was the hands-on nature of my learning process. I didn't just passively absorb knowledge; I actively engaged in practical exercises and tackled real-world problems head-on. This hands-on approach allowed me to not only acquire technical expertise but also to develop a valuable skill set that would remain useful in my future work. As I dealt with challenges and overcame

obstacles, I began to understand not only the subject matter itself but also the process of learning – how to initiate the learning process, how to progress through practice, and how to approach and resolve complex technical issues. This newfound ability to tackle and conquer technical problems is proof of my growth during the internship.

Moreover, the experience wasn't limited to just individual development. I had the opportunity to collaborate within a team environment, which added another layer of complexity to the learning process. Over a month, I improved my skills as both an individual and a team player, gaining a deep understanding of the nuances and advantages of both approaches. What truly magnified the significance of my work was its broader impact. I was part of a project aimed at enhancing the company's website's frontend, and this project had a profound effect on the user experience. We meticulously identified and rectified existing issues within the website's user interface and introduced new features designed to meet user needs. This aim not only vastly improved user satisfaction but also solidified the company's reputation for offering a seamless and user-friendly online experience.

My journey of acquiring technical and conceptual knowledge underscored the importance of personal and professional growth. I emerged from this experience not only with a toolkit of valuable skills but also with a deep-seated belief in the value of embracing new challenges and continuously expanding one's expertise. This mindset of perpetual learning and adaptability is essential in the modern job market, where the pace of change is fierce.

3.3 Motivation and Reasons Behind the Work Done

During my internship, my primary task was motivated by the reason to help improve the company's website by learning frontend development from scratch. So, why was this work motivated? Well, first and foremost, companies must enhance their website's user interface (UI) and solve any existing issues. A user-friendly and efficient UI is vital because it directly impacts how customers interact with a company online. When a website is easy to navigate and use, it not only keeps users happy but also can lead to increased engagement and sales for the company.

On a personal level, my motivation to learn frontend development tools was driven by several reasons. Firstly, it allowed me to contribute effectively to the company's efforts to improve its online presence. Secondly, it's an essential skill in today's digital age, making me more versatile and employable in the job market. Finally, it taught me the value of adaptability and the importance of continuously learning new skills, which is crucial in a world where technology evolves rapidly. So, my internship not only served as a reason to benefit me individually but also motivated the company to better connect with customers and succeed in the digital landscape.

3.4 Detailed Description of the Work Done

My journey as a frontend developer began with no prior knowledge in the field. My month-long internship aimed to revive and enhance the company's website frontend, a project that had been on hold until my arrival. To contribute effectively, I recognized the need for both conceptual and technical expertise. Therefore, I devoted the initial three weeks of my internship to intensive self-improvement in frontend development. Armed with newfound skills, I seamlessly transitioned into the final week, where I joined a dedicated team assigned to the website transformation project. This journey

of personal and professional growth unfolded against the backdrop of a project that had long been waiting for a fresh perspective. It not only enhanced my frontend development skills but also broadened my understanding of teamwork, project management, and problem-solving in a real-world context.

3.4.1 Week 1

Indeed, when delving into a technical subject or any unfamiliar area of expertise, it is essential to start with thorough research to build a strong conceptual foundation. This approach allows for a deeper understanding of technical concepts and lays the groundwork for mastering the subject matter effectively. Frontend web development was an entirely unfamiliar subject to me, and I embarked on this journey as a novice. Recognizing the importance of developing a strong and enduring grasp of the subject, I understood that extensive research was the initial step. To ensure that my newfound knowledge would stand the test of time and serve as a technical reference, my supervisor tasked me with the creation of a comprehensive report encompassing the core principles of universal frontend technologies during my first week. While conducting my research, I extensively reviewed and analyzed various sources, including blogs, video courses, research papers, and scientific articles.

One can locate the table of contents of the report that I have written in Appendix A. In this section, I aim to provide explanations regarding the content of each report section, elaborate on the key insights derived from these sections, and clear up how the information collected from them was applied during the subsequent stages of my internship.

The introduction serves as an initial overview of the report, providing insight into its purpose and relevance. Within this section, I have emphasized the significance of frontend technologies in today's business landscape, which lays the foundation for the report's motivation. As I have grasped, learning frontend technologies is essential for creating user-friendly and visually appealing web applications that engage and satisfy users and user satisfaction is important because at the end of the day what matters is if the software is used. Furthermore, I have briefly pointed to popular frontend trends, which I delve into more comprehensively later in the report. This introductory segment not only serves as a preliminary statement to the report but also signifies my initial attempt into frontend technologies. While writing this section, I gained a profound understanding of why I embarked on the journey to learn these technologies, as well as how, when, and where to apply them. This early grasp of the subject matter gave a sense of purpose to my work, making my job more meaningful. Furthermore, being aware of popular trends, even at a surface level, before my in-depth research, heightened my sensitivity to these popular concepts during subsequent phases of my investigation. This awareness helped me to approach the study of these trends with greater attentiveness, enriching the quality of my research.

In Section 2, I take an in-depth look at the key components that form the backbone of frontend web development. As I began my exploration, I encountered three main programming languages that are at the heart of this field. In this section, I thoroughly explore the histories and purposes behind these languages, how they are used, what sets them apart, and provide practical examples. I also highlight how these languages complement each other to create powerful web applications. In addition to the conceptual and technical information I read during my research, I realized the importance of seeing this information implemented in a piece of code, and that it was much more useful to better understand and remember it. I think this shows the importance of supporting learning with at least some concrete examples, while

everything we read, hear, and learn in computer science is already very abstract. In summary, the things I learned while completing this section are that HTML is a

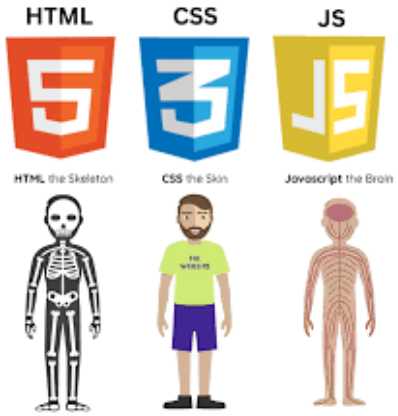

Figure 1: *The Building Blocks of Web Development: HTML, CSS, and JavaScript* [3]

markup language and acts as a skeleton that determines the structure of web pages, CSS is a stylesheet language that allows us to "decorate" this skeleton, and JavaScript brings "life" to the image that HTML and CSS offer us. I learned that there is a programming language that "gives". Figure 1 below, which I also included in my report, summarizes in the best way what I learned at the end of this section.
In the third section, I delve into one of the most prominent and frequently encountered subjects within the world of frontend technologies during the comprehensive research journey I have undertaken thus far: JavaScript frameworks and libraries. During my research, I encountered a persistent ambiguity surrounding the terms "library" and "framework." These terms were often used interchangeably, sometimes with distinct connotations, and at other times with identical meanings. To clarify this conceptual confusion and establish a definitive understanding of these crucial terms, I have compiled and presented a comprehensive comparison in Table 1 in the report. This table is a vital component of this section of my report because I talk a lot about these notions in this part.

A JavaScript library …	A JavaScript framework …
is a group of pre-written utilities and functions that offer developers a variety of features.	is a more complete set of tools that offers a full framework and architecture for creating web apps.
allows developers to pick and select the precise functions they require for their projects, so more focused and modular.	comes with built-in tools, templates, and components to handle routine operations like data binding, routing, and state management.
is unprejudiced, i.e., they don't impose their preferences on the application's overall architecture or structure.	is opportunistic and adheres to established patterns and standards, which can facilitate development but may include a learning curve.
gives developers additional flexibility, and they can quickly incorporate it into current projects.	determines how various components interact and fit together, and developers operate within its boundaries and organizational structure.

Table 1: Differences Between a Library and a Framework

I compiled a list of the 10 most recognized and commonly used JavaScript libraries and frameworks as part of my research. It's important to note that this selection wasn't based on an exhaustive data analysis, and I refrain from claiming that these are definitively the top 10 in popularity, as rankings can vary across different sources. Instead, my approach involved identifying the frameworks that repeatedly appeared in the sources I consulted and using that as a starting point. The following frameworks made the list: React.js, Angular, jQuery, Vue.js, Backbone.js, Ember.js, Semantic-UI, Svelte, Foundation, and Preact. In my report, I provided an overview of these 10 frameworks, highlighting the distinctive features that set them apart. Throughout this process, I encountered numerous technical concepts that were previously unfamiliar to me, prompting me to delve deeper into their meanings and implications. Additionally, I observed that many recently released frameworks share similar features, leading me to conclude that there is a universal unity among frontend developers regarding the ideal development environments they seek.

The crucial section of the report, undoubtedly, was the one in which I conducted a comprehensive comparison of the various frameworks. This segment held particular significance, as my supervisor's primary objective in assigning this report was to assess my ability to make informed decisions based on the knowledge acquired during the research. The core of the matter was determining the technology upon which I would embark for future work, and this comparative analysis played a central role in reaching that crucial decision. In forming the comparative analysis section, I drew considerable insights from two prominent scientific articles, which served as foundational references for my examination. Furthermore, I extended the discussion with valuable survey findings collected from reputable software forums known for their expansive communities, with Stack Overflow being a prominent example [4]. I've realized that when it comes to comparing frameworks, there are numerous factors at play, and it's virtually impossible to declare one framework as definitively superior to another. It's a nuanced process, where we must consider various variables. For instance, we may observe that as the community size of one framework grows larger, its performance might suffer, while another framework might be exceptionally fast but suffer from limited documentation.

I conducted a thorough comparison of several key criteria to assess the performance and suitability of the frameworks under scrutiny. These criteria encompassed a wide spectrum, including user satisfaction, rendering time, the time it takes for the first pixel to appear, the duration for a webpage to achieve full interactivity, memory allocation, startup time, peak response time, maturity level, the size and vitality of the community surrounding each framework, as well as the comprehensiveness of their respective documentation. The aggregation of these diverse metrics allowed for a comprehensive evaluation, acknowledging the multifaceted nature of the decision-making process when selecting a suitable framework for specific development endeavors. While it is not feasible to present the entirety of the analyses conducted in this report within the bounds of this document, I have provided some informative tables and graphs from the report below. These visual aids are a representation of the data I have either prepared or sourced from relevant references.

In the concluding section of my report, I dig into the evolving landscape of frontend development and emerging trends that have caught my attention during my research. Among these trends, there are a few cutting-edge technologies and terminologies that were entirely new to me, but which are rapidly gaining traction among the next generation of frontend developers. Naturally, I have included these innovative findings in my report. However, what particularly left a profound impression on me was not the new findings, it was a prediction I encountered while exploring the future of frontend development. This prediction analyzed a compelling approach, the

increasing likelihood that artificial intelligence could eventually replace frontend developers in the not-so-distant future. While similar estimates are made for various fields within software development, frontend development stands out due to its fundamental requirement for the creation of logic. In an industry where human expertise has been a cornerstone, this estimate raises questions about the potential evolution of the field and the extent to which human intervention will remain necessary [7]. Exploring these forward-looking ideas has provided me with invaluable perspectives as I consider my future specialization within the domain of software development. It underscores the ever-evolving nature of technology and the need for adaptability and continuous learning in the face of emerging possibilities.

Duration for...	angular-v13.0.0	react-v17.0.2	vue-v3.2.26
create rows	117.14.0 (1.14)	120.14.4 (1.17)	102.84.8 (1.00)
replace all rows	112.71.4 (1.11)	110.32.2 (1.08)	101.92.5 (1.00)
partial update	196.44.9 (1.00)	246.77.9 (1.27)	194.91.9 (1.00)
select row	71.41.9 (1.73)	111.91.6 (2.71)	41.30.7 (1.00)
swap rows	351.83.4 (6.58)	350.85.2 (6.56)	53.50.6 (1.00)
remove row	21.60.2 (1.00)	24.00.2 (1.11)	22.80.4 (1.06)
create many row	1,183,221.2 (1.09)	1,432,18.5 (1.32)	1,083,58.0 (1.00)
append rows to large table	239.91.3 (1.12)	263.94.2 (1.23)	214.61.9 (1.00)
clear rows	165.72.8 (2.30)	84.00.9 (1.17)	72.00.5 (1.00)
geometric mean	1.51	1.58	1.01

Table 2: Comparison of Angular, Vue and React Frameworks According to Duration for Elementary Operations [5]

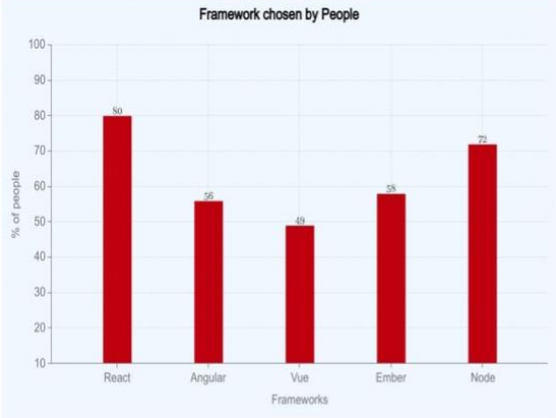

Figure 4: Comparison of Frameworks According to Preference Rates [6]

Framework	Followers	Questions	Unanswered	Resolved
Ember	4300	20944	2425 (12%)	12043 (58%)
Angular	26500	45709	8362 (18%)	21929 (48%)

Table 3: Comparison of Ember and Angular Framework According to Community Sizes [6]

Figure 2: Stack Overflow's 2022 Developer Survey About Web Frameworks and Technologies [4]

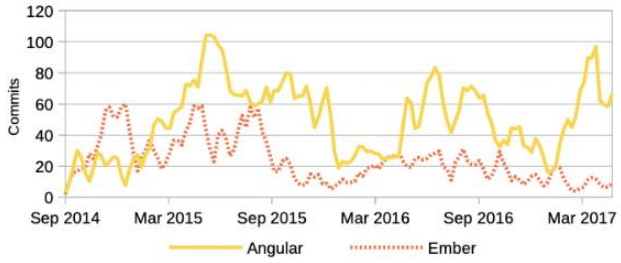

Figure 3: Comparison of Ember and Angular Framework According to Number of Commits [6]

3.4.2 Week 2

At the beginning of the second week, I submitted the comprehensive report I had compiled during the previous week. Following a discussion with my supervisor and taking his feedback into account, we formulated a plan for the next two weeks: I would concentrate on learning both React and Vue JavaScript (JS) frameworks. The motive behind studying both React and Vue, rather than opting for just one, was to put the comparative analysis I had conducted in my report to the test in real-world scenarios. By immersing myself in these two frameworks, my goal was to gain practical experience and witness how they performed when stacked up against each other. This hands-on approach would offer me valuable insights to complement the theoretical knowledge I had gained during my research.

During the second week of my internship, I encountered a transformative period filled with both challenges and valuable learning experiences. My supervisor shared an effective learning approach he had used to master frontend technologies. He suggested that I embark on a project to recreate an existing website from scratch. This hands-on task, he explained, would serve as a definite goal and a practical experience to deepen my understanding and skills in frontend development. By replicating the design and functionality of an existing website, I would gain real-world experience and valuable insights into the complexities of frontend web development. This approach would provide a clear objective: to make my project closely resemble the frontend design of the provided website. This clear goal would serve as motivation and a way to challenge myself, ultimately helping me improve my skills.

My task involved revamping the frontend of an existing artificial intelligence website named VenturusAI, using React.js. However, my prior knowledge of React was quite limited, and I only had a basic understanding of its concepts. To handle this unfamiliar area, I embarked on a journey of self-improvement and skill development. In the initial days of the week, I immersed myself in a series of online tutorials, diving headfirst into the world of React. As I gradually grasped the fundamental concepts of starting a React project, the first thing I did was to set up a React App using Create React App (CRA)[1], a crucial step in this learning process. During this phase, I made the deliberate choice to integrate Bootstrap[2] 5 as the CSS framework for this project. This decision was not arbitrary; it stemmed from my lack of prior experience in writing complex CSS from scratch. My primary objective was to learn React, and I wanted to avoid spending excessive time mastering pure CSS. Bootstrap 5 stood out as the optimal choice because my research indicated that it offered the lowest learning curve among CSS frameworks. Furthermore, the fifth version of Bootstrap introduced its component library and came with built-in JavaScript support, simplifying my development tasks significantly.

The first milestone after creating the project was setting up the navbar[3], a critical component that would lay the groundwork for the rest of the project. This task, though initially challenging, served as the launching block for the subsequent stages. In the days that followed, I continued the task of building the various components that would constitute the homepage of the website. In time, I gained confidence and began executing these tasks with increasing efficiency. My progress was evident, but an unforeseen challenge lay ahead. It was when I attempted to replicate the site's appearance by writing CSS in my React project that I encountered my first major roadblock. Despite my best efforts, achieving a pixel-perfect match proved hard. The

[1] A development server for running React apps.
[2] A CSS framework for building attractive and responsive websites quickly.
[3] A navbar is a website menu at the top for easy navigation.

original site had its own custom CSS file that was integral to its unique look and feel. My attempts to mimic it fell short. After a thorough investigation and a bit of digital detective work, it turned out that the site had been sculpted using TailwindCSS[4]. I decided to switch gears from Bootstrap to Tailwind. The transformation was remarkable, my site began to mirror the appearance of the original, down to the last detail. With the static components in place and the aesthetics aligned, the next challenge awaited. I was tasked with adding interactivity to certain components, starting with the implementation of an accordion menu (see the screenshot of this component in Appendix B). Here's the problem. My prior experience with JS was practically non-existent, and Tailwind didn't provide a dedicated JS file like Bootstrap. This presented a significant problem, as my goal was to create an accordion menu that seamlessly integrated with the overall design. I knew I had to find a solution. Two days were dedicated to researching and experimenting with different approaches. Initially, I attempted to implement my accordion writing pure JS, but the results were far from satisfactory since I could not write JS effectively at that moment. It was during this period of trial and error that I came across Flowbite, a component library tailored for compatibility with TailwindCSS. The integration of Flowbite into my project was a turning point. Armed with its accordion component template, I finally achieved the level of interactivity I had envisioned.

The experience of navigating through these difficulties allowed me to grasp the art of adapting and configuring diverse components within my project to meet specific requirements. It was a hands-on lesson in problem-solving and adaptability that would leave a lasting impression. However, this chapter of my internship adventure extended beyond a week. I found myself racing against the clock, surpassing my initial deadline. Despite my dedication and determination, one challenge remained unresolved, the implementation of a floating label component for the contact page of my site. While Tailwind and Flowbite had proven instrumental in achieving interactive elements for the accordion, the same strategies didn't yield the desired outcome for the floating label component. This problem remained unsolved as I had to shift my focus to the tasks of the third week.

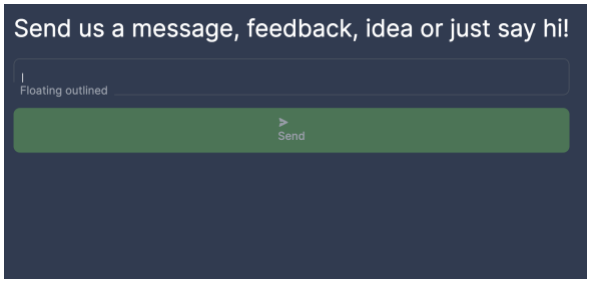

Figure 5: How my contact form looks like

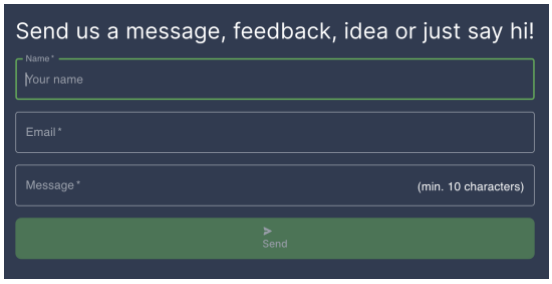

Figure 6: How the contact form should look like [8]

These experiences were nothing short of a rollercoaster ride of learning and discovery. Throughout this journey, I grappled with complex problems and emerged with innovative solutions. These challenges taught me adaptability, resilience, and problem-solving insight in a real-world context. One can see the development environment in the WebStorm Integrated Development Environment (IDE) for this React project and some screenshots from the resulting website in Appendix B.

[4] A CSS framework for building attractive and responsive websites quickly.

3.4.3 Week 3

During the third week of my internship, I was tasked with another challenge: redeveloping our project using the Vue.js framework. This week proved to be a blend of both familiar and entirely new experiences, as I continued to build upon the foundation of knowledge I had acquired in the previous weeks.

At the beginning of the week, I encountered a minor hiccup when transitioning from React's syntax to Vue's distinctive syntax. However, I had faced similar transitions before, having previously navigated the shift from Python to JavaScript in a previous project. Drawing from that experience, I quickly adapted and began exploring Vue's syntax.

One notable observation was the contrast in community support between React and Vue. React's extensive and well-established community provided me with an array of resources and comprehensive documentation during my earlier weeks of learning. In contrast, Vue, while rapidly gaining popularity, had a smaller but highly engaged community. This observation sparked my interest in community dynamics within the world of frontend development, leading me to dive into discussions and forums where Vue enthusiasts passionately exchanged ideas.

As I delved deeper into Vue, I stumbled upon a unique challenge. It seemed that Vue's syntax was very different than React's and required me to approach certain aspects of the project differently than I had in React. One big difference is that in Vue, you had to write components and pages, that is, general source codes, into framework-specific files with the ".vue" extension. Drawing upon my prior experiences, I embraced these differences and began implementing them accordingly. Some more research and trials allowed me to unlock Vue's full potential, resulting in efficient and elegant code. In this Vue project, I used TailwindCSS and Flowbite library again, benefiting from my experiences last week.

Amid these experiences, a familiar problem appeared once again, the floating label issue on the contact page. Although I had encountered this challenge in the second week with React, this time I approached it with a fresh perspective. With the help of my newfound knowledge of Vue's unique features, I embarked on an exploration of alternative solutions. This time, my determination and perseverance paid off as I successfully resolved the issue, further strengthening my problem-solving abilities. One can see the development environment in the WebStorm Integrated Development Environment (IDE) for this Vue project in Appendix C.

After the third week, I had established a solid foundation in both React and Vue. I felt prepared to actively engage in a project utilizing either of these frameworks. While I recognized that I still had much to learn and build upon my basic knowledge, I had reached a point where I could effectively comprehend others' communication and pinpoint where to seek guidance or clarification when faced with specific tasks or challenges.

3.4.4 Week 4

By the fourth week of my internship, I was well-prepared to join a team of experienced frontend developers in enhancing the company's website. Generally, they shared their ongoing challenges and expectations for potential solutions, then wanted me to do research on possible solutions to these challenges and present viable options to the team at daily meetings. Although I was a junior member of the team, I made contributions that were instrumental in pushing the project forward.

One contribution I made was related to optimizing website load times. Drawing upon my research and prior experiences, I proposed specific strategies for image optimization. These included implementing responsive image techniques like using the "srcset" attribute to serve different image sizes based on the user's device and leveraging modern image formats like WebP, which offers superior compression and quality. Additionally, I suggested lazy loading for images that were not immediately visible, ensuring that they load only when needed, thereby improving overall page load speed.

In addition to image optimization, I introduced code-splitting methods to enhance the website's performance. Code splitting involves breaking down the JavaScript codebase into smaller, more manageable chunks that are loaded on-demand. This approach reduces the initial load time for users, as they only download the code required for the current page or feature. I recommended utilizing tools like Webpack, a popular bundler, to implement code splitting effectively. By strategically dividing the codebase and loading modules asynchronously, we were able to significantly enhance the website's responsiveness and user experience.

Furthermore, I played a pivotal role in enhancing the user experience by addressing navigation challenges. Leveraging my knowledge of frontend development, I recommended user-friendly design modifications and provided practical solutions to make the website's navigation smoother and more intuitive. This involved refining menu structures, improving the placement of key elements and ensuring consistent user interactions across different sections of the site.

Another issue that I worked on during this period was actively contributing to the implementation of a responsive design framework, a crucial step in enhancing the website's compatibility across a diverse range of devices and screen sizes. Initially, I conducted a thorough analysis of the existing website's layout and components, paying close attention to its desktop version. This analysis provided valuable insights into the website's structure and how it translated to larger screens. Armed with this understanding, I began the process of adapting the site's design. First, I focused on restructuring the layout to ensure optimal placement and sizing of elements on smaller screens. This involved reconfiguring the navigation menu, adjusting the placement of images and text, and reorganizing content to maintain readability and visual appeal. Next, I delved into the intricacies of CSS media queries, a fundamental technique in responsive web design. These media queries allowed me to apply specific styles and layouts based on the user's device screen size. Through meticulous coding and testing, I crafted media queries that tailored the website's appearance to various breakpoints, ensuring that it looked and functioned flawlessly on smartphones and tablets. Throughout this process, I constantly tested the website on a variety of devices, including smartphones with different screen sizes.

In addition, I made recommendations to make the company's website more inclusive, suggesting the implementation of the following improvements: Firstly, I recommended adding descriptive alternative text (alt text) to each image. These alt texts provide information about the content of the images, making them accessible to visually impaired users who rely on screen readers to understand the content. Secondly, I proposed enhancements to the website's keyboard navigation. This involved ensuring that all interactive elements could be easily navigated and activated using only the keyboard. This improvement allows users who cannot use a mouse to navigate the site efficiently. Lastly, I suggested optimizing the website's compatibility with screen readers. This included making structural changes to the code to ensure that screen readers could interpret the content accurately. By

implementing these recommendations, we were able to create a more accessible and user-friendly website, catering to a broader range of users.

During this week, I also had the opportunity to collaborate with the team on implementing new features for the company's website. One of the ideas I proposed was the integration of a dynamic search functionality. Instead of personally implementing this feature, I worked closely with the team to conceptualize its design and functionality. To bring this idea to life, we began with a brainstorming session to outline the core objectives of the dynamic search feature. We identified that it should not only allow users to find information quickly but also provide real-time suggestions as they type in their queries. Drawing upon my knowledge of React, I shared insights into how we could achieve this functionality efficiently. We decided to utilize React's state management capabilities. By structuring the code and components effectively, we ensured that the search bar could communicate with the backend server in real time, fetching relevant search results as users typed. The next step was to consider the user interface aspect. We wanted the search bar to seamlessly integrate with the website's design, ensuring a cohesive and visually appealing experience. We explored various design options, considering factors such as color schemes, typography, and animation effects. Once the conceptual framework was in place, our development team took over to implement the feature, translating our ideas into functional code. Throughout this process, I remained actively engaged, providing feedback, conducting tests, and offering suggestions to refine the feature further. The result was a dynamic search functionality that significantly improved the user search experience on the website. Users could now effortlessly find the information they needed, thanks to real-time suggestions and a visually appealing interface. This collaborative effort demonstrated the power of teamwork and the value of exchanging ideas to enhance a project's functionality and user experience.

Overall, despite being in a junior role, I actively contributed to the team's success by providing valuable input, implementing improvements, and collaborating on the development of essential features. This week was a significant week in my journey as a frontend developer, and it reinforced my passion for making meaningful contributions to web development projects.

4 Performance and Outcomes

4.1 Solving Complex Engineering Problems

I encountered several complex engineering problems during my summer training in Başarı Mobile that required me to apply the knowledge and skills I had acquired during my computer engineering and science-related studies at Bilkent University. These challenges were primarily related to frontend web development and user interface enhancement, and they demanded a deep understanding of both technical concepts and user experience principles.

One significant complex problem I faced was the task of overhauling the user interface of the company's website. This task involved identifying and rectifying existing issues that negatively impacted user experience while simultaneously incorporating new features to enhance the website's functionality. Solving this problem was like solving a multifaceted engineering puzzle. To overcome this challenge effectively, I drew upon the foundations laid during my computer engineering courses at the university, as well as my mathematical and scientific skills, to address several key challenges.

One of the shortcomings of the website was the necessity to make the website accessible to a diverse user base, including individuals with disabilities. This effort involved implementing a range of accessibility features, such as providing alternative text for images and enhancing keyboard navigation. My university education provided me with a strong foundation in software engineering principles, usability, and accessibility standards. In addition, in line with my studies at Bilkent, I learned how to acquire information on the subject I lack information because of assignments and projects assigned where I am constantly forced to research to learn something new. I applied these principles I have gathered and followed industry guidelines to ensure that the website met accessibility standards, making it more inclusive and user-friendly.

Additionally, I proposed a dynamic search functionality for the website, which demanded a deep understanding of data structures and search algorithms that I learned during a course in Bilkent, CS202. My coursework in CS202, particularly in the realm of non-linear data structures and algorithms, provided me with the necessary skills to design an efficient search algorithm. This demonstrates the practical application of my academic knowledge.

My summer training also involved working extensively with 2 different JavaScript frameworks, React and Vue. Each framework presented its unique set of challenges, and it was crucial to adapt quickly and effectively. React's component-based architecture reminded me of object-oriented programming, which we covered in detail in the CS102 course at Bilkent, and in this way, it was much easier for me to understand this architecture. On the other hand, Vue's distinctive syntax required deep research and examination of the source codes of Vue projects available on GitHub. GitHub usage and practice by looking at the example implementations are also a legacy from my studies at Bilkent.

4.2 Recognizing Ethical and Professional Responsibilities

Various ethical and professional responsibilities in real-life engineering situations were available at my summer training office too. These experiences allowed me to develop a deeper understanding of how to navigate and address ethical and professional challenges within a professional work environment.

One ethical dilemma I encountered related to project deadlines and code quality. At the end of the second week, I was under pressure to meet my React project’s deadline. However, I recognized the ethical responsibility to deliver high-quality code. To balance these competing demands, I engaged in open communication with my team and supervisors. Together, we adjusted project timelines while upholding coding standards, demonstrating the importance of ethical decision-making in project management.

Adapting to evolving technologies was another professional responsibility I encountered. In a real-life project, the introduction of a new frontend principle to the company’s website called “accessibility” required me to quickly acquire the necessary skills. To meet this professional challenge, I invested time in self-learning, enrolled in relevant online courses, and wanted guidance from experienced colleagues.

Regarding work-related ethical issues, I observed how the company handled conflicts of interest. During my internship another team’s member had a personal connection with a potential client, raising concerns about impartiality. The company

addressed this ethical challenge transparently by assigning a different team to the client, ensuring fairness and ethical conduct in client relationships.

Throughout my internship, these experiences highlighted the importance of ethical conduct, professionalism, and effective decision-making in a professional work setting, contributing to a positive and ethical work environment.

4.3 Making Informed Judgments

Throughout my summer training, I found myself in various engineering scenarios that demanded thoughtful and well-informed decisions. In each of these instances, I undertook the responsibility of making choices while considering their potential repercussions within a broader spectrum, encompassing global, economic, environmental, and societal dimensions. Below, I present a selection of these decisions, shedding light on the factors I considered within each contextual framework:

Selection of Frontend Frameworks (React and Vue): One of the pivotal decisions I encountered during my internship revolved around the choice of frontend frameworks to master. This selection process was conducted with a comprehensive outlook, taking into consideration its potential ramifications on a global, economic, environmental, and societal scale. Opting to delve into both React and Vue offered substantial global advantages, given their widespread utilization on a global scale. From an economic perspective, this decision bolstered my skill set, thereby enhancing my employability and making a positive contribution to economic stability. While this choice may not have had a direct environmental impact, it equipped me with the capability to develop user-friendly web applications, potentially benefiting society by enhancing online experiences.

Utilization of TailwindCSS and Flowbite Integration: Another significant decision pertained to the incorporation of TailwindCSS and Flowbite into my projects. This decision was guided by their widespread recognition within the frontend development community, guaranteeing conformity with industry best practices on a global scale. Economically, the adoption of these tools proved advantageous by increasing productivity, potentially resulting in reduced development time and associated costs for organizations. Like the choice of frontend frameworks, the integration of TailwindCSS and Flowbite did not exert any direct environmental impact, as their primary function was streamlining development workflows. However, on a societal level, they played a crucial role in creating user-friendly websites, ultimately enhancing the online experiences of individuals and communities.

Implementation of Responsive Design: The strategic decision to incorporate a responsive design framework was aimed at ensuring global accessibility for the company’s website. This choice was made after careful consideration of how it would impact global, economic, and societal dimensions. It directly influenced the global reach of these websites, making them accessible to a broader audience regardless of their device or screen size. From an economic standpoint, the implementation of responsive design was beneficial as it allowed the websites to cater to a wider spectrum of users, potentially leading to increased user engagement and increased sales. While this decision did not have direct environmental consequences, it played a pivotal role in benefiting society by providing a seamless user experience for individuals using various devices.

Accessibility Enhancements: My commitment to enhancing website accessibility was driven by a profound consideration of its global, economic, environmental, and

societal implications. From a global perspective, these enhancements were designed to ensure that individuals with disabilities, regardless of their geographic location, could access and interact with websites seamlessly. From an economic standpoint, these improvements expanded the potential user base, thus opening doors to increased revenue and heightened customer engagement. Notably, these initiatives did not have a direct environmental footprint, as their implementation centered on code enhancements and design considerations rather than resource-intensive activities. Societally, however, the impact was substantial. I championed accessibility enhancements by suggesting and implementing several crucial improvements. By implementing these recommendations, our team achieved a more inclusive and user-friendly website, extending its reach to a broader and more diverse range of users. These accessibility enhancements not only fostered inclusivity and equality within society but also reflected a responsible and ethical approach to engineering, acknowledging the importance of making technology accessible to all.

Documentation of Coding Best Practices: The decision to document coding best practices was made to ensure code quality and consistency in the project. From a global perspective, this documentation could benefit developers worldwide by providing guidance and improving code quality across various projects. Economically, it could save time and resources for companies by establishing efficient coding standards. Although documentation doesn't directly impact the environment, it can indirectly contribute to more streamlined development processes. On a societal level, well-documented coding practices facilitate collaboration and knowledge sharing among developers, fostering a sense of community and expertise.

Introduction of Dynamic Search Functionality: The proposal to implement a dynamic search functionality emerged during my collaborative work with the development team on enhancing the company's website. The objective was to elevate the overall user experience on a global scale. Our brainstorming session outlined the core objectives of this feature, aiming to provide users with a fast and intuitive search experience, complete with real-time suggestions as they type their queries. While conceiving this functionality, I leveraged my proficiency in React to offer insights into an efficient implementation approach. Our decision to employ React's robust state management capabilities was key to achieving real-time interactions with the backend server, ensuring users received relevant search results without delay. The economic aspect of this decision was evident as it could potentially lead to increased user engagement and, subsequently, improved sales for the company. From an environmental perspective, the proposal held no direct impact, as its core function was centered around enhancing user interaction rather than influencing ecological factors. However, from a societal standpoint, the dynamic search feature contributed significantly to a more efficient and user-friendly online experience. This improvement directly benefited individuals and communities, aligning with our commitment to providing a seamless user journey on our website, regardless of their location or background.

4.4 Acquiring New Knowledge by Using Appropriate Learning Strategies

During my summer internship, my main goal was to acquire new knowledge and skills in the field of frontend web development. This effort required a multifaceted learning approach, primarily because I had limited prior experience in this technical domain. Here, I will elaborate on the new knowledge I needed to acquire the

strategies I employed to effectively gain this knowledge, and why these strategies were appropriate.

One of the core challenges I faced was the need to become proficient in React and Vue, two crucial JavaScript frameworks for frontend development. To overcome this, I adopted an immersive learning approach. I began by delving into online tutorials and actively engaging in hands-on coding. This approach involved watching video courses and replicating real projects to put theoretical knowledge into practice. This strategy proved highly effective as it provided a structured path to explore these frameworks from the ground up. Immersive learning allowed me to grasp not only the syntax but also the underlying concepts and best practices. Furthermore, it aligned perfectly with my practical project of rebuilding a website using these frameworks, reinforcing my learning through practical application.

Another key facet of my internship was conducting a comparative analysis of various JavaScript frameworks and libraries. This required me to understand the nuances and differences between these technologies. To achieve this, I conducted extensive research, delved into technical documentation, and referred to scientific articles. I meticulously compared frameworks based on various criteria such as user satisfaction, performance metrics, and community support. This strategy was highly appropriate as it allowed me to make an informed decision about which framework to use in my project. The comparative analysis provided a comprehensive understanding of the strengths and weaknesses of each framework, ensuring that I made the right choice for my specific task.

As I progressed in my internship, I encountered numerous challenges that demanded problem-solving skills and adaptability. One significant example was the floating label issue on the contact page of my project. To address these challenges, I engaged in extensive research, explored alternative solutions, and iterated on my approaches until I found effective resolutions. This strategy was crucial as it equipped me with essential problem-solving abilities and highlighted the importance of adaptability in software development. It was appropriate because it allowed me to explore different avenues when faced with roadblocks, ultimately leading to successful outcomes.

Additionally, my internship emphasized collaboration and effective communication within a team. I actively participated in daily meetings, contributed ideas, and collaborated closely with experienced developers. This strategy was invaluable as it exposed me to the dynamics of real-world teamwork and communication. Collaborating with senior developers allowed me to absorb their expertise and contribute meaningfully to the project.

Lastly, my learning approach emphasized the importance of continuous learning and adaptability in a rapidly evolving field. Throughout my internship, I remained curious, explored emerging trends in frontend development, and contemplated the future of the field. This strategy was vital as it instilled in me the mindset of lifelong learning. Given the ever-evolving nature of technology, professionals in this field must adapt and stay updated. My curiosity and exploration of emerging trends were appropriate as they prepared me for future challenges and advancements in frontend web development.

4.5 Applying New Knowledge as Needed

Throughout my summer internship, I applied the knowledge I gained in various ways, demonstrating the practical application of my newfound skills and expertise.

In the first week, my focus was on conducting extensive research on frontend technologies and creating a comprehensive report. This research laid the foundation for my understanding of the subject matter. I delved into the core principles of universal frontend technologies, learning about HTML, CSS, JavaScript, and known frameworks and libraries. This knowledge was applied not only in my report but also formed the basis for my practical work in the following weeks. For instance, the comparative analysis of JavaScript frameworks, as a part of the first week's report, also played a crucial role. When I had to decide on JS frameworks for my projects, I referred to this analysis to make an informed choice. This also demonstrated the real-world application of my research in making practical decisions.

During the second and third weeks, I embarked on the task of rebuilding the frontend of VenturusAI using React.js and Vue.js, respectively. These frameworks were entirely new to me, but my research and learning from the first week equipped me with a strong conceptual understanding. The second and third weeks of my internship were dedicated entirely to a continuous cycle of learning and practical application. As I embarked on projects involving technologies, I had limited prior experience with, every day was marked by extensive research, acquiring new knowledge, and the immediate application of that knowledge. I went through a lot of trial and error. For example, at first, I configured Bootstrap 5 as the CSS framework for my React project, then, due to the obstacles I encountered and in line with the new information I acquired, I updated the CSS framework I used to TailwindCSS. This is an example of the application of new knowledge acquired most simply.

A significant and practical application of my acquired knowledge was evident in my problem-solving endeavors. When confronted with challenges, such as the implementation of an accordion menu or a floating label component, I leaned heavily on my research skills and, notably, on my newfound knowledge of the Flowbite library. This library played a pivotal role in overcoming obstacles and achieving the desired interactivity in my projects, underlining the direct relevance and effectiveness of the new knowledge I had acquired.

In the fourth week, when I joined the team to enhance the company's website, I applied my knowledge by actively participating in daily meetings. I contributed ideas for optimizing website load times, improving navigation, and enhancing user experience by adding accessibility features and responsiveness to complement other screen sizes. My familiarity with responsive design principles, gained from my React and Vue projects, allowed me to contribute to making the website compatible with various devices. Furthermore, my understanding of accessibility features, which I researched in the fourth week, was put into practice as I added alternative text to images, improved keyboard navigation, and ensured screen reader compatibility. These actions were aimed at making the website more inclusive and user-friendly.

Finally, I leveraged my knowledge of React to propose and develop a dynamic search functionality that enriched the website's frontend. This demonstrated my ability to apply my technical skills to enhance the website's functionality.

4.6 Awareness About Diversity, Equity, and Inclusion

Throughout my summer training, I had the opportunity to gain a deeper awareness of the importance of diversity, equity, and inclusion (DEI) within the workplace. While my primary task was technical, the broader context of DEI played a significant role in shaping my internship experience.

In the context of my internship, diversity was evident in the composition of our project team. We came from various backgrounds, had different levels of experience, and brought unique perspectives to the table. This diversity was a source of strength for our team, as it led to a rich exchange of ideas and approaches. I realized that having a team with diverse skills and viewpoints was instrumental in addressing complex technical challenges.

Equity became especially clear in the way tasks and responsibilities were assigned within our team. Our supervisor ensured that each team member had access to opportunities for growth and learning. Regardless of members' prior knowledge or experience, we were all given equal chances to contribute and develop our skills.

Inclusion was perhaps the most certain aspect of DEI during my internship. Our team favored an environment where every team member's voice was heard and valued. It didn't matter if you were a junior member like me or a more experienced developer; your ideas were considered. This inclusive atmosphere encouraged open communication and made me feel like a valued member of the team from day one.

Moreover, my internship experience underscored the broader significance of DEI in the tech industry. The tech world has often faced criticism for its lack of diversity, and I realized that promoting DEI isn't just a moral imperative, it's a strategic advantage. Diverse and inclusive teams are more innovative and better equipped to tackle the ever-evolving challenges of technology.

As someone with limited prior experience in the industry, my internship was a valuable learning opportunity. I saw firsthand how embracing DEI principles can lead to better problem-solving, increased creativity, and a more harmonious work environment.

5 Conclusions

In conclusion, my summer internship was an incredibly enriching experience that allowed me to grow both professionally and personally. Over four weeks, I embarked on a journey of self-improvement and skill acquisition in the field of frontend development.

My primary objective during this internship was to contribute to the enhancement of the company's website's frontend. This mission involved identifying and addressing user interface issues, devising technical solutions, and even exploring opportunities to incorporate additional features to improve the website's functionality. It was a collaborative effort with a dedicated team, and I was excited to be a part of it.

One of the most significant challenges I faced was my limited prior knowledge of frontend development. To overcome this, I dedicated a substantial portion of my internship to acquiring the necessary technical and conceptual knowledge. Through practical experiences, such as hands-on coding and website development, and extensive research into frontend development principles and best practices, I gradually built a strong foundation.

In the first week, I undertook comprehensive research on frontend technologies and compiled a detailed report. This report served as a guide and motivated me to delve deeper into the subject. I gained insights into the importance of frontend technologies in the modern business landscape and the significance of user satisfaction in the success of web applications.

The second week began my practical journey, where I learned React.js and revamped an existing website. I encountered challenges along the way, such as the transition from Bootstrap to TailwindCSS and the implementation of interactive components. These challenges taught me adaptability, problem-solving, and the art of configuring diverse components.

During the third week, I ventured into Vue.js, expanding my toolkit and gaining experience with another popular frontend framework. This period introduced me to unique syntax and further honed my frontend development skills. I encountered the familiar floating label challenge but approached it with a fresh perspective, ultimately finding a solution.

In the fourth week, I joined a team of experienced developers, contributing to daily meetings and actively participating in discussions. I made valuable contributions, such as proposing a responsive design framework, enhancing accessibility features, and implementing a dynamic search functionality.

Throughout this internship, I acquired technical expertise and a valuable skill set that will serve me well in my future endeavors. I learned the importance of adaptability, resilience, and the ability to tackle complex technical problems. Additionally, I gained insights into teamwork, project management, and the ever-evolving nature of technology.

I would like to express my gratitude to Bilkent University for providing me with the foundation to embark on this journey of learning and growth. The knowledge and skills I acquired during my time at Bilkent were instrumental in my ability to tackle the challenges of this internship. I also extend my appreciation to the company for offering me this invaluable opportunity to apply my learning in a real-world context and for the guidance and mentorship provided throughout the internship.

In summary, my internship was a transformative experience that allowed me to bridge the gap between theoretical knowledge and practical application. It equipped me with the skills and confidence to continue my journey as a frontend developer, and I look forward to applying what I have learned in future projects and endeavors [9].

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Appendices

Appendix A

Table of Contents of the Frontend Technologies Report from Week 1

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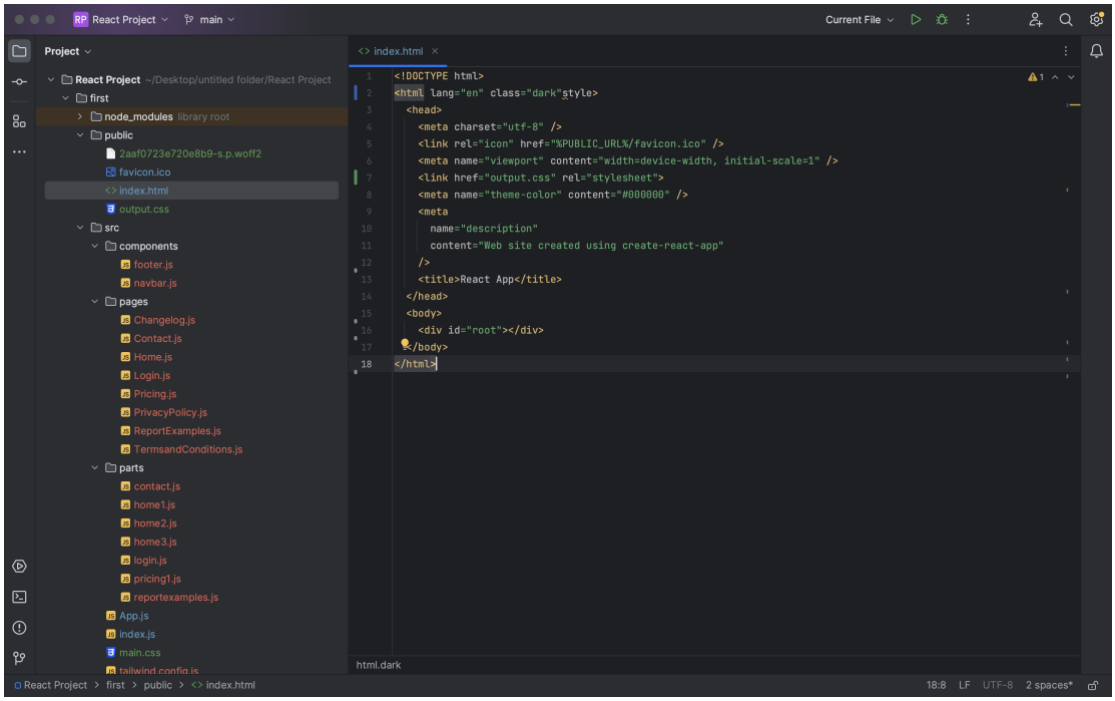
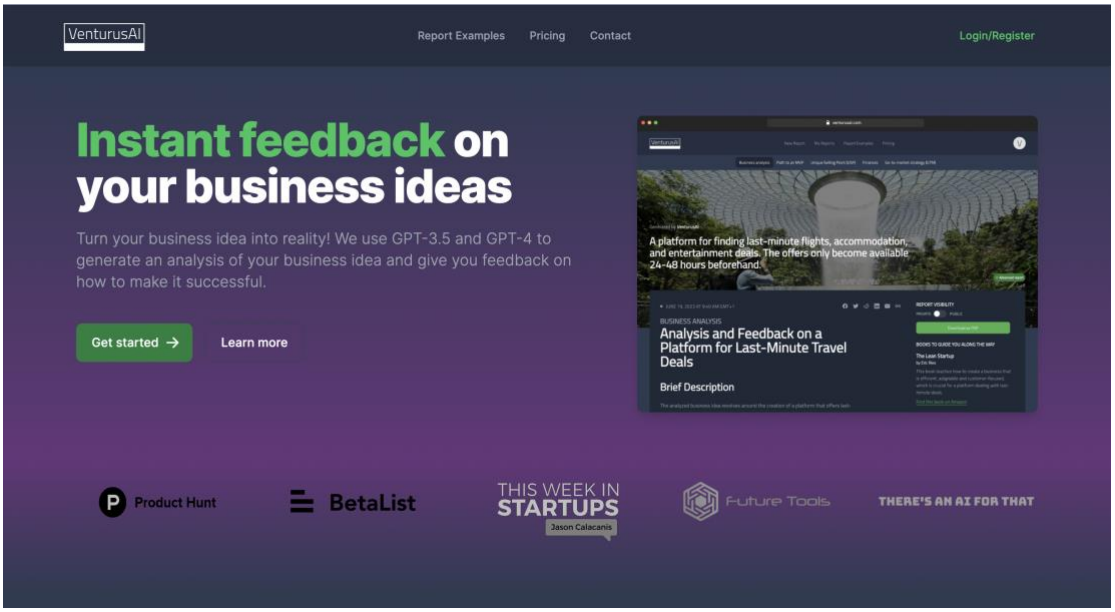
Appendix B

Week 2 Appendix: React Project

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Report Examples
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Instant feedback on your business ideas
Turn your business idea into reality! We use GPT-3.5 and GPT-4 to generate an analysis of your business idea and give you feedback on how to make it successful.
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A platform for finding last-minute flights, accommodation, and entertainment deals. The offers only become available 24-48 hours beforehand.
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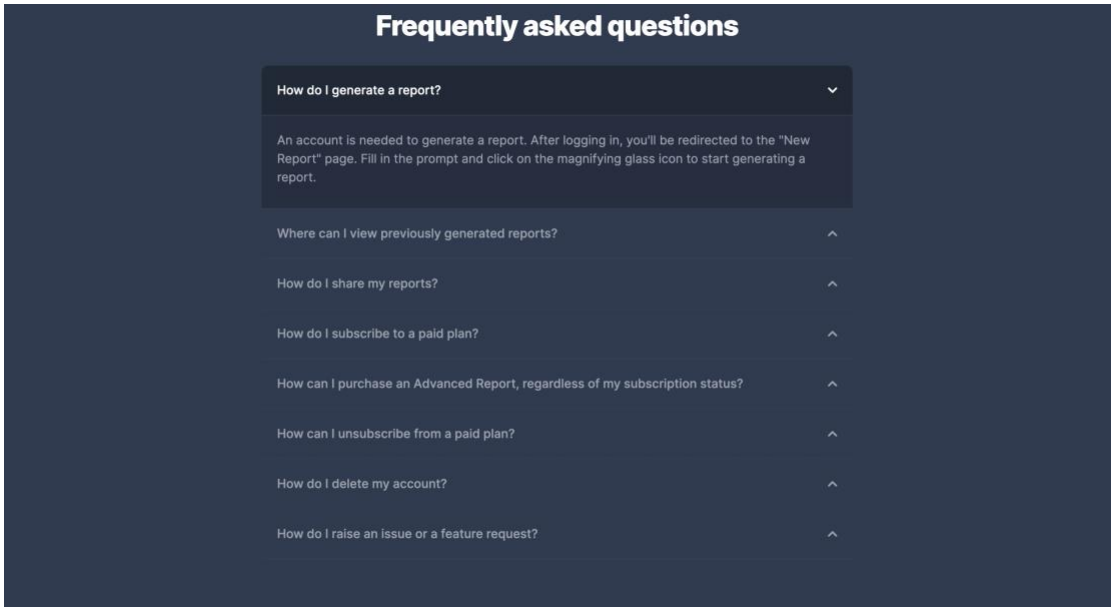
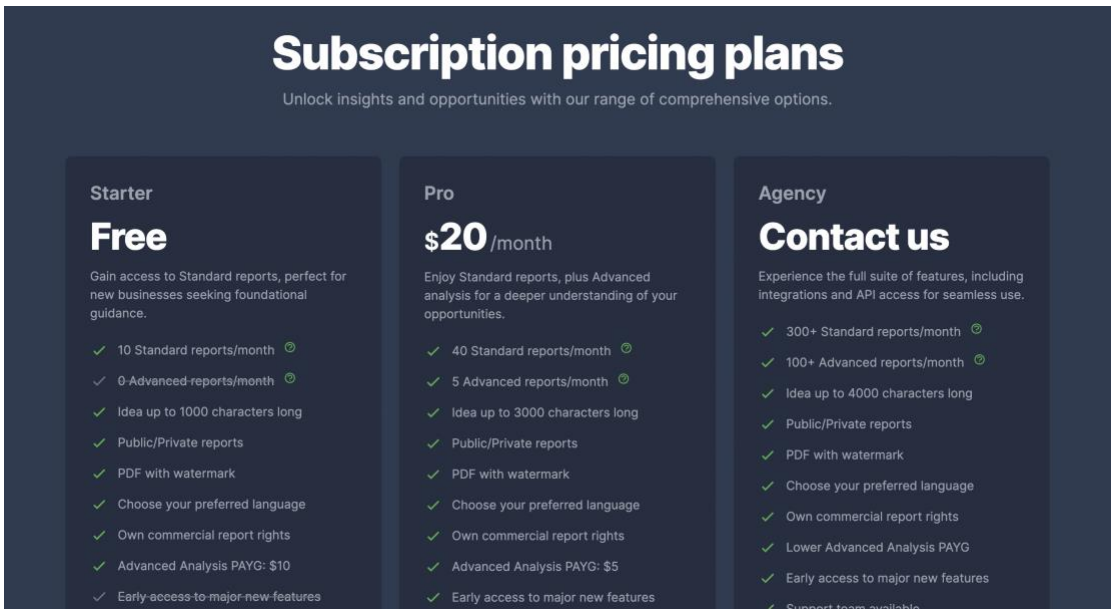
Analysis and Feedback on a Platform for Last-Minute Travel Deals
Brief Description
Product Hunt
BetaList
THIS WEEK IN STARTUPS
Jason Calacanis
Future Tools
THERE'S AN AI FOR THAT


Frequently asked questions
How do I generate a report?
An account is needed to generate a report. After logging in, you'll be redirected to the "New Report" page. Fill in the prompt and click on the magnifying glass icon to start generating a report.
Where can I view previously generated reports?
How do I share my reports?
How do I subscribe to a paid plan?
How can I purchase an Advanced Report, regardless of my subscription status?
How can I unsubscribe from a paid plan?
How do I delete my account?
How do I raise an issue or a feature request?


Subscription pricing plans
Unlock insights and opportunities with our range of comprehensive options.
Starter
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Public/Private reports
PDF with watermark
Choose your preferred language
Own commercial report rights
Advanced Analysis PAYG: $10
Early access to major new features
Pro
$20 /month
Enjoy Standard reports, plus Advanced analysis for a deeper understanding of your opportunities.
40 Standard reports/month
5 Advanced reports/month
Idea up to 3000 characters long
Public/Private reports
PDF with watermark
Choose your preferred language
Own commercial report rights
Advanced Analysis PAYG: $5
Early access to major new features
Agency
Contact us
Experience the full suite of features, including integrations and API access for seamless use.
300+ Standard reports/month
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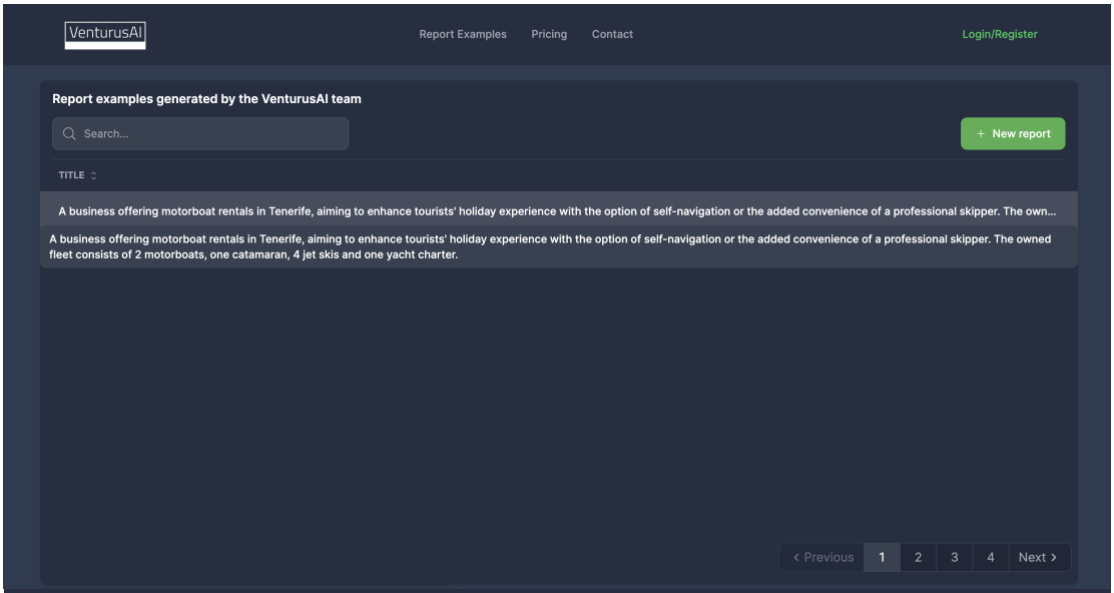
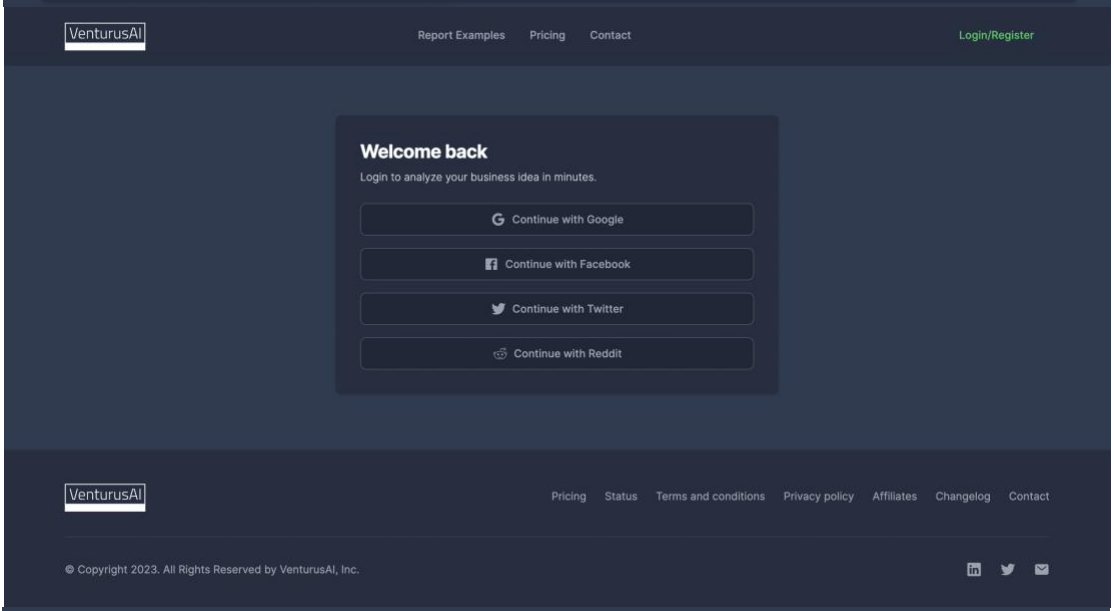
Early access to major new features





Frequently asked questions

What is the difference between One time payments and Subscriptions?

One time payments allow users to purchase Advanced reports without having to own a subscription. One time payments do not include the benefits of having a subscription, such as longer prompts (3000-4000 characters compared to 1000 for non-subscribers), PDF without watermark, and other features that are exclusive to our subscribers. Also, subscribers get a special price when purchasing additional reports.

How do I purchase an advanced report without owning a subscription?

Once you have created an account, navigate to the top right corner, click on your avatar, go tothe "Settings" sectionand scroll down to the "PAYG (Pay as you go) Advanced reports" section that will allow you to purchase advanced reports.

How do I subscribe to a paid plan?

To subscribe to a paid plan, you first need to register for an account on our platform. After registration, navigate tothe pricing page, where you'll see the different plans available. At the bottom of each plan, you'll find an option to subscribe. Simply click on that option and follow the subsequent steps to complete your subscription.

How do I cancel my paid subscription?

To unsubscribe from a paid plan, follow these steps: Click on your profile image in the top right corner of the page. Navigate to the "Settings" section. Locate the "Subscriptions" area and click on "Manage subscription". You'll be redirected to Stripe's page, where you can cancel your subscription.

What does the free version include?

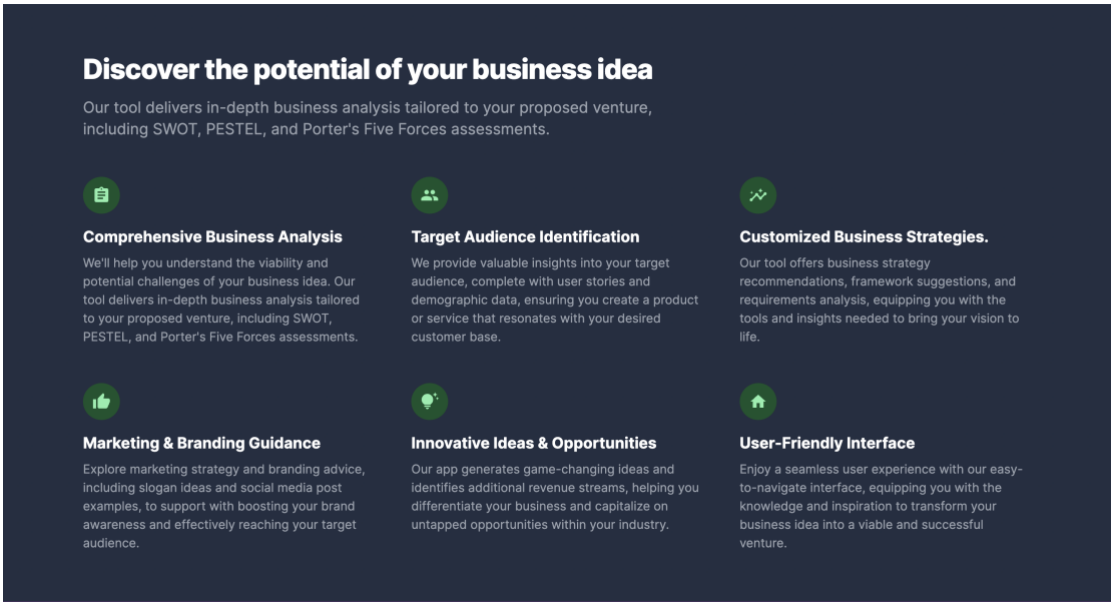
The free version includes 10 standard reports per month, allowing you to download each report as PDF or to share it. In addition to that you can generate the report in your preferred language. You can use this version for any purposes, because you own the commercial report rights.

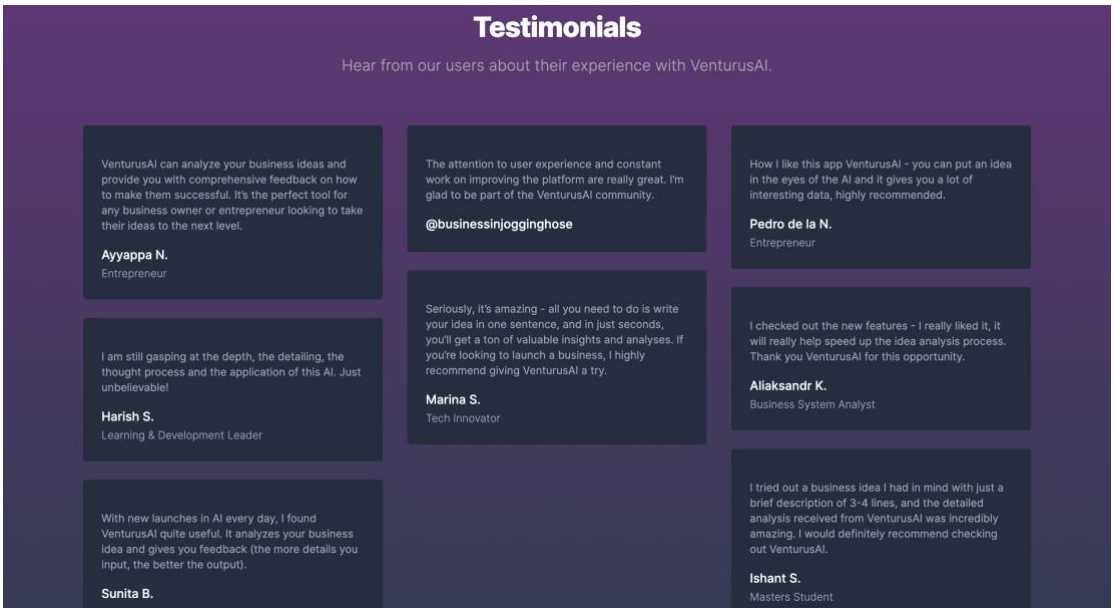
How do I get access to support as a paid customer?

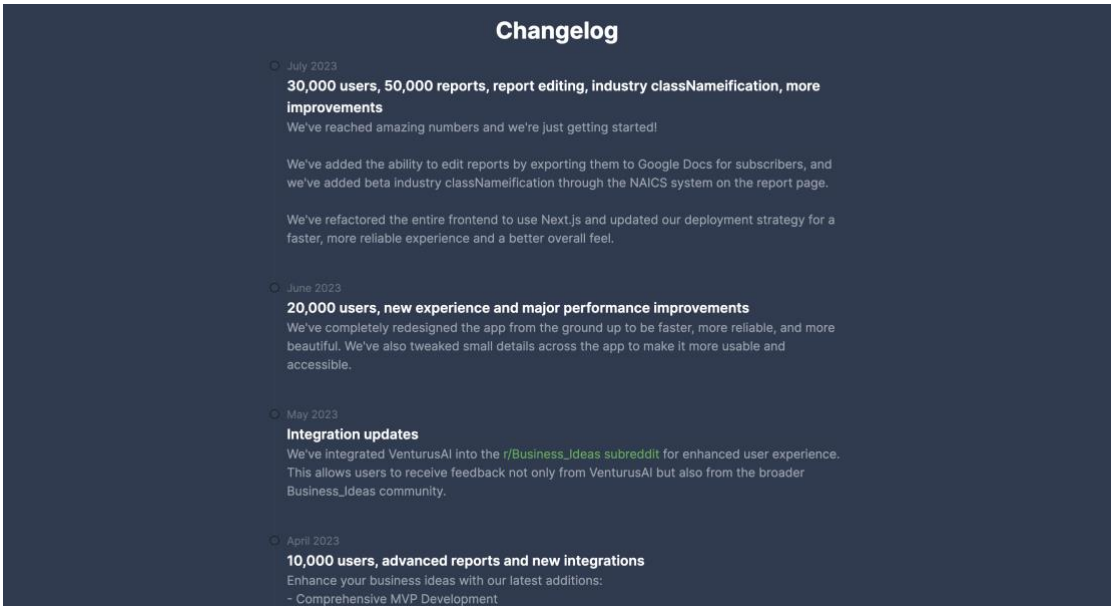
If you have any question or you encounter any issue please email support@venturusai.com from the same email address that you are using on VenturusAI.com. In addition to that, you could just use the contact form available here.

How do I remove my account from VenturusAI.com?

To get your account removed, please send an email to support@venturusai.com from the same email address that you are using on VenturusAI.com, requesting to get your account removed. Please have in

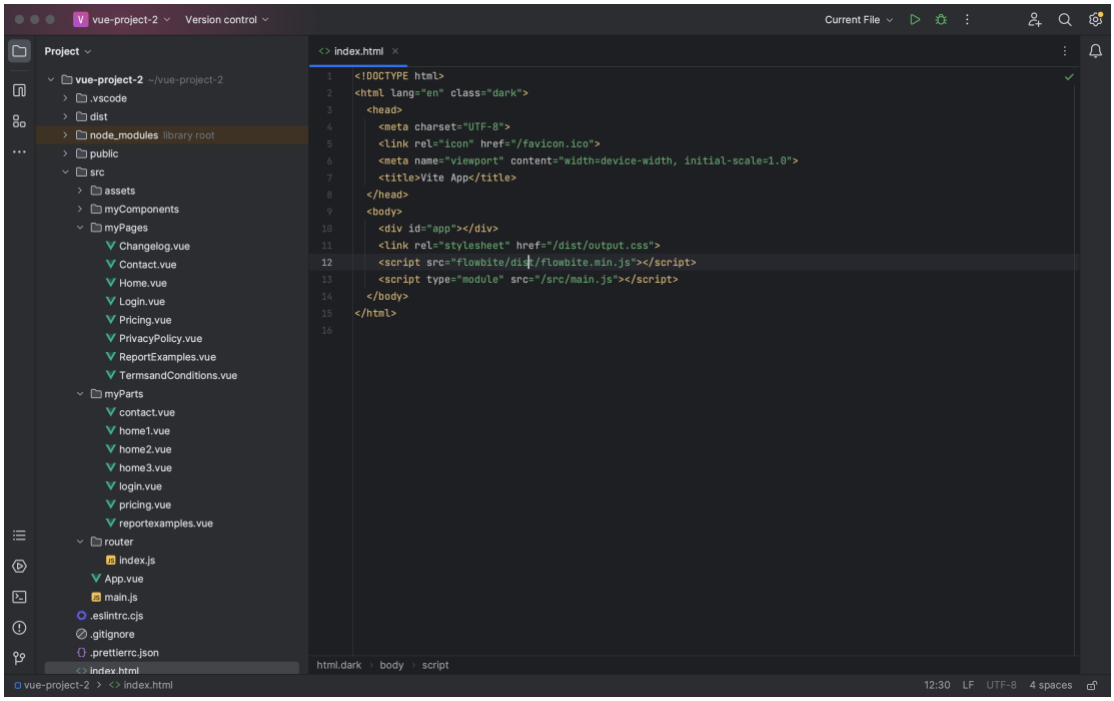

Discover the potential of your business idea
Our tool delivers in-depth business analysis tailored to your proposed venture, including SWOT, PESTEL, and Porter's Five Forces assessments.
Comprehensive Business Analysis
We'll help you understand the viability and potential challenges of your business idea. Our tool delivers in-depth business analysis tailored to your proposed venture, including SWOT, PESTEL, and Porter's Five Forces assessments.
Target Audience Identification
We provide valuable insights into your target audience, complete with user stories and demographic data, ensuring you create a product or service that resonates with your desired customer base.
Customized Business Strategies.
Our tool offers business strategy recommendations, framework suggestions, and requirements analysis, equipping you with the tools and insights needed to bring your vision to life.
Marketing & Branding Guidance
Explore marketing strategy and branding advice, including slogan ideas and social media post examples, to support with boosting your brand awareness and effectively reaching your target audience.
Innovative Ideas & Opportunities
Our app generates game-changing ideas and identifies additional revenue streams, helping you differentiate your business and capitalize on untapped opportunities within your industry.
User-Friendly Interface
Enjoy a seamless user experience with our easy-to-navigate interface, equipping you with the knowledge and inspiration to transform your business idea into a viable and successful venture.


Testimonials
Hear from our users about their experience with VenturusAI.
VenturusAI can analyze your business ideas and provide you with comprehensive feedback on how to make them successful. It's the perfect tool for any business owner or entrepreneur looking to take their ideas to the next level.
Ayyappa N.
Entrepreneur
The attention to user experience and constant work on improving the platform are really great. I'm glad to be part of the VenturusAI community.
@businessinjogginghose
How I like this app VenturusAI - you can put an idea in the eyes of the AI and it gives you a lot of interesting data, highly recommended.
Pedro de la N.
Entrepreneur
I am still gasping at the depth, the detailing, the thought process and the application of this AI. Just unbelievable!
Harish S.
Learning & Development Leader
Seriously, it's amazing - all you need to do is write your idea in one sentence, and in just seconds, you'll get a ton of valuable insights and analyses. If you're looking to launch a business, I highly recommend giving VenturusAI a try.
Marina S.
Tech Innovator
I checked out the new features - I really liked it, it will really help speed up the idea analysis process. Thank you VenturusAI for this opportunity.
Aliaksandr K.
Business System Analyst
With new launches in AI every day, I found VenturusAI quite useful. It analyzes your business idea and gives you feedback (the more details you input, the better the output).
Sunita B.
I tried out a business idea I had in mind with just a brief description of 3-4 lines, and the detailed analysis received from VenturusAI was incredibly amazing. I would definitely recommend checking out VenturusAI.
Ishant S.
Masters Student


Changelog
July 2023
30,000 users, 50,000 reports, report editing, industry classNameification, more improvements
We've reached amazing numbers and we're just getting started!
We've added the ability to edit reports by exporting them to Google Docs for subscribers, and we've added beta industry classNameification through the NAICS system on the report page.
We've refactored the entire frontend to use Next.js and updated our deployment strategy for a faster, more reliable experience and a better overall feel.
June 2023
20,000 users, new experience and major performance improvements
We've completely redesigned the app from the ground up to be faster, more reliable, and more beautiful. We've also tweaked small details across the app to make it more usable and accessible.
May 2023
Integration updates
We've integrated VenturusAI into the r/Business_Ideas subreddit for enhanced user experience. This allows users to receive feedback not only from VenturusAI but also from the broader Business_Ideas community.
April 2023
10,000 users, advanced reports and new integrations
Enhance your business ideas with our latest additions:
- Comprehensive MVP Development

Appendix C

Week 3 Appendix: Vue Project



Self-Checklist for Your Report

Please check the items here before submitting your report. This signed checklist should be the final page of your report.

☒ Did you provide detailed information about the work you did?

☒ Is supervisor information included?

☒ Did you use the Report Template to prepare your report, so that it has a cover page, has all sections and subsections specified in the Table of Contents, and uses the required section names?

☒ Did you follow the style guidelines?

☒ Does you report look professionally written?

☒ Does your report include all necessary References, and proper citations to them in the body?

☒ Did you remove all explanations from the Report Template, which are marked with yellow color? Did you modify all text marked with green according to your case?

Signature: ____  ____