2023-10

Resume Builder

Sigma, Tamima

Independent University, Bangladesh

Resume Builder

By

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Summer, 2023

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October 18, 2023

Dissertation submitted in partial fulfillment for the degree of Bachelor of Science in Computer Science

Department of Computer Science & Engineering

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Attestation

I, Tamima Sigma, proudly present the academic report titled "Cv-Building Website" as a testament to my unwavering commitment to scholarly excellence. Within its pages, I have dedicated myself to rigorous research, unwavering adherence to ethical principles, and a commitment to precision and unwavering rigor. Each reference meticulously included in this report affirms my dedication to academic integrity.

Beyond being a mere document, "Resume Builder" embodies the spirit of intellectual inquiry and contributes to broader knowledge discourse. In summary, this work represents my commitment to precision, scholarly integrity, and unwavering excellence. "Cv-Building Website" is a cornerstone of academic discourse, embodying my pursuit of intellectual enlightenment and academic rigor.

18.10.2023

Signature Date

Tamima Sigma

Name

Acknowledgement

I commence with profound gratitude to the Almighty Allah, whose blessings endowed me with the fortitude, determination, and intellectual acumen necessary for this endeavor. Equally, I express deep appreciation for my internship at Softograph Ltd, a privilege I hold in reverence. I extend my heartfelt gratitude to Md. Asif Bin Khaled, an erudite faculty member and my discerning mentor. His unwavering support, astute counsel, and invaluable insights have been pivotal in my personal and professional growth, profoundly shaping the preparation of this report.

I also acknowledge Hasnain Bin Khaled, the esteemed Chief Operating Officer at Softograph Ltd, for his leadership and the opportunity he provided during my transformative internship. The knowledge and experience gained during this period transcend academia, forming a robust foundation for my future endeavors. These insights will serve as an illuminating guidepost in navigating the complexities of my professional journey.

Letter of Transmittal

05 October 2023
Md. Asif Bin Khaled
Senior Lecturer
Department of Computer Science and Engineering
Independent University Bangladesh

Subject: Letter of Submission for Internship Report, 2023

With due honor and respect, I, Tamima Sigma, from Summer 2023, would like to formally submit my internship report, titled "Resume Builder," as a requirement for the completion of my internship with Softograph Ltd. This report represents the culmination of 3 months which encapsulates the knowledge and experience I have gained during this period at Softograph Ltd. The primary goal for my internship was to gain experience in different technology-related fields of the company, including research, development, documentation, and website development with emphasis and priority on understanding how a website is being built. During the period of my internship at Softograph Ltd. I found that I learned and applied a lot of new skills and technologies. I would like to thank you immensely for all your guidance and support. I hope and pray that this report fulfills all the requirements and is up to your expectations. Thank you for your time and consideration.

Sincerely,
Tamima Sigma
1630436
Email: 1630436@iub.edu.bd

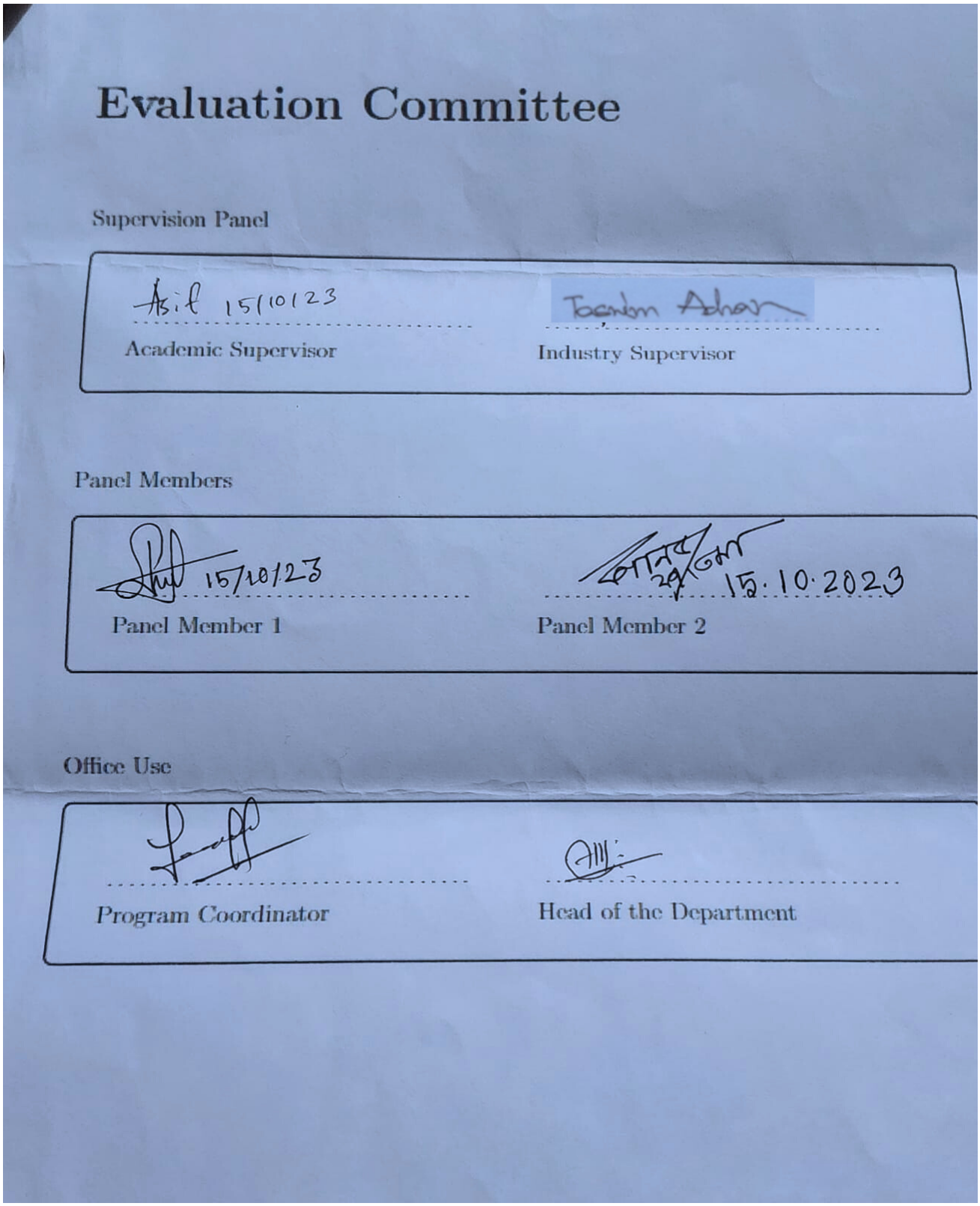

Figure 1: Evaluation Committee

Abstract

In today's fiercely competitive job market, the art of crafting a compelling curriculum vitae (CV) is paramount. Traditional CV creation methods often lack the interactivity and innovation required to leave a lasting impression on potential employers proposal outlines a research endeavor aimed at developing an advanced web-based CV-building platform using ReactJS and the MERN stack (MongoDB, Express.js, ReactJS, Node.js). The platform's central goal is to provide users with an intuitive interface for creating personalized, visually striking CVs, thereby enhancing their employability.
The document begins by succinctly addressing the limitations of conventional CV creation methods. Subsequently, it delves into an extensive literature review exploring relevant topics such as CV-building platforms and contemporary web technologies.

Keywords— **MERN** Stack, **Versatile**

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Chapter 1

Introduction

1.1 Background of the Work

In the contemporary landscape of heightened job market competitiveness, the endeavor of meticulously crafting a distinguished curriculum vitae, or CV, has evolved into a formidable and time-intensive undertaking. Recognizing this intricate challenge, the CV-Builder project emerges as an ingenious solution, conceived with the primary objective of simplifying this multifaceted process. This visionary initiative introduces an intuitively navigable platform that automates the laborious task of CV creation, thereby alleviating the temporal and intellectual burdens borne by aspiring professionals through its provision of an extensive array of meticulously curated CV templates, tailored to cater to diverse industries, the CV-Builder project aspires to transcend the boundaries of mere convenience. It endeavors to metamorphose the job-seeking journey into an elevated and streamlined experience, wherein users can effortlessly exhibit their qualifications and competencies with a level of efficacy that resonates with modern-day expectations.

Harnessing the transformative potential of contemporary web technologies, the CVBuilder project bestows upon its users the capability to construct compelling and visually striking CVs, a feat previously characterized by its complexity and resource-intensive nature. In essence, this project stands as a testament to the harmonious fusion of innovation and practicality, aiming to empower individuals on their quest for professional distinction.

1.2 Objectives

The MERN-Stack CV-Builder Project came into existence due to a convergence of compelling factors, each contributing to its profound significance and overarching purpose.
At its core, the project was conceived to address a pressing real-world need prevalent in today's professional landscape. Crafting a compelling and tailored resume, known as a curriculum vitae (CV), is a pivotal step in career development. However, this task can be daunting, particularly for individuals new to the workforce or those seeking a simplified and efficient process. Consequently, the project seeks to alleviate this challenge by offering a streamlined and user-centric solution, making the creation of impressive CVs accessible and approachable.
The creation of the MERN-Stack CV-Builder Project stemmed from a series of compelling motivations. First, it addresses the real challenge of crafting impressive CVs, which can be particularly daunting for newcomers to the professional world. By simplifying this process and making it user-friendly, the project fills a crucial need. Second, in a tech-driven world, digital skills are paramount. Beyond CV creation, the project imparts web development skills, enhancing users' employability. Third, the project's commitment to user-centric design aligns seamlessly with contemporary design principles, ensuring a user-friendly experience. Fourth, robust measures for data security and privacy safeguard user information. Fifth, by exploring innovative revenue models, the project ensures its financial sustainability. Sixth, it offers both academic and practical value, allowing users to gain hands-on experience while enhancing their professional profiles. Lastly, in an era defined by technological advancements, the project adapts to the evolving demands of the digital age, making it a dynamic and relevant solution to contemporary challenges.

1.3 Scopes

The primary scope of the CV-Builder project is to revolutionize the way individuals create and present their resumes (CVs) in today's highly competitive job market. This project aims to simplify the CV creation process, making it accessible and efficient for users of all technical backgrounds.

- Users can sign up and sign in.
- Users can add their information on this website which will be added to the database to keep the information saved for future
- Users can add as much information as they wish as the information taken by the site is dynamic.
- Users can add Personal Information, Skills and Experience.
- Users can choose professional templates from the given options
- Users can preview and print their Curriculum Vitae from the site directly

Chapter 2

Literature Review

2.1 Relationship with Undergraduate Studies

In CSE 213, my journey into Object-Oriented Programming was a pivotal step in my educational path. This course was instrumental in the contemporary software development landscape. It not only introduced me to the concept of data representation using objects but also instilled in me the craftsmanship of creating code that was both modular and reusable. The profound impact of this course was reflected in the enhanced quality of my code, a significant reduction in redundancy, and the cultivation of best practices in software development that have become second nature.

As I progressed further in my academic pursuit, CSE 303 emerged as a cornerstone in my educational odyssey. Focused on Database Management, this course delved into the intricacies of project design and planning. It empowered me with the expertise to design intricate relational databases, an indispensable skill when it comes to real-world database projects. The knowledge I gained was not just theoretical but had a practical application, enabling me to create databases tailored to real-world needs.

In a parallel track, CSE 309, dedicated to Web Application and Internet technologies, broadened my horizons in the tech industry. This course encompassed essential technologies such as HTML, CSS, and ReactJs, which are the building blocks of web development. They have become the linchpin of the internet's virtual landscape. The knowledge and tools I acquired from this course provided me not only with a robust foundation but also facilitated a seamless transition into mastering ReactJs for web application development. This ensured that I remained at the forefront of the latest trends and technologies in the ever-evolving field of web development.

In summary, my academic journey, shaped by courses like CSE 213, CSE 303, and CSE 309, has been a transformative expedition into the realms of Object-Oriented Programming, Database Management, and Web Application technologies. These courses have not only equipped me with the knowledge and skills necessary for success but have also shaped me into a proficient, adaptable technologist, ready to confront the multifaceted challenges of the modern software and web development domain.

2.2 Related works

Within the ever-expansive domain of online CV creation solutions, a plethora of platforms and initiatives have arisen, each adding their unique touch to the task of simplifying and improving the process of composing professional resumes. These platforms stand as priceless references for the CV-Builder project, offering profound insights into the finest practices and innovative elements that can be thoughtfully incorporated to craft an exceedingly competitive and user-centric application.

- LinkedIn Resume Builder:
  Source: LinkedIn
  Title: LinkedIn Resume Builder URL: LinkedIn
  LinkedIn's Resume Builder offers an extensive collection of expertly crafted templates suitable for different points in one's career journey. It presents a wide range of customization features, giving users the flexibility to personalize their CVs according to their individual requirements.

- Canva:
  Source: Canva Pty Ltd.
  Title: Canva URL: Canva
  Canva distinguishes itself through its wide array of customizable CV templates, coupled with a vast selection of design components. It gives users the ability to inject creativity into their resumes, guaranteeing an attractive and distinctive visual presentation..

- Resume.io:

  Source: Resume.io
  Title: Resume.io
  URL:Resume.io
  The mobile app from Resume.io simplifies the process of creating CVs through easy template selection and editing. Its user-friendly interface enhances the overall experience, making it an accessible and effective tool for crafting polished professional resumes.

- Zety:
  Source: Zety
  Title: Zety URL: Zety
  Zety is renowned for its easily navigable interface and an assortment of pre-made templates. It presents a user-friendly, step-by-step walkthrough, guaranteeing thorough coverage of every CV section and producing well-rounded and refined resumes.

- Novoresume:
  Source: Novoresume
  Title: Novoresume URL: Novoresume
  Novoresume stands out through its inventive method for crafting CVs. It offers numerous templates and distinctive elements, including a builder focused on skills-based CVs.

Chapter 3

Project Management & Financing

3.1 Work Breakdown Structure

The Resume-Building Website project's work breakdown structure (WBS) consists of key phases: initiation, front-end development, back-end development, database implementation, user management, testing, security, performance optimization, documentation, deployment, project review, and maintenance. Each phase plays a vital role in delivering a user-friendly, secure, and efficient website for resume creation and editing.

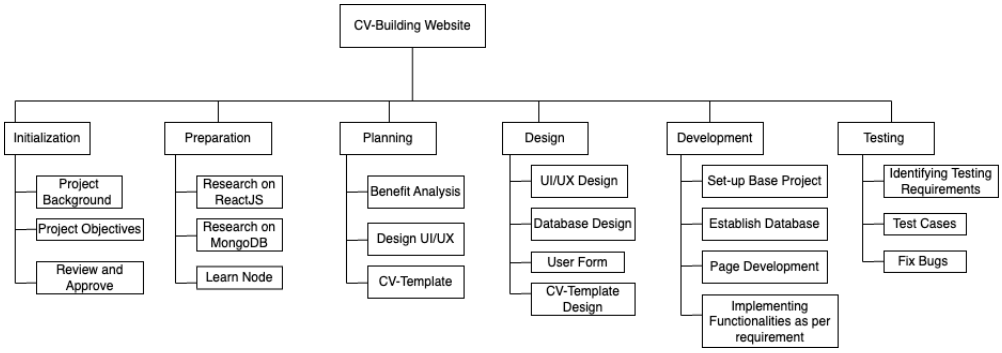

Figure 3.1: Work Breakdown Structure

3.2 Activity wise Time Distribution

The project comprises several phases: initial learning (21-26 days), requirement analysis (4-5 days), planning (2-2 days), design (3-4 days), and the core implementation phase (51-63 days). In total, the project is estimated to take around 81-101 days. These phases encompass team orientation, requirement gathering, project structuring, design work, and the bulk of development for the Resume-Building Website. However, variations in timelines may occur due to complexity and unforeseen challenges, underscoring the importance of effective project management for timely delivery.

Task	Days	Work Percentage %
Initializing (Learning Phase)	21	26
Requirement Analysis	4	5
Planning	2	2
Design	3	4
Implementation	51	63
Total	81	100 %

Table 3.1: Activity Wise Time Distribution

3.3 Gantt Chart

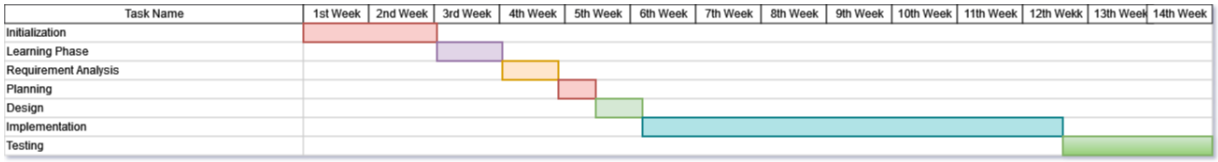

Figure 3.2: Gantt Chart

3.4 Activity-wise Resource Allocation

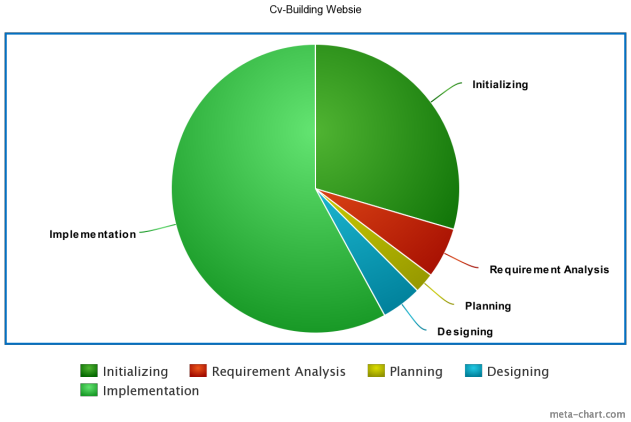

Figure 3.3: Activity Wise Resource Allocation

3.5 Estimated Costing

Item	Days Worked	Cost
Training and Planning	25	Tk. 2533
Requirement Analysis	4	Tk.699
Front-end Development	30	Tk.6757
Back-end	20	Tk.2796
Total		Tk.12785

Table 3.2: Estimated Costing

Chapter 4

Methodology

The Resume Generation Application is an ambitious web-based project geared towards providing users with an effective platform for crafting and managing their professional resumes, all within the framework of the Agile methodology. Agile's flexibility and responsiveness to changing requirements play a pivotal role in the development process.

The project commences by establishing the project environment, initializing a React app, and building the essential backend infrastructure using Express.js and Axios. This initial phase ensures that the foundation for the application is robust and well-prepared to meet the challenges ahead.

As the project progresses, users are granted the ability to register and log in, making way for the central feature of the platform - resume creation. Users can choose from a selection of resume templates, streamlining the process of designing a visually appealing and effective resume.

The development phase further enhances the user experience by focusing on the creation of an intuitive and user-friendly front-end using React.js. To maintain code modularity and ease of maintenance, reusable components like navigation bars are introduced. Security measures are also taken into account, with controlled access through protected routes for registered users.

The project's backend development concentrates on the creation of API endpoints capable of handling CRUD (Create, Read, Update, Delete) operations. Stringent data validation and authentication mechanisms are integrated to ensure user data remains secure and tamper-free.

Database integration is a pivotal step in the project, where a well-thought-out database schema is designed. MongoDB, a NoSQL database, is harnessed through Mongoose to efficiently store and manage the wealth of resume-related information.

In the final phase, the project's crowning achievement is realized - the dynamic generation of resumes based on user-provided information. These elegantly crafted resumes are then seamlessly displayed to users through React components, enabling easy viewing and downloading.

Throughout these phases, the project undergoes continuous refinement and improvement to guarantee that the Resume Generation Application retains its user-centric approach and remains adaptable to the evolving landscape of professional resume creation and management.

Chapter 5

Body of the Project

5.1 Work Description

During my enriching internship at Softograph Ltd., I was entrusted with a significant project – the creation of a Resume-building website. This role encompassed the comprehensive development of both the front-end and back-end components, providing me with a valuable and multifaceted experience.

In the beginning, my primary focus was on front-end development, where I utilized cutting-edge technologies such as ReactJS, CSS, Bootstrap, and AntD. These tools allowed me to create visually appealing and user-friendly interfaces, making the process of crafting engaging resumes for users more straightforward. ReactJS played a crucial role in delivering dynamic and responsive web pages, while CSS, Bootstrap, and AntD contributed to the design's aesthetics and overall functionality. For the backend, I made a deliberate choice to use Node.js and MongoDB for efficient data management. Node.js's speed and flexibility made server-side operations seamless, and MongoDB's scalability and versatility ensured the smooth storage and retrieval of a wide range of resume-related data. This internship not only enhanced my technical skills but also provided valuable insights into project management, teamwork, and effective problem-solving in a professional work setting. Collaborating with a diverse team of developers and designers honed my communication and coordination abilities. I also refined my problem-solving prowess by addressing various challenges encountered during the development process.

By actively contributing to the Resume-Building Website, I gained practical experience in both front-end and back-end web development, equipping me with a versatile skill set to tackle the ever-evolving landscape of web technology in the future. This experience has deepened my understanding of user-centric design and efficient data management, which will benefit me in my future endeavors in web development.

5.2 Requirement Analysis

The CV-Builder project aims to develop a dynamic web application that simplifies and enhances the process of creating professional resumes (CVs) for users. The primary goal is to empower job seekers to easily generate impressive CVs tailored to their specific qualifications and career aspirations.

- User Registration and Authentication :
  Users should be able to register for an account by providing their name and password. Registered users can sign in securely using their credentials
- Profile Management:
  Users can create and manage their personal profiles within the application.
  Profile management encompasses the capacity to enter and revise personal data, professional background, educational history, and skill sets.
- CV-Creation:
  The application provides a range of ready-made resume templates designed to suit different careers and fields. Users have the option to pick a template and personalize it by including their own details.
- Printing:
  Users have the convenient option to print their finalized CVs directly through the application's dedicated "Print" feature, which produces a printer-friendly version of the CV in an easily accessible format.

Rich Picture

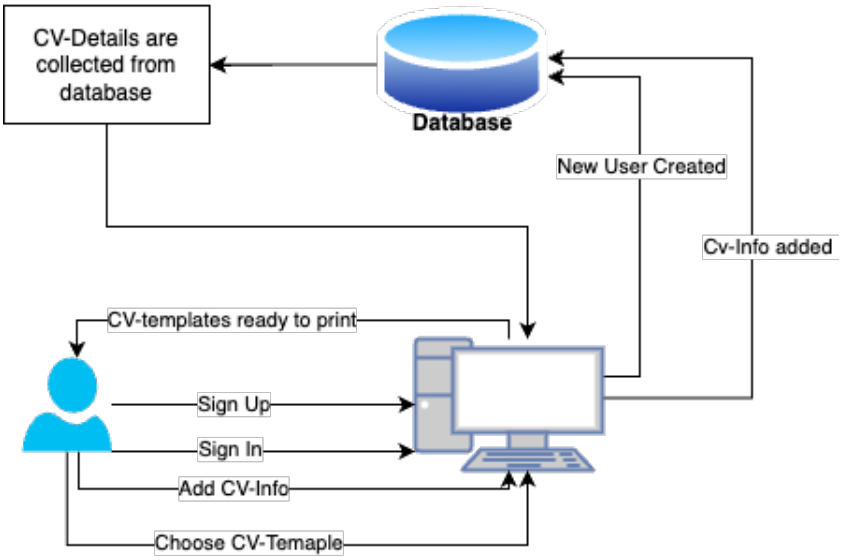

Figure 5.1: Rich Picture

Functional and Non-Functional Requirements

Category	Non Functional Requirement Description
*Usability	The UI of the System is clean and simple. New users can get used to this software so fast
	On any POST request(Registration, Login) the database
	Receiving the data saves the information on the database
	Response with a status of 200
	else if there is a problem saving a response with a status of 404 or 400
*Performance	The system will be responsive with Tab or Desktop
	The system will respond to user request in less than 1 second
Information	User can download resume

Table 5.1: Non Functional Requirement

Functional Requirement Number. NO.	Functional Requirement Description
FR1	When the user enters information for Registration and Login , the application sends approval if the information is correct and redirects to the user dashboard
FR2	the system shall allow users to write or edit information
FR3	The system shall allow a user to choose a template
FR4	The system shall record the information given by the user to the database
FR5	the system shall put information in the CV templates
FR6	The system shall let the user print their desired CV

Table 5.2: Function Requirement

5.3 System Analysis

The CV-Builder project is an innovative web application designed meticulously to revolutionize and improve the process of creating professional resumes (CVs) for our diverse and discerning user base. In this in-depth analysis, we embark on a journey to uncover the fundamental goals of this project, which extend far beyond mere simplification. Our aim is to offer our users an unparalleled opportunity for personal and professional growth. Delving deeper, we explore the intricate network of vital features that define the essence of this project, incorporating innovation, accessibility, and user empowerment. Furthermore, we delve into the project's robust and cutting-edge technology stack, which serves as the structural foundation for its development, ensuring scalability, reliability, and security. Nevertheless, the true essence of this project is rooted in its unwavering commitment to deliver an exceptional and seamless user experience. It adheres to user-centric design principles and a relentless pursuit of perfection, empowering individuals on their unique career journeys with a tool that not only simplifies but genuinely revolutionizes the way CVs are conceived and presented.

5.3.1 Six Element Analysis

	System Roles					
Process	Human	Non-Human Hardware	Computing Hardware	Software	Database	Communication and Network
Register	User enters credentials into Sign-Up Page	N/A	Desktop, Laptop,Mouse, Keyboard	Web-Browser	Mongo Db	Internet
Login	User enters credentials into Sign In Page	N/A	Desktop, Laptop,Mouse, Keyboard	Web-Browser	Mongo Db	Internet
Create Profile	Clicking on the Name of the user navigates to Profile Page	N/A	Desktop, Laptop,Mouse, Keyboard	Web-Browser	Mongo Db	Internet
Updating Personal Information	User enters Personal Information in Dynamically created form	N/A	Desktop, Laptop,Mouse, Keyboard	Web-Browser	Mongo Db	Internet
Updating Skill and Education	User enters Skill and Education information in Dynamically created form. Users can add or remove fields as desired	N/A	Desktop, Laptop,Mouse, Keyboard	Web-Browser	Mongo Db	Internet
Updating Project and Experience	User enters Project and Experience details in Dynamically created form. Users can add or remove fields as desired	N/A	Desktop, Laptop,Mouse, Keyboard	Web-Browser	Mongo Db	Internet
Choose Template	Giving the User's information, the User can choose CV-templates	N/A	Desktop, Laptop,Mouse, Keyboard	Web-Browser	Mongo Db	Internet
Print Resume	User can Print their desired Resume	N/A	Desktop, Laptop,Mouse, Keyboard	Web-Browser	Mongo Db	Internet

Table 5.3: Six Element Analysis

5.3.2 Feasibility Analysis

T This feasibility analysis report aims to evaluate the practicality and viability of the CV-Builder project, considering technical, economic, operational, and scheduling considerations, to

make an informed decision on its implementation.

Technical Feasibility:

The proposed technology stack, consisting of MongoDB, Express.js, ReactJS, and Node.js, is well-established and aligns with contemporary web development standards. Access to skilled developers and abundant online resources further enhances technical feasibility. The incorporation of third-party libraries (AntD, Axios, React-Router) is technically sound, offering robust design, API integration, and seamless navigation features that complement the project's objectives.

Economic Feasibility:

A well-defined budget has been allocated to cover development expenses, hardware acquisition, software licenses, and ongoing operational costs. While initial development costs are significant, they are offset by the long-term potential, making the project economically feasible.

5.3.3 Problem Solution Analysis

Problem analysis involves the initial step of comprehending and clearly defining the issue that needs to be addressed. On the other hand, problem-solving focuses on discovering and implementing solutions that align with the problem's specific requirements and limitations. When it comes to designing and constructing information systems, a significant portion of the work revolves around resolving issues, whether the goal is to enhance existing systems or seize opportunities in the market. During the development phase, I encountered numerous challenges, particularly because I was new to MERN Stack Development, which comprises MongoDB, ExpressJS, ReactJS, and NodeJS. Initially, I had limited knowledge of how these technologies functioned. At the outset of my internship, I undertook extensive self-study to gain a deeper understanding of JavaScript libraries. I grappled with various issues, and my code often didn't yield the desired results. Fortunately, my supervisor provided invaluable assistance in troubleshooting and rectifying these issues. Additionally, I encountered some hurdles, I have faced difficulties establishing backend , using Axios, placements which I learned to address along the way

5.3.4 Effect and Constraints Analysis

- **Empowering Users:**
  The MERN-CV-Building Project exerts a transformative effect by empowering users to effortlessly craft professional resumes (CVs). It enhances their career prospects, providing them with a valuable tool in a competitive job market.

- **Skill Advancement:**
  The development team gains a wealth of experience in cutting-edge technologies, full-stack web development, and user-centered design. This newfound expertise becomes a valuable asset for future projects and endeavors.

- **Budgetary Limitations:**
  The project operates within a predefined budget, which may impose restrictions on the extent of feature development, and marketing endeavors.

- **Rigorous Timelines:**
  The project's timeline for completion is fixed, necessitating a meticulous adherence to deadlines. Maintaining quality development within these constraints is paramount.

5.4 System Design

UML Diagrams

Unified Modeling Language (UML) is a standardized visual language used in software engineering to represent and communicate the design, structure, and behavior of complex systems.

Architecture

The architectural framework of the CV-Builder project has been meticulously fashioned to ensure a seamlessly efficient and user-friendly experience. It harnesses the potent capabilities of the MERN stack, which constitutes MongoDB, Express.js, ReactJS, and Node.js, harmoniously blending front-end and back-end components for a well-structured foundation.

On the front-end, the project effectively utilizes ReactJS in conjunction with HTML, CSS, and JavaScript to create a robust underpinning for the development of interactive and user-friendly interfaces. These technologies play a pivotal role in enabling dynamic web page generation, facilitating easy user navigation and interaction with the application. The combination of ReactJS, HTML, CSS, and JavaScript forms a dynamic synergy that enhances the end-user's interaction with the platform.

The back-end operations, on the other hand, lean upon Node.js and Express.js, offering scalability and robust server-side logic. Node.js, with its non-blocking I/O capabilities, ensures optimal performance, even during peak user traffic periods. Concurrently, MongoDB takes up the mantle of the database, assuring secure storage of user profiles and CV-related data. The

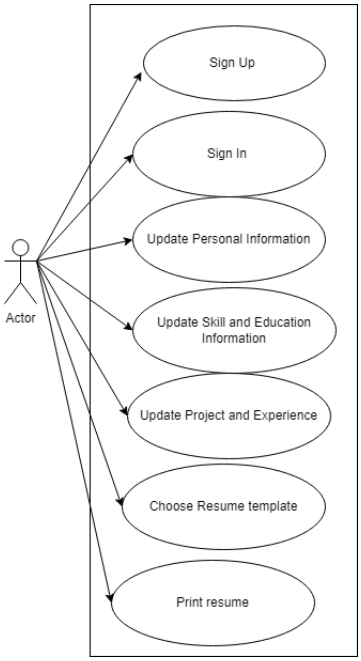

Figure 5.2: Use Case Diagram

strategic choice of MongoDB bolsters data integrity and provides a reliable foundation for the storage and retrieval of critical information.

To further elevate the user experience, the project thoughtfully integrates third-party libraries like AntD for design elements, Axios for efficient API calls, and React-Router for seamless page navigation. AntD contributes to the aesthetic appeal and the overall functionality of the application, rendering a visually pleasing interface. Axios optimizes the communication between the application and external data sources, ensuring swift and efficient data retrieval and submission. Simultaneously, React-Router streamlines page navigation, creating a smooth and user-friendly transition between different sections of the application.

In essence, the CV-Builder project has been meticulously engineered with a holistic approach, seamlessly combining a powerful technology stack, innovative design elements, and user-centric principles to provide an exceptional and transformative experience in the realm of creating and managing professional resumes. This sophisticated architecture fosters an environment of efficiency, reliability, and user empowerment, ensuring that it goes well beyond mere simplification to truly revolutionize the process of crafting and presenting CVs.

5.5 Implementation

The user is welcomed to the come page with some information about the site. Consisting of smooth scrolling Link like ”About Us” and ”Contact Us”. There are also ”Sign Up” and ”Sign In” Buttons for the user to register to log in. Buttons are components of AntD to make it function seamlessly.

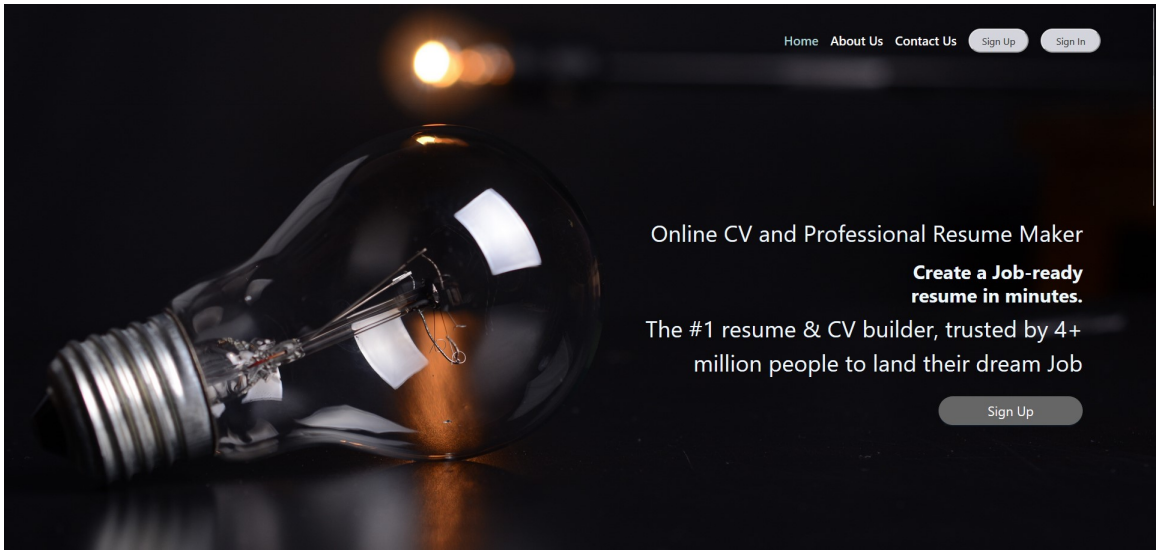

Figure 5.3: Home Page

Giving the credentials like User Name and Password which is already in the MongoDb Database, the user can Sign In. The User needs to Sign Up at first to ensure security.

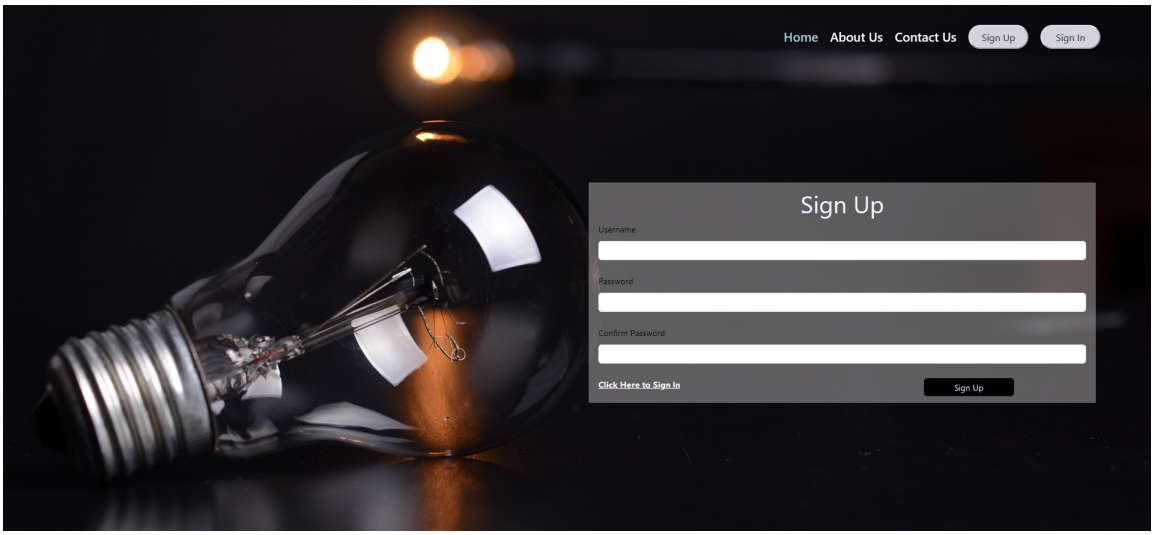

Figure 5.4: Sign Up

The Profile Page , Users can add as much as information and remove them from the profile page. This page consists of 3 Tab panes from AntD which are "Personal Information","Skills and Education" , "Project and Experience". User information is saved in MongoDb.

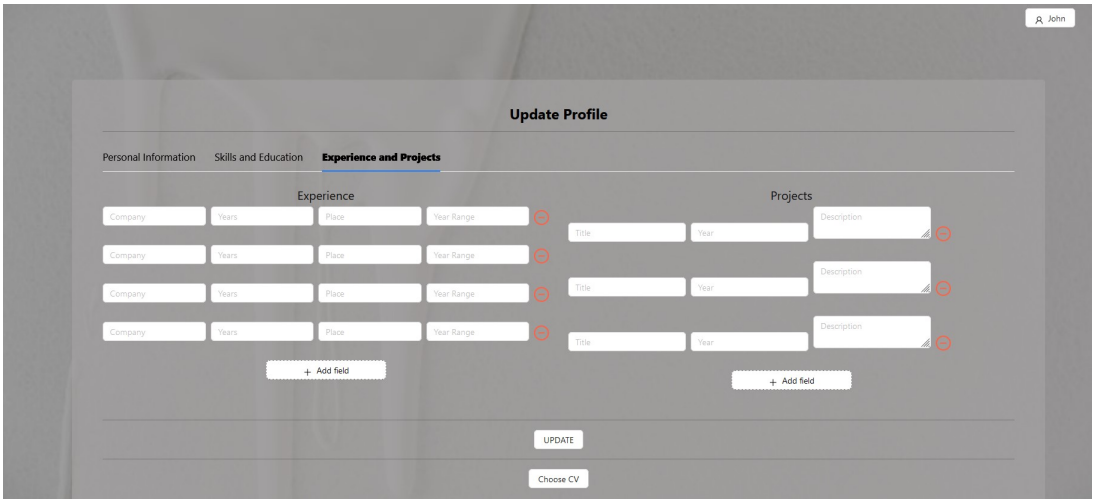

Figure 5.5: Profile Page

After choosing the templates from pre made template section, the user can preview and. The templates will already be filled with the given information by the user which is saved in the database. After previewing the template the user can click the print button to print their desired professional Curriculum Vitae

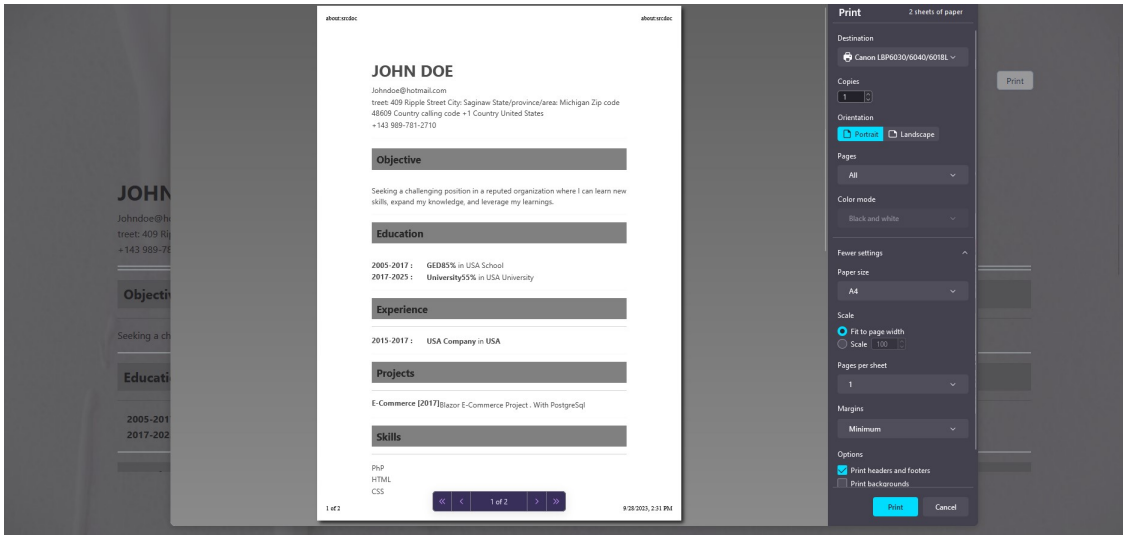

Figure 5.6: Print Image

5.6 Testing

Input

Process	Field Types
*Sign Up	Use Name- String
	Password-String
	Confirm Password- String
*Sign In	User Name-String
	Password-String
*Profile Input	First Name- String
	Last Name- String
	Email-String
	Mobile Number-String
	Portfolio-Link
	Career Objective- String
	Address- String
	Qualification-String
	Percentage- Number
	Institution-String
	Year Range-Number
	Technology-String
	Rating-Number
	Company-String
	Years-Number
	Place-String
	Title-String
	Description-String

Table 5.4: Input

Output

Process	Output
*Sign Up	On Success- Alert Message(Registration Successful)
	On Failure- Alert Message(Registration Failed)
*Sign In	On Success-Alert Message(Login Successful)
	On Failure-Alert Message(Login Unsuccessful)
CV-Creation	Directed to Home Page to select and Preview Template
Print	Generated CV for user pops for printing

Table 5.5: Output

Chapter 6

Results & Analysis

The completion of the MERN-Stack CV-Builder Project was a challenging journey, especially for a solo developer. This report focuses on the outcomes of the project, highlighting both the challenges faced and the results achieved during its development and testing phases.

- Challenges Faced:
  The project presented various challenges throughout its development. Being a solo developer, managing the entire workload and decision-making process was demanding. The project's complexity required a trial-and-error approach, which was necessary to navigate the uncharted territory of building a web application framework.

- Objectives and Scope: 's vital to stress that the main goal of this project was not to provide a completely operational service. Instead, it aimed to establish a solid foundation for future projects with similar objectives. This scope had a significant impact on the development strategy, which centered on crafting a framework or prototype of the ultimate system. This approach was chosen to make the workload more manageable and pave the way for subsequent development endeavors.

- Testing Phase:
  The testing stage presented a unique array of difficulties, which encompassed the detection of issues, feelings of setback, and a sense of insufficiency. Nonetheless, these hurdles played a crucial role in recognizing and applying remedies for the identified problems. The iterative cycle of testing and bug resolution played a central role in enhancing the project's performance and reliability.

- Results Achieved:
  Despite its small-scale nature, the application successfully withstood testing and emerged as a functional entity in its own right. It effectively serves its intended purpose as a skeletal framework for future projects. The project's stability reached a level where further iterations were not required, demonstrating its readiness for future development stages.

- Analysis:
  Although it was a modest endeavor, the application endured the testing process and emerged as a fully operational entity. It effectively fulfills its designated role as a foundational framework for upcoming projects. The project's stability reached a point where additional rounds of refinement were unnecessary, showcasing its preparedness for subsequent developmental phases.

- Conclusion:
  The MERN-Stack CV-Builder Project, though challenging, resulted in a successful skeletal framework for future development. The testing and iterative process, though demanding, led to a stable and functional application. The project serves as a testament to the importance of perseverance, problem-solving, and adaptability in the face of challenges, and it stands ready to pave the way for future projects in a similar vein.

Chapter 7

Project as Engineering Problem Analysis

7.1 Sustainability of the Project

The MERN stack project, which encompasses MongoDB, Express.js, React, and Node.js, for constructing CVs, was initiated with the central objective of providing a proficient platform for users to create professional resumes. Throughout this journey, a wide range of vital skills were developed, challenges were skillfully overcome, and exciting prospects for the future have come into view.

In terms of skills acquisition, this project served as an outstanding platform for mastering the art of front-end development using React. The team adeptly crafted responsive user interfaces, ensuring seamless compatibility across various devices, thereby enhancing the user experience. This proficiency in React not only elevated the project's interface but also laid a robust groundwork for forthcoming web development ventures.

The project also entailed the implementation of a robust RESTful API, which played a pivotal role in handling data seamlessly. This aspect of the project provided the team with valuable insights into server-side development using Node.js and Express.js. Furthermore, MongoDB, a NoSQL database, was adeptly employed for data storage, offering scalability and adaptability. This experience with MongoDB was instrumental in optimizing data management and retrieval, ensuring the platform's operational efficiency.

The project management approach was firmly grounded in Agile principles, specifically adhering to the Scrum methodology. This approach facilitated iterative development and adaptive planning, fostering collaboration and efficiency within the team. Challenges were addressed proactively, including the intricate task of dynamically generating CVs based on user inputs. The team also painstakingly refined the user interface to ensure an intuitive process for creating CVs.

Looking forward, the project holds promising prospects. There are intentions to expand the template library, providing users with a more extensive array of options for customization. This expansion will elevate the platform's attractiveness and utility, further reinforcing its position

as a valuable tool for crafting impressive resumes.

7.2 Social and Environmental Effects and Analysis

The CV-building platform has left a significant mark on both social and environmental fronts, embodying its commitment to empowerment, accessibility, energy efficiency, and responsible resource management.

From a social perspective, the platform has empowered users by providing them with the tools to establish a professional online presence, bridging the gap between job seekers and career opportunities. This empowerment is instrumental in advancing careers, enhancing employability, and improving socioeconomic prospects. Additionally, the user-centric design and intuitive interface of the platform have greatly improved accessibility, making it inclusive for individuals with varying levels of technical expertise, ensuring opportunities are accessible to a broader and diverse audience.

On the environmental front, the project's focus on optimizing code and server configurations has resulted in significant energy efficiency gains. By streamlining resource utilization, the website minimizes energy consumption, aligning with broader sustainability objectives and showcasing a commitment to responsible resource management. Furthermore, the strategic use of cloud services in the project's infrastructure enables dynamic scaling, minimizing resource wastage and contributing to a more sustainable technological ecosystem by efficiently utilizing cloud-based resources.

In essence, this CV-building platform is not only a tool for crafting resumes but also a symbol of empowerment, inclusivity, energy efficiency, and responsible resource management, making a positive impact on both individuals and the environment.

7.3 Addressing Ethics and Ethical Issues

The ethical considerations surrounding this project warrant careful examination, as they currently rest on somewhat shaky ground. The project's core function revolves around the responsible management of users' personal information. However, it's evident that the current iteration lacks robust security measures. The existing authentication system merely conducts a basic comparison of provided usernames and passwords against entries in the database, falling short in terms of security. This raises ethical red flags, as deploying the project in its current state could potentially expose users' personal data to risks and breaches. To address this ethical dilemma, it is imperative that future builds prioritize the implementation of more stringent security measures. This entails adopting advanced credential management practices and storing user information off-site, effectively fortifying the project against any potential malicious actors seeking unauthorized access to sensitive user data. Such proactive measures are essential to uphold the ethical responsibility of safeguarding user information and privacy

Chapter 8

Lesson Learned

8.1 Problems Faced During this Period

I delve into the profound experiences and lessons learned during my internship on the CV-Builder project, where I encountered coding challenges head-on while weaving sustainability principles into our development process.

The CV-Builder project presented a dynamic landscape of coding challenges that tested our skills and creativity. One of the central hurdles was effectively managing complex asynchronous operations. In the fast-paced world of web development, asynchronous tasks are common, but they can be intricate to orchestrate. My team and I tackled this challenge by adopting cutting-edge techniques and libraries, ensuring that our system performed seamlessly even during data-intensive processes.

Another significant challenge was optimizing website performance. In an era where users demand lightning-fast experiences, the need for performance optimization cannot be overstated. We dedicated substantial effort to fine-tuning our website, optimizing loading times, and enhancing overall responsiveness. This not only improved user satisfaction but also aligned with sustainability goals by reducing the energy consumption associated with prolonged website usage.

Perhaps one of the most unique challenges we embraced was our commitment to custom development, avoiding the use of templates. While templates can expedite development, they often come with unnecessary bulk, impacting both performance and sustainability. Our decision to embark on a custom development journey demanded resourcefulness and creativity. It allowed us to craft a tailored user experience that was both efficient and environmentally conscious.

Throughout this journey, my internship experience highlighted the immense value of collaborative problem-solving and knowledge sharing. Working alongside a diverse and skilled team, I witnessed the power of collective intelligence in expediting solutions and enriching our skill set. It was inspiring to see how the fusion of different perspectives and expertise could lead to innovative solutions that transcended the limitations of individual capabilities.

In retrospect, this internship journey reaffirmed the importance of coding resilience and efficiency. Efficient code not only benefits users with a seamless experience but also contributes

to a smaller carbon footprint. As we optimized our code and processes, we realized that sustainability and technological excellence can go hand in hand, setting an example for future development endeavors.

In essence, this executive summary encapsulates not only my professional growth but also the profound lessons I've learned during my time with the CV-Builder project. It underscores the intrinsic connection between coding excellence, sustainability, and collaborative problem-solving, setting a precedent for future projects in the ever-evolving landscape of web development.

Challenges

Asynchronous Complexity: Managing asynchronous operations, such as API calls and data updates, within a real-time web application was a central coding challenge. Ensuring data consistency and preventing race conditions demanded meticulous coding practices.

Performance Optimization: The project required us to optimize website performance, particularly when handling extensive user data. Our goal was to reduce loading times and minimize server resource utilization for a seamless user experience.

Custom Development: It's important to note that we did not rely on templates; instead, we created each page and dynamic template from scratch. This added an extra layer of complexity, as every aspect of the website had to be meticulously designed and developed to meet our specific requirements.

8.2 Solution of those Problems

- Asynchronous Mastery:
  To conquer asynchronous complexity, we embraced a multifaceted approach. We structured our code to handle asynchronous tasks gracefully, leveraging techniques like promises and async/await for robust data management. Rigorous testing and debugging procedures were crucial to maintain data integrity. This coding excellence not only enhanced user experience but also aligned with sustainability principles by minimizing server workload and energy consumption.

- Performance Enhancement:
  Prioritizing website performance, we implemented innovative strategies. Data caching mechanisms were introduced to curtail redundant database queries, while lazy loading techniques optimized resource allocation. Continuous server performance monitoring ensured our proactive approach yielded substantial improvements in website speed and efficiency. These efforts demonstrated the symbiotic relationship between coding efficiency and sustainability.

Key Takeaways

- Coding Resilience:
  Overcoming intricate coding challenges underscored the importance of coding resilience. It reinforced the idea that tenacity, adaptability, and creative problem-solving are essential

attributes for a developer. These challenges pushed us to explore innovative solutions and sharpened our coding skills.

- Efficiency and Sustainability:

  The pursuit of coding excellence and performance optimization revealed the undeniable synergy between coding efficiency and environmental sustainability. Efficient code not only benefits users through improved performance but also reduces server workload, contributing to lower energy consumption and a smaller carbon footprint.

- Custom Development:
  Creating each page and dynamic template from scratch was a demanding but rewarding endeavor. It reinforced the value of tailoring solutions to specific project requirements and highlighted the importance of a meticulous and detail-oriented approach.

Chapter 9

Future Work & Conclusion

9.1 Future Works

In an era where environmental consciousness has taken center stage, businesses and individuals are increasingly recognizing the imperative of harmonizing their digital operations with sustainability objectives. In the realm of the internet, a sphere notorious for its voracious energy consumption, several pivotal initiatives have emerged to promote eco-conscious web practices. Let's delve deeper into these transformative strategies:

Green Hosting Pioneers: A fundamental step towards sustainable web development is the selection of hosting providers wholeheartedly committed to renewable energy sources. Traditional data centers often rely on fossil fuels, casting a heavy carbon shadow upon websites and digital services. However, visionary hosting companies harness the power of renewable energy, such as wind and solar, to significantly mitigate the environmental footprint of their hosting services. Opting for these conscientious hosting providers ensures that the digital infrastructure supporting your website is aligned with your sustainability aspirations.

Carbon Footprint Quantification: Integrating tools to monitor and quantify the website's carbon footprint, promoting transparency in environmental impact assessment.

Skills Development: I genuinely make a meaningful difference in the pursuit of sustainability, it is imperative to monitor and quantify the carbon footprint of websites. This not only enables a clear understanding of environmental impact but also fosters transparency, a cornerstone of responsible digital stewardship. By seamlessly integrating cutting-edge tools and metrics into your web ecosystem, you empower website owners to measure, analyze, and reduce their carbon emissions effectively.

9.2 Conclusion

My internship journey with the CV-Builder project provided me with invaluable insights into addressing complex coding challenges while integrating sustainability principles. This academic reflection delves into the coding-specific obstacles we encountered, the inventive solutions we crafted, and the profound takeaways from the experience, while also considering the project's broader context and objectives.

In my internship report, I reflect on my experiences with the CV-Builder project, where I faced coding challenges head-on while striving to infuse sustainability principles into our work. These challenges included managing complex asynchronous operations, optimizing website performance, and working on a custom development journey without relying on templates. Through relentless effort and creativity, my team and I found solutions that not only enhanced the user experience but also reduced energy consumption,

aligning with sustainability goals.

My internship experience reaffirmed the value of collaborative problem-solving and knowledge sharing. It was inspiring to witness how our collective efforts expedited solutions and enriched our skill set. This journey taught me that coding resilience and efficiency are paramount, and that efficient code not only benefits users but also contributes to a smaller carbon footprint. Overall, this report encapsulates my growth and the profound lessons I've learned during

my time with the CV-Builder project.

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Resume Builder

By

Tamima Sigma

Student ID: **1630436**

Summer, 2023

The student modified the internship final report as per the recommendation made by his or her academic supervisor and/or panel members during final viva, and the department can use this version for achieving.

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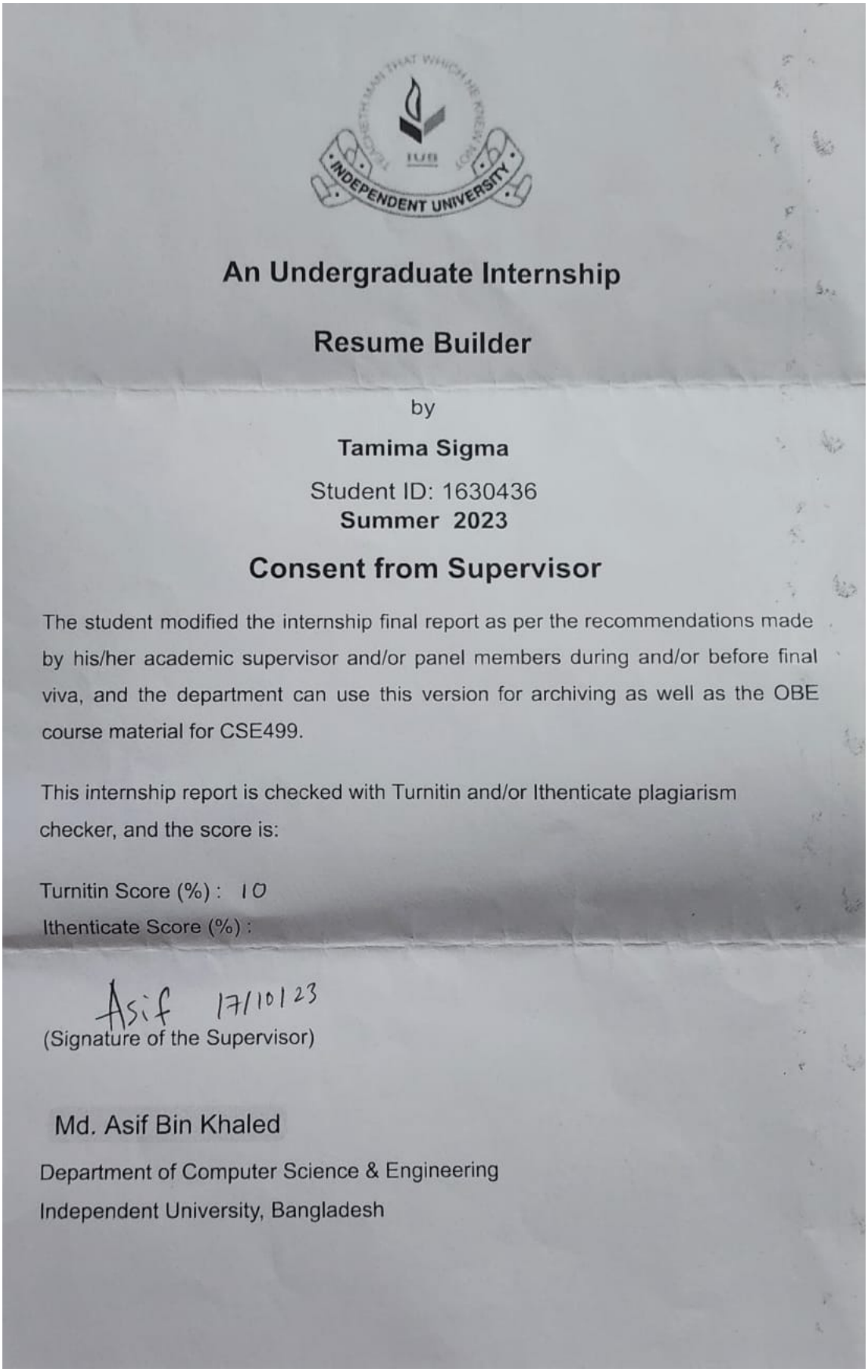

An Undergraduate Internship

Resume Builder

by

Tamima Sigma

Student ID: 1630436

Summer 2023

Consent from Supervisor

The student modified the internship final report as per the recommendations made by his/her academic supervisor and/or panel members during and/or before final viva, and the department can use this version for archiving as well as the OBE course material for CSE499.

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Figure 9.1: Consent Paper