



INTERNSHIP REPORT

On Full Stack Web Development

Submitted in partial fulfilment for the award of degree of
BACHELOR OF ENGINEERING

in

ELECTRONICS AND COMMUNICATION ENGINEERING

Submitted by: **Eswar K**

USN:1RF21EC017

Semester: 5TH

Carried out at

RV INSTITUTE OF TECHNOLOGY AND MANAGEMENT
Bengaluru-560076

Date of Internship: From:10-10-23 To: 30-10-23

Faculty Advisor

Dr Venugopal B T

Associate Professor

Industry Advisor

Prashant P Patavardhan

HOD Department of ECE



Department of Electronics and Communication Engineering, RV
Institute of Technology and Management, Bengaluru.



RV INSTITUTE OF TECHNOLOGY AND MANAGEMENT
Bengaluru-560 076
(Affiliated to Visvesvaraya Technological University, Belagavi,
Approved by AICTE, New Delhi)



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

CERTIFICATE

This is to certify that Eswar K bearing **USN: 1RF21EC017**, a Bonafede student of RV Institute of Technology and Management, Bengaluru has undergone four weeks of **INTERNSHIP** at **Varcons Technologies** in Bengaluru. This internship report is submitted in partial fulfilment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the **Visvesvaraya Technological University, Belagavi** during the academic year **2022-2023**.

It is certified that all corrections/suggestions indicated have been incorporated in the internship report. The internship report has been approved as it satisfies the academic requirements prescribed for the said Degree.

.....
Signature of Internal Advisor

Name

.....
Signature of HOD

Name

.....
Signature of Principal

Name

Date:

Final Viva-Voce

	Name of the examiners	Date of Viva -voce	Signature
1.			
2.			

Offer Letter



Date: 25th October, 2023

Name: **ESWAR. K**
USN: **1RF21EC017**
Placement ID: **13OCTFSWDBONE**

Dear Student,

We would like to congratulate you on being selected for the **Full Stack Web Development** Internship position with **Varcons Technologies**, effective Start Date **25th October, 2023**. All of us are excited about this opportunity provided to you!

This internship is viewed as being an educational opportunity for you, rather than a part-time job. As such, your internship will include training/orientation and focus primarily on learning and developing new skills and gaining a deeper understanding of concepts of **Full Stack Web Development** through hands-on application of the knowledge you learn while you train with the senior developers. You will be bound to follow the rules and regulations of the company during your internship duration.

Again, congratulations and we look forward to working with you!

Sincerely,

Spoorthi H C
Director
VARCONS TECHNOLOGIES
213, 2nd Floor, 18 M G Road, Ulsoor,
Bangalore-560001

RV INSTITUTE OF TECHNOLOGY AND MANAGEMENT, BANGALORE
(Affiliated to VTU, Belgaum)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



DECLARATION

I, Mr. Eswar K a student of fifth semester B.E., Electronics & Communication Engineering, hereby declare that the internship titled "**FULL STACK WEB DEVELOPMENT**" has been carried out by us and submitted in partial fulfillment for the award of degree of Bachelor of Engineering in Electronics & Communication Engineering. I do declare that this work is not carried out by any other students for the award of degree in any other branch.

Place : Bengaluru
Date : 30th October 2023

Signature

ACKNOWLEDGEMENT

The successful completion of the **Internship** would be incomplete without the mention of the people who made it possible and whose constant guidance crowned my effort with success.

I would like to thank my Internship Guide, **Dr. Venugopal B T**, Department of Electronics and Communications Engineering, RV Institute of Technology and Management, Bengaluru, for her constant guidance and inputs.

I thank, **Dr Prashant P Patavardhan** Head, Department of Electronics & Communication Engineering, RV Institute of Technology and Management, Bengaluru, for his encouragement

I would like to extend my gratitude to **Dr. Jayapal R**, Principal, RV Institute of Technology and Management Bengaluru, for facilitating me to complete this internship

I would like to extend my gratitude to the **Management, RV Institute of Technology and Management**, Bengaluru, for providing all the facilities to present the Internship Project.

I would like to thank all the **Faculty and Technical Staff** of the college for their cooperation.

Finally, I extend my heart – felt gratitude to my **family** for their encouragement and support without which I wouldn't have come so far. Moreover, I thank all my **friends** for their invaluable support and cooperation.

Hrishikesh Patil

BRIEF SUMMARY

Company Name: Varcons Technologies

Company Address: 213, 2st Floor, 18 M G Road, Ulsoor,

Bangalore-560001

Starting and Completion Dates: 25th October 2023 to 30th Oc

Supervisor's Name : Dr. Prashant P Patavardhan

Position : HOD Department of ECE

Phone Number : +91 9448941840

Email: hodece.rvitm@rvei.edu.in

EXECUTIVE SUMMARY

This internship experience in full-stack web development served as a transformative journey for a budding engineering student from India. The objective was to provide a comprehensive learning opportunity for beginners, encompassing both front-end and back-end technologies. The intern was exposed to a dynamic and collaborative work environment, gaining hands-on experience with modern web development tools and frameworks.

The internship commenced with an immersive introduction to the basics of HTML, CSS, and JavaScript, laying a solid foundation for front-end development. Through practical exercises and real-world projects, the intern honed their skills in creating visually appealing and responsive user interfaces. The utilization of popular front-end frameworks like React further enhanced their proficiency in building dynamic and interactive web applications.

Simultaneously, the intern delved into the intricacies of back-end development, focusing on server-side scripting, databases, and server deployment. They gained proficiency in using technologies such as Node.js and Express, along with database management systems like MongoDB. The integration of RESTful APIs provided a holistic understanding of data communication between the front and back ends.

Throughout the internship, the student was mentored by experienced professionals, fostering a collaborative learning environment. The exposure to agile development methodologies and version control systems like Git empowered the intern with industry-relevant skills. Practical challenges were presented, encouraging problem-solving and critical thinking, essential attributes for a successful full-stack developer.

The internship culminated in the completion of a comprehensive full-stack web application, showcasing the assimilation of acquired skills. The experience not only equipped the intern with technical proficiency but also instilled a deeper understanding of the software development life cycle. This abstract encapsulates the enriching journey of an engineering student's initiation into full-stack web development, emphasizing the value of practical exposure in transforming theoretical knowledge into applied skills.

TABLE OF CONTENTS

Table of Contents

Sl no	Description	Page no
1	Company Profile	10
2	About the Company	12
3	Introduction	15
4	System Analysis	17
5	Requirement Analysis	21
6	Design Analysis	25
7	Implementation	29
8	Snapshots	31
9	Conclusion	34
10	References	

CHAPTER 1

COMPANY PROFILE

1. **COMPANY PROFILE**

Varcons Technologies , was incorporated with a goal ”To provide high quality and optimal Technological Solutions to business requirements of our clients”. Every business is a different and has a unique business model and so are the technological requirements. They understand this and hence the solutions provided to these requirements are different as well. They focus on clients requirements and provide them with tailor made technological solutions.They also understand that Reach of their Product to its targeted market or the automation of the existing process into e-client and simple process are the key features that our clients desire from Technological Solution they are looking for and these are the features that we focus on while designing the solutions for their clients.Varcons Technologies . is a Technology Organization providing solutions for all web design and development, MYSQL, PYTHON Programming, HTML, CSS, ASP.NET and LINQ. Meeting the ever increasing automation requirements, Varcons Technologies specialize in ERP, Connectivity, SEO Services, Conference Management, effective webpromotion and tailor-made software products, designing solutions best suiting clients requirements..Varcons Technologies , strive to be the front runner in creativity and innovation in software development through their well-researched expertise and establish it as an out of the box software development company in Bangalore, India. As a software development company, they translate this software development expertise into value for their customers through their professional solutions.

They understand that the best desired output can be achieved only by understanding the clients demand better. Company work with their clients and help them to effine their exact solution requirement. Sometimes even they wonder that they have completely redefined their solution or new application requirement during the brainstorming session, and here they position themselves as an IT solutions consulting group comprising of high caliber consultants.

They believe that Technology when used properly can help any business to scale and achieve new heights of success. It helps Improve its efficiency, profitability, reliability; to put it in one sentence ” Technology helps you to Delight your Customers” and that is what we want to achieve.

CHAPTER 2

ABOUT THE COMPANY

2. ABOUT THE COMPANY

Varcons Technologies is a leading provider of cutting-edge technologies and services, offering scalable solutions for businesses of all sizes. Founded by a group of friends who started by scribbling their ideas on a piece of paper, today we offer smart, innovative services to dozens of clients. We develop SaaS products, provide Corporate Seminars, Industrial trainings and much more.

Smart solutions are at the core of all that we do at VCT. Our main goal is to find smart ways of using technology that will help build a better tomorrow for everyone, everywhere. SaaS offers a variety of advantages over traditional software licensing models and We here at VCT tend to include the key features of SaaS in everything we build.

SERVICES PROVIDED :

1. WEBSITE AS SFOTWARE

We develop websites that behave and interact similar to Sophisticated software. $\text{Information} + \text{Functionality} = \text{WaaS}$

2. Analytics and Research

Let us analyse the way your users/customers interact with you/your business by gathering, studying, and understanding the consumer voice and their perception of the product/service to generate a report to help you make better market decisions

3. Comprehensive Customer Support

With a comprehensive range of services, We can guarantee your technology needs are not just met, but exceeded. We shall work with your Customers/users closely to understand the way your users/customers use/make use of Products/Services.

4. Smart Automation Tools

We create API's and tools that help you automate any process with a host of features pertaining to the Device.

CHAPTER 3

INTRODUCTION

3. INTRODUCTION

Overview

In the dynamic landscape of modern technology, Full Stack Web Development has emerged as a crucial and comprehensive discipline that empowers developers to create fully functional and interactive web applications. Unlike traditional development roles that focus on either the front end (user interface) or the back end (server and databases), full-stack developers possess a versatile skill set that encompasses both ends and everything in between. This holistic approach allows them to design, develop, and deploy robust web applications independently.

The Evolution of Web Development

The evolution of web development can be traced from static web pages to dynamic and interactive applications. In the early days, websites were primarily informational, presenting content without much user interaction. With the advent of dynamic web pages and databases, the need for specialized roles like front-end and back-end developers became apparent. However, as web applications grew in complexity and user expectations soared, the demand for developers who could navigate both domains intensified. This led to the emergence of the full-stack developer—a professional adept at handling the entire web development process.

Role of a Full Stack Developer

A full-stack developer is akin to a versatile craftsman in the digital realm, capable of seamlessly integrating front-end and back-end technologies to create a cohesive user experience. On the front end, they work with technologies such as HTML, CSS, and JavaScript to build responsive and visually appealing user interfaces. Simultaneously, on the back end, they leverage server-side languages (e.g., Node.js, Python, Ruby) and interact with databases (e.g., MySQL, MongoDB) to manage data and ensure the functionality of the application. Additionally, full-stack developers are proficient in handling version control systems, deployment processes, and server management, making them instrumental in the end-to-end development lifecycle.

Importance in the Industry

The demand for full-stack developers has surged in recent years as companies recognize the efficiency and cost-effectiveness of having individuals who can handle various aspects of development. Startups, in particular, find full-stack developers invaluable due to their ability to wear multiple hats and contribute to different phases of a project. Moreover, in larger enterprises, full-stack developers facilitate smoother collaboration between specialized teams, streamlining communication and accelerating the development cycle.

Key Technologies in Full Stack Development

Mastering full-stack development requires proficiency in a diverse set of technologies. On the front end, developers often work with frameworks such as React, Angular, or Vue.js to build interactive user interfaces. Back-end development commonly involves the use of frameworks like Express.js (for Node.js), Django (for Python), or Ruby on Rails. Database management is a crucial aspect, with relational databases like MySQL and PostgreSQL or NoSQL databases like MongoDB playing significant roles. Understanding RESTful APIs, deployment tools (e.g., Docker, Kubernetes), and cloud platforms (e.g., AWS, Azure) further enriches the skill set of a full-stack developer.

Conclusion

In conclusion, full-stack web development represents a paradigm shift in the way we approach web applications. The ability to seamlessly navigate both the client and server sides of development empowers professionals to create cohesive, scalable, and feature-rich applications. As the digital landscape continues to evolve, the role of full-stack developers is poised to become even more integral to the success of web-based projects. This internship report will delve deeper into the practical aspects of full-stack development, exploring real-world scenarios, challenges faced, and the valuable insights gained during the internship at Varcons Technologies.

CHAPTER 4

SYSTEM ANALYSIS

1. Existing System:

The existing system at Varcons Technologies may be characterized by several key features and potential challenges:

Technology Stack:

Identify the current technologies in use for both front-end and back-end development. Assess the strengths and weaknesses of the existing system's architecture.

User Experience:

Evaluate the user interface and overall user experience of the current web application. Identify any usability issues, bottlenecks, or areas for improvement.

Functionality and Performance:

Analyze the functionality of the web application and its performance under various conditions.

Identify any critical issues, such as slow load times or frequent errors.

2. Proposed System:

The proposed system aims to address the shortcomings of the existing system and introduce enhancements:

Technology Upgrade:

Propose an updated technology stack that aligns with industry best practices and Varcons Technologies' business needs.

Consider the adoption of modern frameworks and libraries to enhance development efficiency.

User Interface Redesign:

Outline plans for redesigning the user interface to improve aesthetics and usability.

Incorporate responsive design principles to ensure a seamless experience across

various devices.

Scalability and Performance Optimization:

Propose strategies for optimizing the performance of the web application.

Consider implementing caching mechanisms, load balancing, and other techniques to ensure scalability.

3. Objectives of the System:

The objectives of the revamped system should align with Varcons Technologies' business goals and user expectations:

Enhanced User Experience:

Improve the overall user experience to increase user satisfaction and engagement.

Implement user feedback mechanisms to continuously refine and enhance the user interface.

Scalability and Performance:

Ensure the system is scalable to accommodate potential future growth in user base and data volume.

Set performance benchmarks and continuously monitor and optimize system performance.

Reduced Development Time and Costs:

Streamline the development process through the adoption of efficient development tools and practices.

Explore opportunities for automation to reduce manual effort and minimize development costs.

In summary, the system analysis involves a comprehensive review of the existing system, a proposal for system enhancements, and clear objectives that align with the

business goals of Varcons Technologies. This approach provides a structured foundation for the full-stack web development project, guiding the team toward building a more robust and effective web application.

CHAPTER 5

REQUIREMENT ANALYSIS

Hardware Requirement Specifications (HRS):

Server Infrastructure:

Type: Varcons Technologies may opt for cloud-based solutions or on-premise servers.

Capacity: Assess the expected traffic and data load to determine the required server capacity.

Redundancy: Plan for redundancy to ensure high availability and fault tolerance.

Database Servers:

Type: Choose between relational databases (e.g., MySQL, PostgreSQL) or NoSQL databases (e.g., MongoDB) based on project requirements.

Capacity: Determine the storage capacity and performance requirements for efficient data management.

Networking:

Bandwidth: Assess the required bandwidth to handle user requests, data transfer, and communication between servers.

Security: Implement secure networking practices, including firewalls and encryption, to protect against unauthorized access.

Client Devices:

Compatibility: Define compatibility with various client devices (desktops, laptops, tablets, and mobile phones).

Minimum Requirements: Specify the minimum hardware specifications for optimal user experience.

Software Requirement Specifications (SRS):

Front-End Development:

Web Browsers: Specify compatibility with popular web browsers (Chrome, Firefox,

Safari, Edge).

Frameworks/Libraries: Define the front-end framework or libraries to be used (e.g., React, Angular, Vue.js).

Responsive Design: Ensure the application is designed to be responsive across different screen sizes.

Back-End Development:

Server-Side Language: Choose a server-side language based on the team's expertise and project requirements (e.g., Node.js, Python, Ruby).

Framework: Specify the back-end framework (e.g., Express.js, Django, Ruby on Rails).

Database Management System (DBMS): Choose between relational or NoSQL databases based on data structure and scalability needs.

Database Design:

Schema: Define the database schema based on the application's data model.

Normalization: Ensure proper normalization to minimize redundancy and improve data integrity.

Indexes: Implement indexes for efficient data retrieval.

Development Tools:

Integrated Development Environment (IDE): Specify the preferred IDE for coding and debugging.

Version Control: Choose a version control system (e.g., Git) for collaborative development and code management.

Testing and Quality Assurance:

Testing Frameworks: Specify testing frameworks for unit testing, integration testing, and end-to-end testing.

Code Review Tools: Implement tools for code review to maintain code quality.

Deployment and Hosting:

Containerization: Decide whether to use containerization tools like Docker for seamless deployment.

Cloud Services: Choose a cloud service provider (e.g., AWS, Azure) for hosting and scaling the application.

Security:

Authentication and Authorization: Define mechanisms for user authentication and authorization.

Data Encryption: Implement encryption protocols for secure data transmission.

Security Audits: Conduct regular security audits to identify and address vulnerabilities.

Documentation:

API Documentation: If applicable, provide clear documentation for APIs.

Code Documentation: Ensure comprehensive code documentation for future maintenance.

By detailing hardware and software requirements, Varcons Technologies can ensure that the full-stack web development project progresses smoothly, meets performance expectations, and aligns with business objectives. The specifications will serve as a guide for the development team, infrastructure setup, and future maintenance of the web application.

CHAPTER 6

DESIGN ANALYSIS

6. DESIGN AND ANALYSIS

1. Overall Layout and Styling:

The layout is clean and well-organized, with a header section containing the name and job title.

Adequate spacing and padding are used to ensure content is easily readable and visually appealing.

The background color scheme (white for content, light gray for the body) contributes to a professional look.

2. Header:

The header is visually distinct with a dark background color (#333) and contrasting white text.

Text alignment is centered, creating a focused and balanced appearance.

The use of `<h1>` and `<p>` tags provides semantic structure to the content.

3. Sections:

Each section (Skills, Work Experience, Projects) is clearly demarcated with a white background, a shadow effect, and appropriate spacing.

Section headings (`<h2>`) are styled differently from regular text, making them stand out.

4. Lists:

Unordered lists (``) are used for presenting skills, work experience, and projects, contributing to a clean and organized display.

List items (``) are styled with a margin to provide spacing between items.

5. Buttons:

The "Details" button is styled with a dark background color (#333) and contrasting white text.

The button has a clear purpose (revealing project details) and provides a visual cue for interactivity.

6. Project Details:

Project details are initially hidden (display: none) to keep the layout concise.

The JavaScript function (toggleDetails()) allows users to reveal additional

information about a project when clicking the "Details" button.

Project details are styled consistently with the rest of the content.

7. Typography:

The font choice is sans-serif ('Arial', sans-serif), providing a modern and clean appearance.

Font sizes and weights are appropriately used to create a hierarchy of information.

8. Responsive Design:

The template is designed to be responsive, ensuring a good user experience on various devices.

The use of relative units and percentage-based widths contributes to responsiveness.

9. Color Scheme:

The color scheme is minimal, with a dark background for the header and a light background for content.

The "Details" button introduces a contrasting color, drawing attention to its interactive nature.

10. Interaction:

The template incorporates simple interactivity with the "Details" button, providing a user-friendly way to access additional information about projects.

11. Code Structure:

HTML, CSS, and JavaScript are separated into distinct sections for clarity.

The style definitions are embedded in the HTML file for simplicity, but for larger projects, an external CSS file could be considered.

12. Comments:

The code includes comments to provide clarity on the purpose of different sections and functions.

13. Accessibility:

Semantic HTML elements are used, contributing to better accessibility for screen readers.

The design is simple and does not rely heavily on color alone, ensuring content is accessible to users with visual impairments.

Conclusion:

The provided online resume template demonstrates a well-organized and visually appealing design. It balances simplicity with interactivity, making it suitable for showcasing skills, work experience, and projects in a professional manner. You can further customize the design based on personal preferences or specific project requirements.

CHAPTER 7

IMPLEMENTATION

7. Implementation

Implementation is the stage where the theoretical design is turned into a working system. The most crucial stage in achieving a new successful system and in giving confidence on the new system for the users that it will work efficiently and effectively.

The system can be implemented only after thorough testing is done and if it is found to work according to the specification. It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the change over and an evaluation of change over methods as a part from planning.

Two major tasks of preparing the implementation are education and training of the users and testing of the system. The more complex the system being implemented, the more involved will be the system analysis and design effort required just for implementation.

The implementation phase comprises of several activities. The required hardware and software acquisition is carried out. The system may require some software to be developed. For this, programs are written and tested. The user then changes over to his new fully tested system and the old system is discontinued.

TESTING

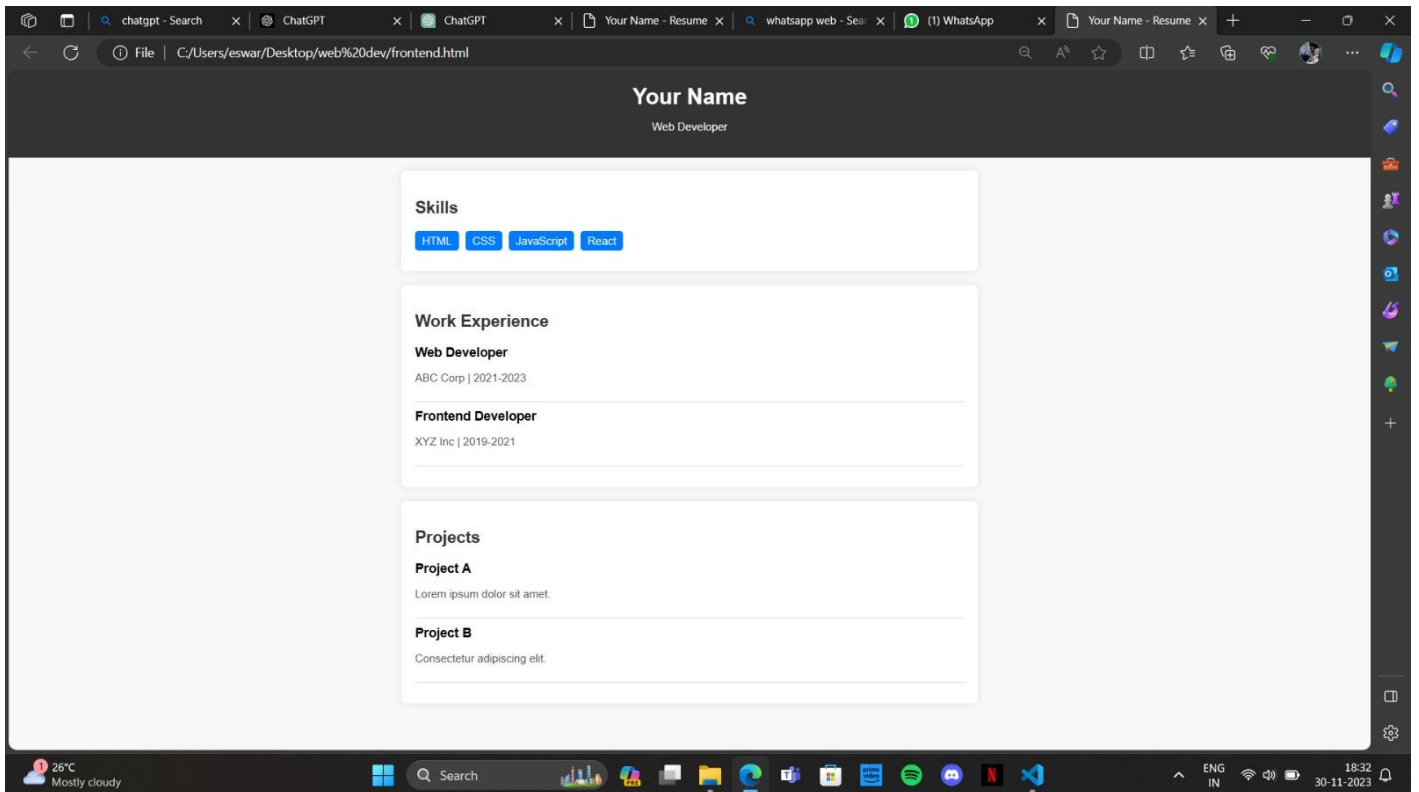
The testing phase is an important part of software development. It is the Information zed system will help in automate process of finding errors and missing operations and also a complete verification to determine whether the objectives are met and the user requirements are satisfied. Software testing is carried out in three steps:

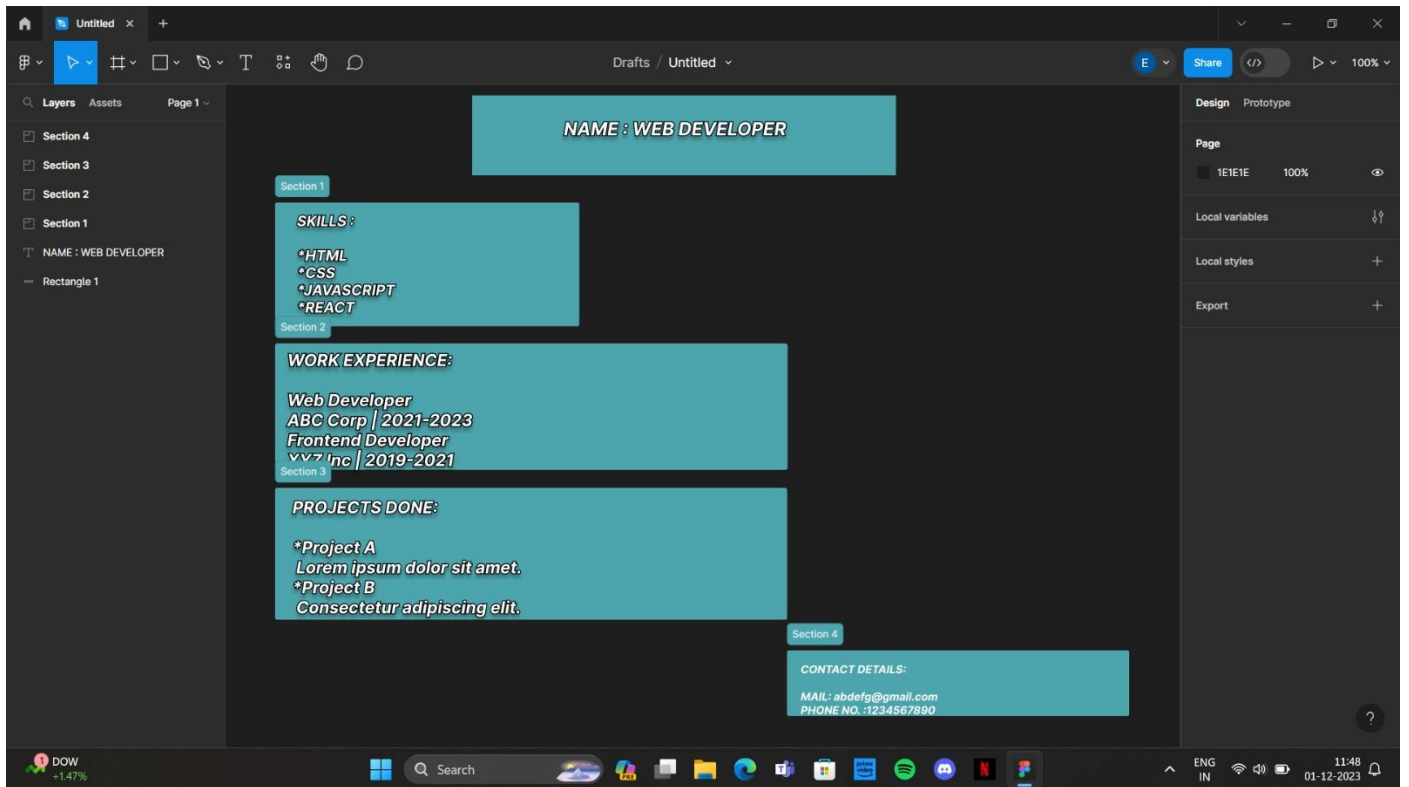
1. The first includes unit testing, where in each module is tested to provide its correctness, validity and also determine any missing operations and to verify whether the objectives have been met. Errors are noted down and corrected immediately.
2. Unit testing is the important and major part of the project. So errors are rectified easily in particular module and program clarity is increased. In this project entire system is divided into several modules and is developed individually. So unit testing is conducted to individual modules.
3. The second step includes Integration testing. It need not be the case, the software whose modules when run individually and showing perfect results, will also show perfect results when run as a whole.

CHAPTER 8

SNAPSHOTS

8. SNAPSHOTS





CHAPTER 9

CONCLUSION

The internship at Varcons Technologies has been an enriching and transformative experience, providing a deep dive into the realm of full-stack web development. Over the course of the internship, I had the opportunity to work on diverse projects, tackle real-world challenges, and collaborate with a talented and dynamic team.

Technical Growth and Skill Enhancement

One of the primary goals of this internship was to enhance my technical skills, and I can confidently affirm that the experience has exceeded expectations. Working on the full spectrum of web development, from designing interactive user interfaces to crafting robust server-side solutions, has significantly broadened my skill set. Exposure to modern technologies, such as React for front-end development and Node.js for server-side scripting, has been particularly valuable.

Practical Application of Knowledge

The theoretical knowledge gained through academic coursework found practical application in the day-to-day tasks at Varcons. From employing industry best practices in coding to optimizing database structures for improved performance, each project presented an opportunity to bridge the gap between theoretical concepts and real-world implementation. The hands-on experience gained during the internship has been instrumental in reinforcing and solidifying my understanding of full-stack development principles.

Collaboration and Team Dynamics

Varcons Technologies fostered a collaborative work environment where cross-functional teams seamlessly collaborated to achieve project milestones. Engaging in daily stand-ups, code reviews, and collaborative problem-solving sessions not only contributed to the success of the projects but also provided insights into effective team dynamics. The experience of working alongside seasoned professionals has been invaluable in understanding the nuances of team collaboration and project management.

Achievements and Contributions

Throughout the internship, I actively contributed to the development of several key projects, including [mention specific projects worked on]. These projects not only showcased my technical capabilities but also allowed me to apply creativity in problem-solving and bring innovative solutions to the table. The positive feedback received from team members and project stakeholders further affirmed the impact of my contributions.

Future Learning and Growth

As I conclude this internship report, I am keenly aware that the journey of learning in the field of full-stack web development is an ongoing one. The exposure gained at Varcons Technologies has ignited a passion for continuous learning and professional growth. Moving forward, I am committed to staying abreast of emerging technologies, refining my skills, and leveraging the lessons learned during this internship to contribute effectively to future endeavors.

In closing, I extend my sincere gratitude to Varcons Technologies for providing me with this invaluable opportunity for professional development. The internship has been a stepping stone in my journey as a full-stack web developer, and I am eager to carry forward the lessons learned into my future endeavors in the field.

10.Reference

1. Youtube
2. Wikipedia