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DEPARMENT OF COMPUTER SCIENCE

MLSA FULL STACK DEVELOPMENT INTERNSHIP REPORT

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Introduction

My name is **Harsh Chandra Srivastava**, and I am currently pursuing a Bachelor's Degree in **Computer Science**. Currently I am in my **2nd Year** and Section **B**. As a passionate learner in the field of web development, I have always been keen to explore both frontend and backend technologies to build dynamic and user-friendly web applications.

During my academic journey, I have been actively involved in various projects, and learning experiences that have helped me develop a solid foundation in programming and web development frameworks.

Most recently, I had the opportunity to participate in a MLSA Full-stack Web Development Internship, which allowed me to gain hands-on experience in building full-stack applications and integrating cloud technologies.

The following report provides a detailed account of my learnings and accomplishments during the internship, highlighting the technical skills I developed and the projects I successfully completed. Through this internship, I have strengthened my expertise in key technologies like HTML, CSS, JavaScript, React, Node.js, MongoDB, and Azure, preparing me to take on more complex projects in the future.

What I Learned?

Frontend Development

I honed my skills in essential web technologies such as HTML, CSS, and JavaScript, all of which are fundamental to building responsive and interactive web interfaces. I learned to:

- Design layouts that adapt seamlessly to various screen sizes, ensuring compatibility with different devices.
- Utilize CSS for styling web pages, improving both visual appeal and usability.
- Apply JavaScript for enhancing interactivity, such as handling user inputs, manipulating DOM elements, and updating content dynamically.

Through this internship, I also got the opportunity to work with React, a JavaScript library that simplifies the process of building complex user interfaces by breaking them down into reusable components. React allowed me to:

- Manage state efficiently using hooks.
- Work with component-based architecture, making the development process more modular and scalable.
- Integrate external APIs to fetch and display data dynamically.

Backend Development

On the server side, I learned to implement backend logic using Node.js. This included handling requests, routing, and creating server-side APIs to manage communication between the frontend and backend. I also explored how to manage databases using MongoDB, including structuring and querying databases effectively.

Cloud Integration with Azure

As part of the internship, I also learned how to use Azure, Microsoft's cloud computing platform. I gained hands-on experience in deploying web applications and utilizing Azure's services for scalable and secure cloud-based solutions. This exposure added another dimension to my skill set, making me more versatile in full-stack development.

What I Learned?

Project Work

The internship required completing 60 hours of project work, where I applied the concepts and technologies learned in a practical setting. I undertook two key projects:

- Simple Recipe Website (Easy-Level Project): I built a recipe website using HTML and CSS, focusing on creating a clean and responsive layout. The project helped me practice the principles of responsive design and user-centric UI development.
- Weather App (Intermediate-Level Project): This project involved building a weather application that fetches data from an external API. I implemented real-time weather updates for different locations using JavaScript and handled API integration effectively. This project was more complex as it required managing asynchronous API calls and displaying dynamic data based on user input.

Learning Modules and Microsoft Badges

I completed 40 hours of pre-defined learning modules from the Microsoft Learn platform. The modules were designed to cover essential topics in full-stack development, such as:

- Frontend and backend frameworks.
- Cloud integration and deployment.
- Database management and security.

Throughout the learning process, I earned Microsoft Badges, which serve as proof of my achievements. These badges reflect my successful completion of various learning modules and the acquisition of important technical skills.

Conclusion

The Full-stack Web Development Internship was an incredibly rewarding experience. I gained hands-on experience in both frontend and backend development, learned how to deploy applications in cloud environments using Azure, and successfully completed two projects that demonstrated my growing expertise. The internship not only improved my technical abilities but also helped me understand how to tackle real-world challenges in full-stack development.
By completing both easy- and intermediate-level projects, I had the opportunity to apply my knowledge in practical scenarios. I feel well-prepared to take on more advanced projects in the future, leveraging the skills I've learned throughout this program. This internship has been instrumental in my growth as a full-stack developer, and I am excited to continue exploring the field with confidence and creativity.

Sources & Tools

- MLSA Internship Module
- MDN Docs
- openweathermap.org (API)
- Canva