DAYANANDA SAGAR UNIVERSITY

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SCHOOL OF ENGINEERING

An Internship Report on

JAVA WEB DEVELOPMENT INTERN

Submitted in Partial fulfillment for award of degree in

Bachelor of Technology
in
COMPUTER SCIENCE AND ENGINEERING

Submitted by

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ENG20CS0414

Internship carried out at
Ai Bricks Technologies

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING,
SCHOOL OF ENGINEERING
DAYANANDA SAGAR UNIVERSITY,

(2023-2024)

DAYANANDA SAGAR UNIVERSITY

SCHOOL OF ENGINEERING

Department of Computer Science & Engineering
Kudlu Gate, Bangalore –560068
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CERTIFICATE

This is to certify that the Internship report, entitled "Java Web Development Intern", **Vivek Belagali** (**ENG20CS0414)**, a bonafide student of Bachelor of Technology in Computer Science and Engineering at the School of Engineering, Dayananda Sagar University, Bangalore in partial fulfillment of the requirement for the VIII during the academic year 2023-24. It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report. The Internship report has been approved as it satisfies the academic requirements in respect of Internship prescribed for the VIII Semester.

Sumith Shah Team Lead Ai Bricks Technologies BTM Layout	**Prof. Pramoda R** Assistant Professor Dept of CS&E School of Engineering Dayananda Sagar University	**Dr. Girisha G S** Chairman CSE School of Engineering Dayananda Sagar University
Date:	**Date:**	**Date:**

Name of The Examiner **Signature of Examiner**

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DECLARATION

I, **VIVEK BELAGALI,** hereby declare that the Internship titled **"Java Web Development Intern"** embodied in this report has been carried out by me during VIII Semester B. Tech in **Computer Science and Engineering**, at School of Engineering, **Dayananda Sagar University**, submitted in partial fulfilment for the award of degree in **Bachelor of Technology in Computer Science and Engineering** during the academic year **2023-2024.** The work embodied in this report is original & it has not been submitted in part or full for any other degree in any University.

VIVEK
BELAGALI
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_____

Place : Bangalore
Date :

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VIVEK

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Abstract

This study presents the design and development of a web application titled "Photography" aimed at facilitating the process of hiring photographers for home ceremonies.

The application allows photographers to showcase their work by uploading images to a gallery after logging in with their credentials.

Users seeking photography services can browse through the gallery, review photographer profiles, and send requests to hire a specific photographer. An admin oversees the process, verifying the availability of photographers on requested dates.

Upon confirmation, the admin facilitates communication by providing the user with the photographer's contact details.

Through this platform, users can efficiently connect with photographers, streamlining the process of capturing cherished moments during home ceremonies.

CHAPTER 1

ABOUT THE ORGANISATION

1.1 Introduction

AiBricks Technologies is a leading IT Company that offers comprehensive IT solutions to businesses across different regions. We have IT expertise in software, website, and application (iOS & Android) development; UI/UX design; and digital marketing. We have ventured into healthcare, food services, travel & tourism, logistic & shipping, e-commerce, technology, manufacturing, and IT-enabled education service industries so far. We have a team of highly qualified IT professionals who work tirelessly to ensure delivers on its promises & commitments.

We deliver reliable software development with integrated and smart design, aiming to boost your business potential. We offer custom-made software development and digital transformation from idea to implementation. We partner with you in your digital transformation journey, and support you at every stage - from initial planning to delivery, and beyond.

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1.2 Vision

Our vision is to foster a greener, more sustainable urban environment by promoting terrace gardening as a viable and rewarding pursuit for city dwellers. We envision a future where rooftops and balconies are transformed into vibrant green spaces, teeming with life and biodiversity, enhancing the quality of life for residents and promoting ecological balance in urban areas.

1.3 Mission

Our mission to provide urban gardeners with the knowledge, tools, and support they need to succeed in terrace gardening through a Java web-based application is both commendable and essential. By leveraging technology, you aim to empower individuals to reconnect with nature, promote food security, and foster a sense of community and environmental stewardship. Through your platform, users will gain access to a wealth of information, including articles, guides, and tutorials on terrace gardening techniques and plant care. Additionally, integrated tools such as garden planners, plant databases, and weather trackers will aid users in planning and maintaining their gardens effectively. Moreover, by facilitating community building features like forums and chat rooms, your application will create a space for urban gardeners to connect, share experiences, and seek advice, thereby nurturing a supportive and collaborative community dedicated to terrace gardening. Through these efforts, your Java web-based application will play a crucial role in inspiring and enabling individuals to embrace terrace gardening as a sustainable and fulfilling endeavor

1.4 Team

Our organization is comprised of a dedicated team of professionals with expertise in web development, horticulture, and environmental sustainability. From software engineers and designers to gardening experts and community managers, each member of our team brings unique skills and perspectives to the table, united by a shared passion for promoting terrace gardening and sustainable living in urban environments.

From software engineers and designers who develop and maintain the web-based application to gardening experts who provide valuable insights and guidance on horticulture practices, every team member plays a vital role in achieving your goals. Additionally, community managers facilitate engagement and collaboration among users, fostering a vibrant and supportive community around terrace gardening. Together, this interdisciplinary team is committed to leveraging technology and horticultural knowledge to empower urban dwellers to reconnect with nature, enhance food security, and cultivate thriving green spaces on their terraces.

1.5 Services

Android/IOS: Smartphones are essential for the current generation as the digital revolution is expanding its reach and smartphones are one of the most innovative products ever. A mobile app can attract more customers and establish a strong connection with them. It is time for companies to adopt this change and incorporate mobile app in their business to enhance their business level. Mobile app development is a perfect profitable deal.

UI/UX Design: User interaction leads to conversion and conversion increases your revenue. We analyze your product and try adding our perspective to it that combines the latest technology, design and usability. AiBricks Technologies provides the best UI/UX solutions that suit the trends of today and the technology of tomorrow. Creating a design that enhances app engagement and user loyalty is the formula of successful user experience.

Cyber Threat: Protect your security with a powerful mix of leading, SaaS-based threat hunting, detection, response, and remediation capabilities, proven processes, and our skilled experts trained to prevent threats before they become attacks and respond to minimize business impact.

Digital Marketing: concepts are growing immensely among businesses, especially by the top digital marketing companies in every industry using the wide reach of digital methods. The task of Digital Marketing includes SEO, SEM, content marketing, Campaign ads and e-Commerce marketing

CRM Software Development: AiBricks Technologies, the leading CRM software development company in Bangalore, offers you reliable solutions for CRM software development. The key to boosting any business growth is building a trustworthy relationship with the customers. A healthy relationship with the customers can really elevate the business level and this is where CRM comes into play.

Chapter 2

ABOUT THE DEPARTMENT

2.1 Introduction

In this chapter, we delve into the department responsible for the development and maintenance of "GreenThumb: Your Terrace Gardening Companion." This department plays a crucial role in ensuring the success and effectiveness of the application by overseeing its design, implementation, and ongoing improvement.

2.2 Employee Experience Department

The Employee Experience Department is a multidisciplinary team comprised of software engineers, UX/UI designers, quality assurance specialists, and project managers. Together, they collaborate to develop and enhance the features and functionalities of "GreenThumb," with a primary focus on delivering an exceptional user experience.

The UI/UX department within your organization plays a crucial role in ensuring the success and effectiveness of the terrace gardening application. Their responsibilities span various key areas:

Designing User Interface and Experience: This involves creating intuitive and visually appealing interfaces that enhance the user experience. They consider factors such as usability, accessibility, and consistency across different devices to ensure that users can navigate the application seamlessly.

Backend Infrastructure and Database Architecture: This team is responsible for developing the backend infrastructure and database architecture that forms the foundation of the application. They ensure that the system is robust, scalable, and capable of handling the growing user base and data volume.

Feature Development and Enhancement: By staying abreast of user feedback and market trends, the team identifies opportunities to enhance the application's functionality. They collaborate with other departments to implement new features and improvements that address user needs and keep the application competitive in the market.

Testing and Quality Assurance: Prior to deployment, the UI/UX team conducts thorough testing and quality assurance to identify and rectify any bugs or issues. This ensures that the application delivers a seamless and error-free experience to users.

Performance Monitoring and Optimization: After deployment, the team continuously monitors the performance and usage metrics of the application. They use data-driven insights to optimize performance, improve user engagement, and enhance overall user satisfaction.

Through their combined efforts, the UI/UX department contributes significantly to the success of the terrace gardening application, ensuring that it remains user-friendly, reliable, and capable of meeting the evolving needs of urban gardeners.

2.3 Virtual Assistant Development Process

One of the key initiatives undertaken by the Employee Experience Department is the development of a virtual assistant feature within the "GreenThumb" application. This virtual assistant is designed to provide users with personalized recommendations, real-time assistance, and proactive notifications to support their terrace gardening journey

The development process for the virtual assistant involves several stages:

- Requirements Gathering: The team collaborates with stakeholders to identify user needs, preferences, and pain points that the virtual assistant can address.
- Design and Prototyping: UX/UI designers create wireframes and prototypes to visualize the virtual assistant's interface and interactions, ensuring a seamless and intuitive user experience.
- Development: Software engineers develop the backend logic and algorithms that power the virtual assistant's functionality, integrating it with the existing infrastructure of the application.
- Testing and Iteration: Quality assurance specialists conduct extensive testing to validate the virtual assistant's performance, accuracy, and reliability. Feedback from testing is used to refine and improve the feature before deployment.
- Deployment and Monitoring: The virtual assistant is deployed to production, and its performance is monitored closely to ensure it meets user expectations and delivers the intended benefits.

Chapter 3

INTERNSHIP DOMAIN

3.1 Introduction

In this chapter, we explore the internship domain within the context of "GreenThumb: Your Terrace Gardening Companion." The internship program offers students and aspiring professionals the opportunity to gain hands-on experience in software development, UX/UI design, quality assurance, and project management, while contributing to the development and enhancement of the application.

The internship program within the context of "GreenThumb: Your Terrace Gardening Companion" serves as a valuable platform for students and aspiring professionals to immerse themselves in various domains of technology and project management while making tangible contributions to the application's development. Through hands-on experience, interns have the opportunity to apply theoretical knowledge to real-world scenarios, gaining practical skills and insights that are invaluable for their future careers.

Whether they are involved in software development, UX/UI design, quality assurance, or project management, interns receive mentorship and guidance from experienced professionals, fostering a supportive learning environment that encourages growth and innovation.

3.2 Technologies Used

The internship domain encompasses a range of technologies and tools utilized in the development and maintenance of "GreenThumb." These technologies enable interns to acquire valuable skills and knowledge relevant to their respective roles within the project

3.2.1 Java

Java serves as the primary programming language for developing the backend logic and functionality of the "GreenThumb" application. Interns working in software development gain experience in Java programming, including object-oriented principles, data structures, and algorithms

3.2.2 Spring Framework

The Spring Framework is utilized for building the backend infrastructure of the application, providing features such as dependency injection, aspect-oriented programming, and transaction management. Interns working in software development learn to leverage the Spring Framework to create robust and scalable web applications.

3.2.3 HTML, CSS, Javascript

HTML, CSS, and JavaScript are fundamental technologies used in front-end development to create the user interface (UI) and user experience (UX) of the "GreenThumb" application. Interns working in UX/UI design gain hands-on experience in HTML for structuring web pages, CSS for styling and layout, and JavaScript for implementing interactive features and functionality.

3.2.4 React.js

React.js is a JavaScript library used for building user interfaces, particularly single-page applications. Interns working in front-end development may have the opportunity to learn and utilize React.js to create dynamic and responsive UI components within the "GreenThumb" application.

By gaining experience with these technologies, interns in the internship domain of "GreenThumb" acquire valuable skills and practical knowledge that prepare them for careers in software development, UX/UI design, and related fields. The internship program provides a supportive and collaborative environment where interns can learn, grow, and contribute to the success of the project

3.3 Tools Used

3.3.1 Blender 2.82

Blender 2.82 is an open-source 3D modeling and animation software used primarily in the creation of visual assets for the "GreenThumb" application. Interns working in UX/UI design may utilize Blender to design and render 3D models of plants, garden layouts, and other graphical elements, enhancing the visual appeal and realism of the application's interface

3.3.2 Sublime Text

Sublime Text is a sophisticated text editor widely used by interns and developers for writing code, scripts, and markup languages. Interns working in software development may leverage Sublime Text for writing and editing Java code, HTML, CSS, JavaScript, and other programming languages, benefiting from its powerful features such as syntax highlighting, auto-completion, and multiple selections.

3.3.3 Web Browser

Web browsers such as Google Chrome, Mozilla Firefox, and Safari are essential tools used for testing and debugging web applications. Interns working in quality assurance and software development utilize web browsers to test the functionality, compatibility, and performance of the "GreenThumb" application across different browsers and devices, ensuring a seamless user experience for all users.

3.3.4 Spyder

Spyder is an integrated development environment (IDE) specifically designed for scientific computing and data analysis in Python. Interns working on data analysis and algorithm development may use Spyder to write, debug, and execute Python scripts for tasks such as data processing, machine learning, and statistical analysis within the context of the "GreenThumb" application

These tools, among others, play a vital role in supporting interns within the internship domain of "GreenThumb," enabling them to collaborate effectively, develop their skills, and contribute to the success of the project

3.4 Testing

Testing is an integral part of the development process within the internship domain, encompassing various methodologies and techniques to verify and validate the functionality and quality of the "GreenThumb" application

3.4.1 Unit Testing

Unit testing involves testing individual components or units of code in isolation to ensure they function correctly and meet specified requirements. Interns working in software development perform unit testing using frameworks such as JUnit for Java, writing test cases to validate the behavior of methods, classes, and modules within the application. Unit tests help identify bugs and errors early in the development process, enabling rapid iteration and refinement of code.

3.4.2 System Testing

System testing System testing evaluates the overall functionality and behavior of the "GreenThumb" application as a whole, ensuring that all components work together seamlessly to achieve the desired outcomes. Interns working in quality assurance conduct system testing by simulating real-world usage scenarios, testing user interfaces, navigation flows, and integration points between different modules. System tests help validate the application's compliance with functional requirements and user expectations, identifying any inconsistencies or deficiencies that require resolution.

3.4.3 Performance Testing

Performance testing evaluates the responsiveness, scalability, and stability of the "GreenThumb" application under various load conditions. Interns working in quality assurance and software development conduct performance testing to measure factors such as response times, resource utilization, and throughput, identifying performance bottlenecks and optimizing the application's performance. Performance tests help ensure that the application can handle the expected workload and user traffic without degradation in performance or reliability.

Chapter 4

TASK PERFORMED

4.1 About the Project

In this section, we provide an overview of the tasks performed by interns within the internship domain of "GreenThumb: Your Terrace Gardening Companion." These tasks encompass a wide range of activities aimed at contributing to the development, enhancement, and maintenance of the application.

4.2 Internship Summary

As part of Interns participating in the internship program within the "GreenThumb" project engage in various tasks and responsibilities tailored to their areas of expertise and interests. The internship program offers a valuable opportunity for interns to apply their knowledge and skills in a real-world setting, collaborate with experienced professionals, and gain practical experience in software development, UX/UI design, quality assurance, and project management.

- Software Development: In the realm of software development, interns dive into writing, testing, and debugging code using Java, Spring Framework, and other pertinent technologies. They collaborate closely with experienced developers to implement new features, address enhancements, and rectify any encountered bugs. Through this hands-on experience, interns not only expand their coding proficiency but also gain insights into the intricacies of developing a robust and user-friendly application.

- UI Design: interns involved in UX/UI design undertake the creative process of conceptualizing and crafting the application's user interface. Utilizing tools like Adobe XD, Sketch, or Figma, they create wireframes, mockups, and prototypes, meticulously refining the interface based on user feedback.

- Quality assurance: forms a critical aspect of the internship, where interns meticulously plan, execute, and document test cases to validate the application's functionality, usability, and performance. They identify and report bugs or issues encountered during testing, ensuring that the application operates seamlessly and meets user expectations. Through this meticulous approach, interns contribute to delivering a high-quality product that delights users.

- Furthermore, interns participate in project management activities, supporting in the planning, scheduling, and coordination of project tasks. They track progress, communicate updates to stakeholders, and ensure the timely delivery of project milestones and objectives. By assisting in project management endeavors, interns gain valuable insights into project lifecycle management and develop essential communication and organizational skills. Overall

- the internship program provides interns with a holistic understanding of software development processes while equipping them with the skills and experience necessary for success in their future careers

- In addition to the core responsibilities within software development, UX/UI design, quality assurance, and project management, interns at "GreenThumb" have the opportunity to immerse themselves in a collaborative and innovative environment where creativity and problem-solving thrive. They actively contribute to brainstorming sessions, providing fresh perspectives and creative solutions to challenges encountered during the development and enhancement of the application. Through cross-functional collaboration, interns gain exposure to diverse aspects of the software development lifecycle, fostering a well-rounded skill set and a deeper understanding of the complexities involved in building and maintaining a successful application. This collaborative approach not only enriches the internship experience but also cultivates a culture of teamwork and innovation that drives the ongoing evolution of "GreenThumb" as a leading platform for terrace gardening enthusiasts

4.2.1 Reflection on Learning and Growth

One of the most significant reflections on learning and growth comes from the opportunity to apply theoretical knowledge to real-world scenarios. Interns gain practical experience by working on tasks relevant to their areas of expertise and interests, honing their skills and deepening their understanding of industry best practices. Whether it's writing code for new features, designing wireframes for the user interface, or executing test cases to ensure application functionality, interns are exposed to the complexities and challenges inherent in software development projects.

4.2.2 Key Takeaways

- Practical Application of Skills: Interns have the opportunity to apply their theoretical knowledge in a real-world setting, gaining hands-on experience in software development, UX/UI design, quality assurance, and project management.

- Collaborative Learning Environment: Collaboration with experienced professionals fosters mentorship and guidance, providing interns with insights into industry best practices and facilitating personal and professional growth.

- Continuous Learning and Improvement: The internship program encourages a culture of continuous learning and improvement, where interns are empowered to seek feedback, ask questions, and explore new technologies and approaches.

- Professional Development: Interns emerge from the program with enhanced skills, knowledge, and confidence, poised for success in their future careers in technology and sustainable living.

- Contribution to Meaningful Work: By contributing to the development, enhancement, and maintenance of the "GreenThumb" application, interns play a meaningful role in promoting terrace gardening and environmental stewardship in urban communities.

Chapter 5

INTERNSHIP OUTCOMES

5.1 Internship Outcomes

In this chapter, we examine the outcomes and conclusions of the internship program within the "GreenThumb: Your Terrace Gardening Companion" project. The internship program aims to provide interns with valuable learning experiences, practical skills, and professional growth opportunities, while also contributing to the development and enhancement of the application.

Internship outcomes encompass the achievements, learnings, and contributions of interns throughout their participation in the program. These outcomes reflect the impact of the internship experience on interns' personal and professional development, as well as the overall success of the project

5.1.1 Skills Enhancement

During my internship, I had the opportunity to enhance a wide range of technical and soft skills, including:

- Acquisition of Technical Skills: Interns gain practical experience and proficiency in programming languages, frameworks, tools, and methodologies relevant to their roles within the project, enhancing their technical skills and capabilities.
- Development of Soft Skills: Interns improve their communication, collaboration, problem-solving, and time management skills through interactions with team members, stakeholders, and project tasks, fostering their professional growth and effectiveness.
- Contribution to Project Goals: Interns actively contribute to the development, enhancement, and maintenance of the "GreenThumb" application, completing assigned tasks, delivering high-quality work, and making valuable contributions to project objectives.
- Personal Growth and Learning: Interns engage in continuous learning, reflection, and self-improvement, gaining insights, experiences, and lessons that contribute to their personal and professional development.

5.1.2 Contributions Made

Throughout the internship, I made significant contributions to various projects and initiatives, including:

- Software Development: Contributed to writing, testing, and debugging code for new features, enhancements, and bug fixes using Java, Spring Framework, and relevant technologies.
- UX/UI Design: Created wireframes, mockups, and prototypes to shape the user interface using tools like Adobe XD, Sketch, or Figma, incorporating user feedback to improve design.
- Quality Assurance: Planned, executed, and documented test cases to validate functionality, usability, and performance of the application, identifying and reporting bugs for resolution.
- Project Management: Assisted in project planning, scheduling, and coordination activities, tracked progress, and communicated updates to stakeholders for timely delivery of project milestones and objectives.

5.2 CONCLUSION

In conclusion, The internship program within the "GreenThumb" project concludes with a reflection on the outcomes, achievements, and experiences of interns, as well as the overall impact of the program on the project and its stakeholders. Interns have the opportunity to share their reflections, insights, and recommendations for future improvements, contributing to the continuous enhancement and refinement of the internship program and the project as a whole.

Overall, the internship program within the "GreenThumb" project serves as a valuable opportunity for interns to gain practical experience, develop essential skills, and contribute to meaningful projects in the field of technology and sustainability. By fostering a supportive and collaborative learning environment, the internship program aims to empower interns to achieve their goals, fulfill their potential, and make a positive impact in their careers and communities.

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