# An Internship Report

***On***

## Spring Web MVC

**CHAMELI DEVI GROUP OF INSTITUTIONS, INDORE**

**Submitted in partial fulfillment of the requirement for the Degree of**
**Bachelor of Technology**

**(SESSON 2023-2024)**


Submitted by:
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Submitted to:
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**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

# CHAMELI DEVI GROUP OF INSTITUTIONS, INDORE

## CERTIFICATE OF ORIGINALITY OF WORK

I Khsuhboo Parmar Enrollment No. 0832CS201067 Student of Computer Science & Engineering Branch VII Semester, have undergone the 2 week internship at Technosoft Informatics. I have worked on the Spring Web MVC technologie during my internship period.

Khushboo Parmar
0832CS201067
VII Semester

# CHAMELI DEVI GROUP OF INSTITUTIONS, INDORE


## CERTIFICATE

This is to certify that Mr./Ms. Khushboo Parmar of B.Tech (Computer Science & Engineering) Enrollment No. 0832CS201067 has completed/partially completed his/her Internship of 2 weeks from date 01/08/2023 to 18/08/2023 at Technosoft Informatics during the Academic Year 2023-2024 as partial fulfillment of the B.Tech (Computer Science & Engineering) course.

Training Coordinator

Head of the Department

## Attached Certificate

TechnoSoft Informatics

An ISO 9001:2008 Certified

This is to certify that KHUSHBOO PARMAR

has successfully completed a course on Spring web mvc Framework

at the TechnoSoft Informatics Training & Development Centre located at Indore.

From : 01/08/2023 To : 18/08/2023

Centre Manager

Faculty In charge

18/08/2023
Date of Issue

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# Declaration

I Khushboo Parmar, a student of B.Tech (Computer Science & Engineering) Enrollment No. 0832CS201067, hereby declare that the information presented in this Internship Report is a true and accurate reflection of my experiences and activities during my training period at Universal Informatics. All the content and observations in this report are a result of my genuine efforts and the knowledge acquired during my 40-day internship.

I take full responsibility for the accuracy of the information provided in this report. Any external sources referenced in this report have been duly acknowledged. I understand that any form of misrepresentation, plagiarism, or false information would be a breach of academic integrity and may result in disciplinary actions as per the policies of CHAMELI DEVI GROUP OF INSTITUTIONS, INDORE.

Signature: _____ Date: _____

Khushboo Parmar
0832CS201067

# Abstract

This report documents my comprehensive internship experience at Technosoft Informatics in Indore, where I delved into the world of Spring Web MVC. This immersive journey allowed me to explore web application development using the Java-based Spring framework, covering a wide spectrum of skills, from the foundational principles of data-driven decision-making to the transformation of raw data into actionable insights. Engaging with diverse modules significantly broadened my expertise in web application development. While I was introduced to new technologies and programming languages, the highlight of my internship was a deep dive into the Spring Web MVC framework, where I honed my abilities in configuration, controller mapping, and view resolution. This practical exposure served as a bridge connecting academic theory to real-world problem-solving, where I could apply my technical knowledge to overcome tangible challenges. In conclusion, my internship at Technosoft Informatics has been transformative, providing me with a robust foundation in Spring Web MVC and empowering me to make a meaningful contribution to web application development projects, leaving me with a deep sense of satisfaction and a strengthened skill set for my academic and professional journey.

## 3.1 Introduction/Learning Outcome

Spring Web MVC is a popular Java framework for building web applications. It follows the Model-View-Controller (MVC) pattern, separating an app into three parts: Model (data and logic), View (presentation), and Controller (request handling). Spring MVC simplifies web app development with features like annotation-based configuration, URL mapping, data binding, validation, and support for various view technologies. It's widely used for creating web apps and RESTful services, making it a versatile choice for Java developers.

**Project Overview:**

I created OnlineVoting, a dynamic web application designed to facilitate online voting for candidates, offering a convenient and accessible platform for participation. To achieve this, I harnessed the power of Java and the Spring framework to ensure scalability, flexibility, and efficient development.

**Hardware Components:**

In the context of a software-centric project like our online voting web application, the primary focus remains on software components. Hardware considerations, while critical for deployment, include server infrastructure, networking equipment, and client devices to ensure seamless performance, alongside any relevant security hardware to enhance the application's security measures

**Software Components:**

The user interface was crafted using Struts framework and HTML, providing an intuitive and user-friendly voting experience for users. To securely store and manage voting data, we integrated the robust MySQL database, ensuring the integrity and reliability of the voting process. This project encompasses a comprehensive solution for conducting online voting, combining the strength of Java, Spring, Struts, HTML, and MySQL to create a seamless and secure voting platform.

**Challenges Faced**

In the course of our project, we encountered several notable challenges. One of the central hurdles was ensuring the security of our online voting system. As the platform handled sensitive voting data, we had to implement stringent security measures, including data encryption and device authentication, to safeguard the integrity and confidentiality of the voting process. Additionally, scalability was another significant challenge we faced, as we needed to ensure that our platform could effectively accommodate a large number of concurrent users participating in the voting process while maintaining a responsive and seamless user experience. These challenges posed essential considerations in the successful development and deployment of our online voting web application.

**Conclusion:**

The project offered me a valuable opportunity to delve into the design and implementation of the Spring framework. Through this experience, I acquired a profound understanding of both the hardware and software elements crucial in the development of an IoT system. Additionally, I had the chance to confront and address the challenges associated with the implementation of such a system, enriching my knowledge and practical skills in this dynamic field.

## 3.2 Detail of Working Experience

### 3.2.1 Description of Technologies

In the context of my internship focused on the Spring MVC framework, it's crucial to emphasize the technologies that were relevant to this specific area of web application development. While Spring MVC is not typically associated with IoT, it's important to tailor the description of technologies to the context of your internship.

During my Spring MVC internship, the technologies that played a pivotal role in web application development included:

1. **Spring Framework Components:** Spring MVC relies on the Spring framework, which offers a wide array of tools and features for building web applications. This includes aspects like Inversion of Control (IoC) containers, aspect-oriented programming (AOP), and support for data access and transaction management.

2. **Web Development Technologies**: Spring MVC is closely aligned with web development technologies, where HTML, CSS, and JavaScript form the core building blocks for creating user interfaces and enhancing the user experience.

3. **Data Access Technologies**: Spring MVC often involves the integration of data access technologies such as JDBC, Hibernate, or JPA, allowing the application to interact with databases efficiently.

4. **Dependency Injection:** Dependency injection is a central concept in the Spring framework, ensuring loose coupling and flexibility in the codebase. It allows for the injection of objects and components into the application, simplifying development and maintenance.

5. **Security Frameworks:** In web application development, security is paramount. Technologies like Spring Security are frequently used in conjunction with Spring MVC to manage authentication and authorization, safeguarding the application and its data.

6. **View Technologies:** Spring MVC supports various view technologies, includingJSP, Thymeleaf, and FreeMarker, enabling developers to create dynamic and responsive user interfaces.

7. **RESTful Web Services:** In modern web development, RESTful APIs play a vital role. Spring MVC facilitates the creation of RESTful services, allowing for the seamless exchange of data between the client and server.

### 3.2.1 Description of Module/Tasks

During my internship, I had the privilege of working on the development of an online voting system, a project of paramount significance. The tasks and modules specific to this project included:

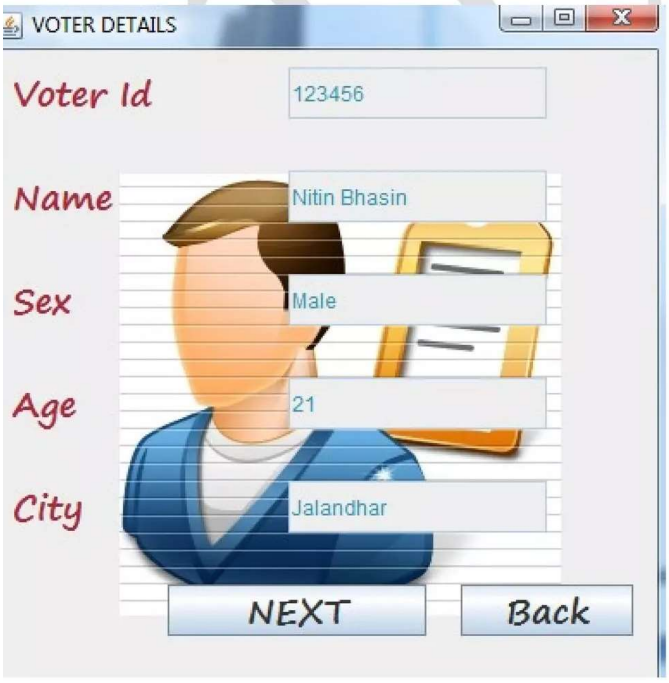
1. **User Registration and Authentication:** I contributed to the implementation of user registration and authentication functionalities, ensuring that only authorized voters could access the system.
2. **Ballot Creation and Management:** I was actively involved in the design and management of electronic ballots, allowing administrators to create and configure the voting options, candidates, and election details.
3. **Voter Interface:** A key part of my role was creating the voter interface, enabling registered users to cast their votes securely and conveniently. This involved developing user-friendly interfaces and ensuring smooth interactions.
4. **Security Measures:** Security was paramount in an online voting system. I participated in the implementation of robust security measures, including encryption, authentication protocols, and access controls to safeguard the integrity of the voting process and protect sensitive data.
5. **Vote Tabulation:** I worked on the backend components responsible for tabulating votes and generating accurate results in real-time. This required the implementation of algorithms for calculating and displaying vote counts.
6. **Administration Dashboard:** I contributed to the development of an administration dashboard, which empowered administrators to monitor and manage the voting process, ensuring transparency and efficient election management.
7. **Data Integrity:** Ensuring data integrity was a critical task. I focused on measures to prevent tampering with the voting data, ensuring that the system could withstand potential security threats.
8. **Testing and Quality Assurance:** Rigorous testing and quality assurance were central to my role. I conducted extensive testing to identify and rectify any issues, guaranteeing the reliability and accuracy of the online voting system.

9. **Documentation:** I diligently documented the development process, system architecture, and usage guidelines, creating a valuable resource for future reference and maintenance of the online voting system.
10. **User Support and Training:** As part of my responsibilities, I provided user support and training to ensure that administrators and voters could navigate the system effectively and without complications.

### 3.2.3 Modules Snapshot



RECOVERY
Name
City
ENTER UR PET NAME
ROAD TO RECOVERY
OK
Back


VOTER DETAILS
Voter Id
123456
Name
Nitin Bhasin
Sex
Male
Age
21
City
Jalandhar
NEXT
Back

## 4.0 Conclusion

In concusion, my internship experience with Spring Web MVC has exposed me to the powerful world of web application development. This framework's versatility and ability to create dynamic, user-friendly web solutions have become evident. Throughout my internship, I engaged in tasks such as configuration, controller development, user interface design, data integration, security implementation, RESTful service creation, and performance optimization. While challenges were present, the experience has deepened my understanding of Spring Web MVC's role in modern web development, and I'm eager to apply this knowledge in my future endeavors.