Chapter 2 : OVERVIEW OF THE ORGANIZATION

DataValley is a forward-thinking IT training and consulting company committed to bridging the skill gap between academia and the software industry. With a strong focus on experiential learning and hands-on exposure, DataValley offers internship and training programs tailored to current industry demands, covering domains such as Full Stack Development, Artificial Intelligence, Data Science, Cloud Computing, DevOps, and Cybersecurity.

The organization designs its programs by integrating live projects, mentorship from industry professionals, and real-time case studies, enabling students to gain deep technical insights and job-ready capabilities. Its training model blends instructor-led sessions, project-based learning, and industry-standard tool usage, ensuring students develop a practical understanding of real-world workflows.

DataValley collaborates with leading academic institutions and tech companies to maintain the relevance, quality, and scalability of its programs. By fostering a culture of innovation and applied learning, it empowers students to not only master technical concepts but also build complete, deployable applications. Interns also benefit from career guidance, placement assistance, and exposure to emerging technologies—making DataValley a trusted partner in launching successful careers in software development and beyond.

Week-3

Topic covered: **Database Management – MySQL & MongoDB**

Description:

In the third week of my internship, I learned about database management systems, focusing first on MySQL, a relational database, and later on MongoDB, a NoSQL document database. The week began with an introduction to RDBMS and its importance in enterprise systems. I installed MySQL using XAMPP and MySQL Workbench, set up databases, and created tables while understanding concepts like primary keys, foreign keys, and relational integrity.

We explored various MySQL data types (like VARCHAR, INT, DATE) and practiced setting constraints such as NOT NULL, UNIQUE, PRIMARY KEY, and AUTO_INCREMENT. I became familiar with DDL commands (CREATE, ALTER, DROP) to manage database structures.

Midweek, I studied DML (INSERT, UPDATE, DELETE), DCL (GRANT, REVOKE), TCL (COMMIT, ROLLBACK, SAVEPOINT), and DQL (SELECT) to manipulate and query data efficiently. I practiced writing queries to filter, sort, and group data across tables.

Later, I learned about advanced SQL concepts: using JOINS, aggregate functions (SUM, COUNT), subqueries, stored procedures, functions, and triggers to automate tasks and enforce business logic. I also created views to simplify complex queries and protect sensitive data.

By the end of the week, I gained hands-on experience with both MySQL (structured data) and MongoDB (semi-structured data), preparing me to manage different types of data storage for full-stack projects.

Week-4

Topics Covered: Servlets & JSP

Java Web Development with Servlets & JSP

This week introduced me to Java web development, focusing on Servlets and JSP— the foundational technologies for creating dynamic web applications. We started by learning about three-tier architecture and the crucial role of web servers in handling client-server interactions. I understood the core responsibilities of Java EE (Jakarta EE) in enterprise-grade applications and how servlet containers like Apache Tomcat manage HTTP requests and responses.

Moving forward, I explored Servlets as server-side Java components. I studied the Servlet lifecycle, particularly the init(), service(), and destroy() methods, and practiced configuring Servlets using both web.xml and annotation-based (@WebServlet) approaches. I created and deployed a simple Servlet that delivered custom responses to user requests.

Next, I learned how to handle form data using HTML forms with doGet() and doPost() methods in Servlets. I used request and response objects to retrieve user inputs and generate dynamic output through PrintWriter streams—setting MIME types and formatting as needed.

A key focus was on session tracking techniques, which are essential for maintaining user state in web apps. I implemented three approaches—cookies, URL rewriting, and the HttpSession API—gaining hands-on experience with data persistence, session timeout, and invalidation for secure workflows.

Later, I delved into Java Server Pages (JSP), using scripting elements (declarations, scriptlets, expressions) to blend Java code within HTML. I worked with JSP implicit objects, and adopted Expression Language (EL) to access data easily without verbose Java syntax. The week concluded with building small projects using the Model-View-Controller (MVC) pattern. I developed a login authentication module, where HTML handled the view, Servlets acted as controllers, Java Beans managed logic (model), and JSPs rendered results. Using RequestDispatcher enabled effective navigation between resources.

By week's end, I completed mini-projects that brought together Servlet–JSP integration and backend database connectivity using MySQL. These projects—like login systems and registration forms—helped solidify my understanding of fullstack Java web development, preparing me for advanced Spring-based frameworks in the following weeks.