INTERNSHIP REPORT

Create web application for Login Form Validation -JSP - JDBC - MySQL

A Report Submitted to

Jawaharlal Nehru TechnologicalUniversity Kakinada, Kakinada

in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

Submitted by

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING NRI INSTITUTE OF TECHNOLOGY

Autonomous

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Accreditedby NBA (CSE, ECE & EEE), Accreditedby NAAC with 'A' Grade
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Pothavarappadu (V), (Via) Nunna, Agiripalli (M), Krishna Dist., PIN: 521212, A.P, India.

2023-2024

(An

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CERTIFICATE

This is to certify that the "Internship report" submitted by TANGIRALA VENKATA MANI KANTA REDDY-21KN1A42H4 is work done by them and submitted during 2022-2023 academic year, in partial fulfillment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY in COMPUTER SCIENCE AND ENGINEERING, at HMI Engineering Services, Budhil, Sivaji Park Rd, Dwaraka Nagar, Visakhapatnam.



INTERNSHIP COORDINATOR

Head of the Department

(Dr. D. SUNEETHA)

EXTERNAL EXAMINER

CERTIFICATE OF INTERNSHIP



ACKNOWLEDGEMENT

We take this opportunity to thank all who have rendered their full support to

our work. The pleasure, the achievement, the glory, the satisfaction, the reward, the

appreciation and the construction of our project cannot be expressed with a few words

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successfully.

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encouragement to complete the Project work.

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in completing the Project work.

Finally, we thank the Administrative Officer, Staff Members, Faculty of

Redg no: 21KN1A42H4

Department of CSE, NRI Institute of Technology and my friends, directly or

indirectly helped us in the completion of this project.

Name: TANGIRALA VENKATA MANI KANTA REDDY

ABSTRACT

Login Form Validation Web Application using JSP, JDBC, and MySQL

In today's digital age, secure user authentication and data validation are paramount for web applications. This project aims to develop a robust web application for login form validation using JavaServer Pages (JSP), Java Database Connectivity (JDBC), and the MySQL database. The application will provide a seamless and secure experience for users to log in to their accounts.

Key Features:

- 1. User Registration: The application will allow new users to register by providing their required information, such as username, password, email, etc. The registration data will be securely stored in the MySQL database.
- 2. Login Authentication: Upon registration, users can log in using their credentials. The application will validate the user's credentials against the stored data in the database to ensure the authenticity of the user.
- 3. Password Hashing: To enhance security, user passwords will be stored as hashed values in the database. This ensures that even if the database is compromised, actual passwords remain protected.
- 4. Session Management: The application will implement session management to maintain user sessions after successful login. This ensures that users stay authenticated as they navigate through the different pages of the application.
- 5. Input Validation: Proper input validation will be implemented to prevent common security vulnerabilities like SQL injection and cross-site scripting (XSS) attacks. This will ensure that the application remains resilient against malicious inputs.
- 6. Error Handling: In cases of incorrect login attempts or other errors, the application will provide clear and user-friendly error messages to guide users and enhance the user experience.
- 7. Database Connectivity: JDBC will be used to establish a connection between the web application and the MySQL database. This will facilitate the retrieval and storage of user data securely.
- 8. Responsive Design: The application's user interface will be designed to be responsive, adapting to various screen sizes and devices, to provide a consistent experience for users across different platforms.
- 9. User-Friendly Interface: The user interface will be designed with simplicity and ease of use in mind, making the login and registration processes intuitive for users.

Organization Information:

HMI Engineering Services was established in 2008 with the intention of cultivating a prosperous ecosystem consisting of people, academic institutions, and private businesses. The Government International Institute of Digital Technologies and the IITs rely on it as a prime partner. It provides the TAPTAP AI Driven employability platform to help students alter their path toward their dream objectives while also assisting human resources professionals in hiring the right candidates. It has India's most extensive network of centers of excellence in new technologies. We are recognized as one of India's leading organizations specializing in the creation of web applications. Our mission is to develop web applications that are robust and efficient, and that precisely suit the needs of each of our clients in the most productive way possible.

Programs and opportunities:

This ground-up approach helps us deliver not only the solution to our clients but also add value to at the core which operates in Five specific domains namely TapTap - AI Driven, Post Graduation Programs, Center of Excellence, Virtual Programming Labs and Happie Days - A social Networking site for the students. TapTap offer services in Campus Recruitment drives for the Employers as well as College authorities. Recruiters can Conduct Customized Online Assessments secured with Best-in-class Proctoring and Schedule the end-to-end hiring process. Under each division we further provide specific industry solutions on focused domains with cutting edge technologies. It emphasize on building relationships with our clients by delivering projects on time and within budget.

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Learning Objectives/Internship Objectives

- Internships are generally thought of to be reserved for college students looking to gain experience in a particular field. However, a wide array of people can benefit from Training Internships in order to receive real world experience and develop their skills.
- An objective for this position should emphasize the skills you already possess in the area and your interest in learning more
- ➤ Internships are utilized in a number of different career fields, including architecture, engineering, healthcare, economics, advertising and many more.
- > Some internship is used to allow individuals to perform scientific research while others are specifically designed to allow people to gain first-hand experience working.
- ➤ Utilizing internships is a great way to build your resume and develop skills that can be emphasized in your resume for future jobs. When you are applying for a Training Internship, make sure to highlight any special skills or talents that can make you stand apart from the rest of the applicants so that you have an improved chance of landing the position.

WEEKLY OVERVIEW OF INTERNSHIP ACTIVITIES

EEK	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	13/02/2023	Monday	Content delivery
VEF	14/02/2023	Tuesday	Content delivery
1st W	15/02/2023	Wednesday	Content delivery
	16/02/2023	Thursday	Content delivery
	17/02/2023	Friday	Content delivery

	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
$\mathbf{E}\mathbf{K}$	20/02/2023	Monday	Content delivery
WEEK	21/02/2023	Tuesday	Content delivery
2nd V	22/02/2023	Wednesday	Content delivery
7	23/02/2023	Thursday	Content delivery
	24/02/2023	Friday	Content delivery

K	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
WEEK	27/02/2023	Monday	Content delivery
W	28/02/2023	Tuesday	Content delivery
rd	01/03/2023	Wednesday	Content delivery
3	02/03/2023	Thursday	Content delivery
	03/03/2023	Friday	Content delivery

Y	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
WE	06/03/2023	Monday	Content delivery
	07/03/2023	Tuesday	Content delivery
	09/03/2023	Thursday	Content delivery
	10/03/2023	Friday	Content delivery
	13/03/2023	Monday	Content delivery

5 th WEF	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	14/03/2023	Tuesday	Introduce the Topic & the Problem Statement
	15/03/2023	Wednesday	Introduce the Topic & the Problem Statement
	16/03/2023	Thursday	Introduce the Topic & the Problem Statement
	17/03/2023	Friday	Introduce the Topic & the Problem Statement
	20/03/2023	Monday	Introduce the Topic & the Problem Statement

6 th WEEF	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	21/03/2023	Tuesday	Abstract Building
	23/03/2023	Thursday	Abstract Building
	24/03/2023	Friday	Abstract Building
	27/03/2023	Monday	Abstract Building
	28/03/2023	Tuesday	Abstract Submission

	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	29/03/2023	Wednesday	Abstract Submission
	31/03/2023	Friday	Abstract Submission
\mathbf{K}	03/04/2023	Monday	Explain your Approach to Solving Problem
WEEK			
th V	04/04/2023	Tuesday	Explain your Approach to Solving Problem
7			
	06/04/2023	Thursday	Explain your Approach to Solving Problem

8 th WEE	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	10/04/2023	Monday	Explain your Approach to Solving Problem
	11/04/2023	Tuesday	Explain Structure of Project
	12/04/2023	Wednesday	Explain Structure of Project
	13/04/2023	Thursday	Explain Structure of Project
	17/04/2023	Monday	Explain Structure of Project

9 th WE	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	18/04/2023	Tuesday	Data Preprocessing
	19/04/2023	Wednesday	Data Preprocessing
	20/04/2023	Thursday	Data Preprocessing
	21/04/2023	Friday	Data Preprocessing
	24/04/2023	Monday	Data Preprocessing

10 th W	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	25/04/2023	Tuesday	Perform Analysis
	26/04/2023	Wednesday	Perform Analysis
	27/04/2023	Thursday	Perform Analysis
	28/04/2023	Friday	Perform Analysis
	01/05/2023	Monday	Perform Analysis

'EEK	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
11 th W	02/05/2023	Tuesday	PPT Preparation
	03/05/2023	Wednesday	PPT Preparation
	04/05/2023	Thursday	PPT Preparation
	05/05/2023	Friday	PPT Preparation
	08/05/2023	Monday	PPT Preparation

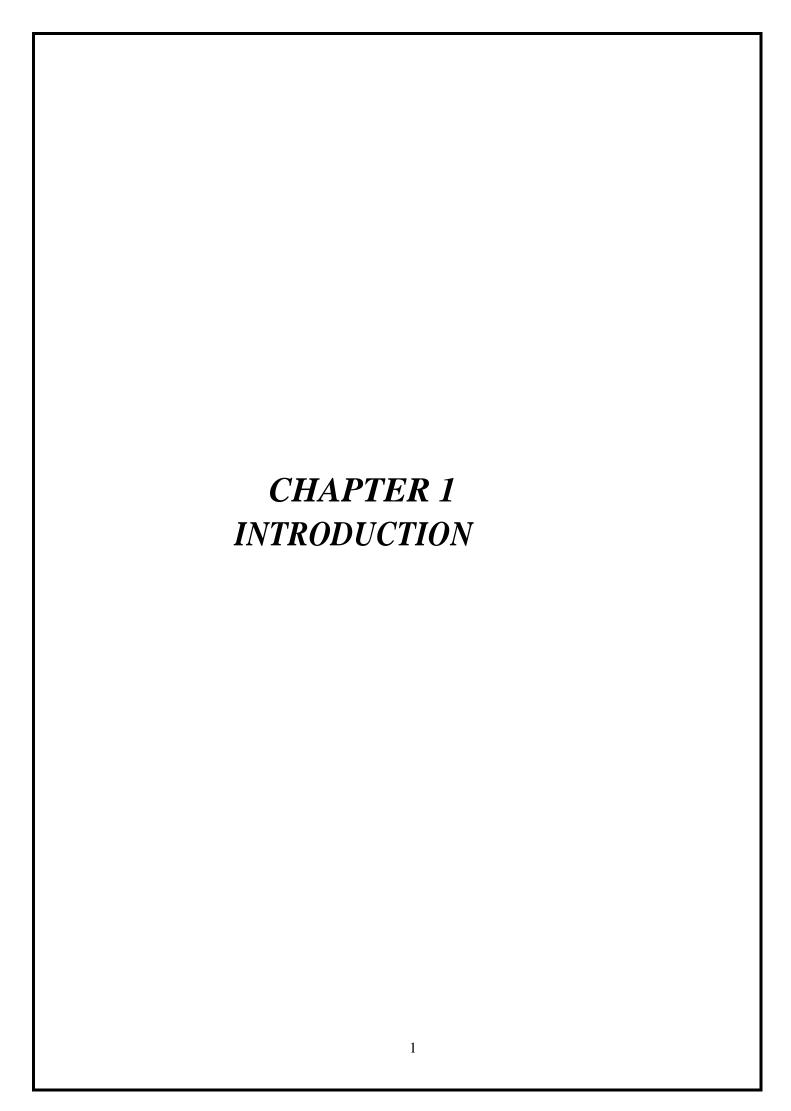
EK	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
WEEK	09/05/2023	Tuesday	PPT Submission
12 th V	10/05/2023	Wednesday	PPT Submission
	11/05/2023	Thursday	Mid Review
	12/05/2023	Friday	Mid Review
	15/05/2023	Monday	Mid Review

13 th WEEK	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	16/05/2023	Tuesday	Mid Review
	17/05/2023	Wednesday	Mid Review
	18/05/2023	Thursday	Building & Applying Algorithm
	19/05/2023	Friday	Building & Applying Algorithm
	22/05/2023	Monday	Building & Applying Algorithm

	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
WEEK			
VΕ	23/05/2023	Tuesday	Building & Applying Algorithm
th	24/05/2023	Wednesday	Building & Applying Algorithm
14	25/05/2023	Thursday	Building & Applying Algorithm
	26/05/2023	Friday	Building & Applying Algorithm
	29/05/2023	Monday	Building & Applying Algorithm

¥	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
EEK	01/06/2023	Thursday	Concluding Project
	02/06/2023	Friday	Concluding Project
15 t	05/06/2023	Monday	Concluding Project
	06/06/2023	Tuesday	Concluding Project
	07/06/2023	Wednesday	Concluding Project

	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	08/06/2023	Thursday	Final Review
	09/06/2023	Friday	Final Review
	13/06/2023	Tuesday	Final Review
	14/06/2023	Wednesday	Final Review
	15/06/2023	Thursday	Final Review



INTRODUCTION

WEB APPLICATION

1.

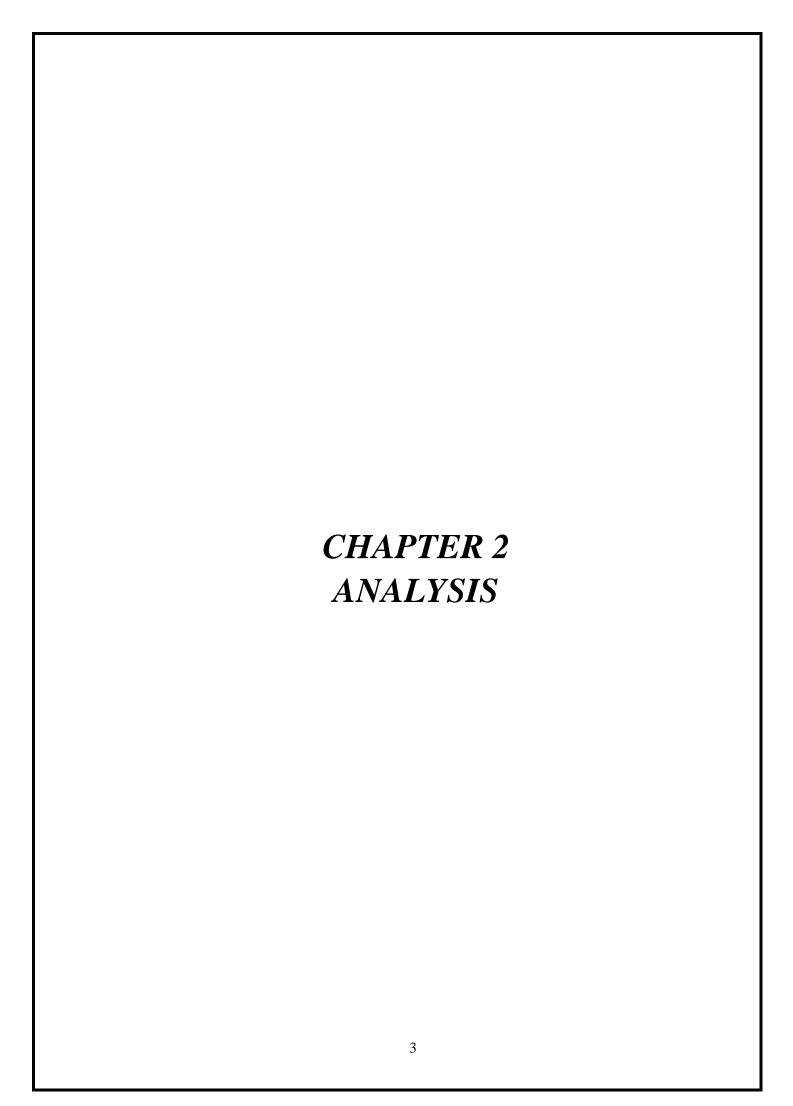
It is a type of computer program that usually runs with the help of a web browser and also uses many web technologies to perform various tasks on the internet. A web application can be developed for several uses, which can be used by anyone like it can be used as an individual or as a whole organization for several reasons.

In the era of digital connectivity, user authentication and data security are paramount concerns for web applications. With the increasing reliance on online services, ensuring a secure and seamless login process is essential. The "Login Form Validation Web Application" project addresses these concerns by employing the power of Java Server Pages (JSP), Java Database Connectivity (JDBC), and the MySQL database to create a robust and user-friendly authentication system.

This web application project is dedicated to delivering a secure and efficient user authentication experience. By implementing the latest web development practices and technologies, the project aims to provide users with a hassle-free login process while ensuring that their sensitive information remains safeguarded against potential threats.

Project Scope: The primary focus of this project is to develop a web-based authentication system that enables users to register for new accounts and log in securely. The application will utilize JSP for dynamic content presentation, JDBC for seamless communication with the MySQL database, and MySQL as the backend database for storing user information. The project will also incorporate essential security features such as password hashing, input validation, and session management.

It is a technique process where a web-form checks if the information provided by a user is correct. The form will either alert the user that they messed up and need to fix something to proceed or the form will be able to continue with their process.



2. SYSTEM ANALYSIS

1.1 Brief Project Description:

LOGIN FORM VALIDATION:

It is a technique process where a web-form checks if the information provided by a user is correct. The form will either alert the user that they messed up and need to fix something to proceed or the form will be able to continue with their process.

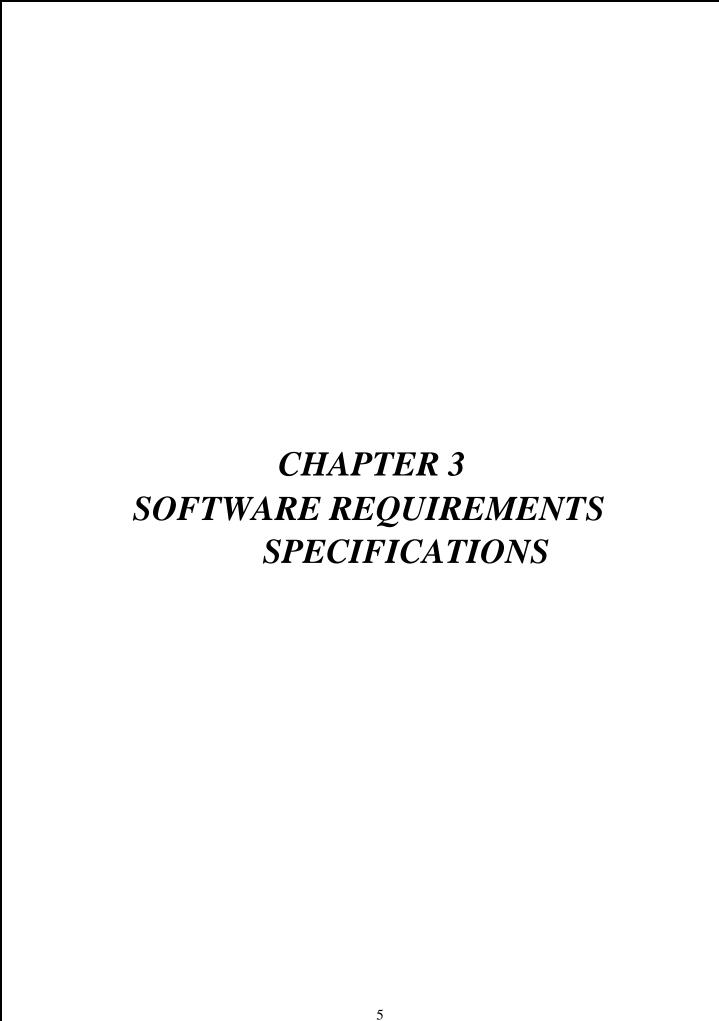
JSP - Java Server Pages (JSP) is a technology used for developing web applications in Java. JSP is a server-side technology that enables the creation of dynamic web pages using Java. JSP files are a combination of HTML and Java code, which are processed by the server and sent to the client as HTML

JDBC – JDBC stands for Java Database Connectivity. JDBC is a Java API to connect and execute the query with the database.

It is a part of JavaSE (Java Standard Edition). JDBC API uses JDBC drivers to connect with the database.

MYSQL - It is a relational database management system.

The database structure is organized into physical files optimized for speed. The logical data model, with objects such as data tables, views, rows, and columns, offers a flexible programming environment.



3. SOFTWARE REQUIREMENTS SPECIFICATIONS

Following software is used to develop a Web based application:

Operating System	Windows 10
Environment	ECLIPSE NEON IDE
Front End Tool	HTML/CSS/JavaScript
Technology	J2EE (Servlet, JSP)
Data Access Tool	JDBC
Backend Tool	MYSQL

HARDWARE INTERFACE

It's a Web based application, so it required better configuration of Hardware. Hardware which is required during development of an application:

Client Site:

Processor : Intel core i5

Speed : 2.00GHz

RAM : 8 GB

Hard Disk : 1 TB

Key Board (104 keys) : Standard

Screen Resolution : 1024 x 768 Pixels

Server Site:

Processor : Intel core i5

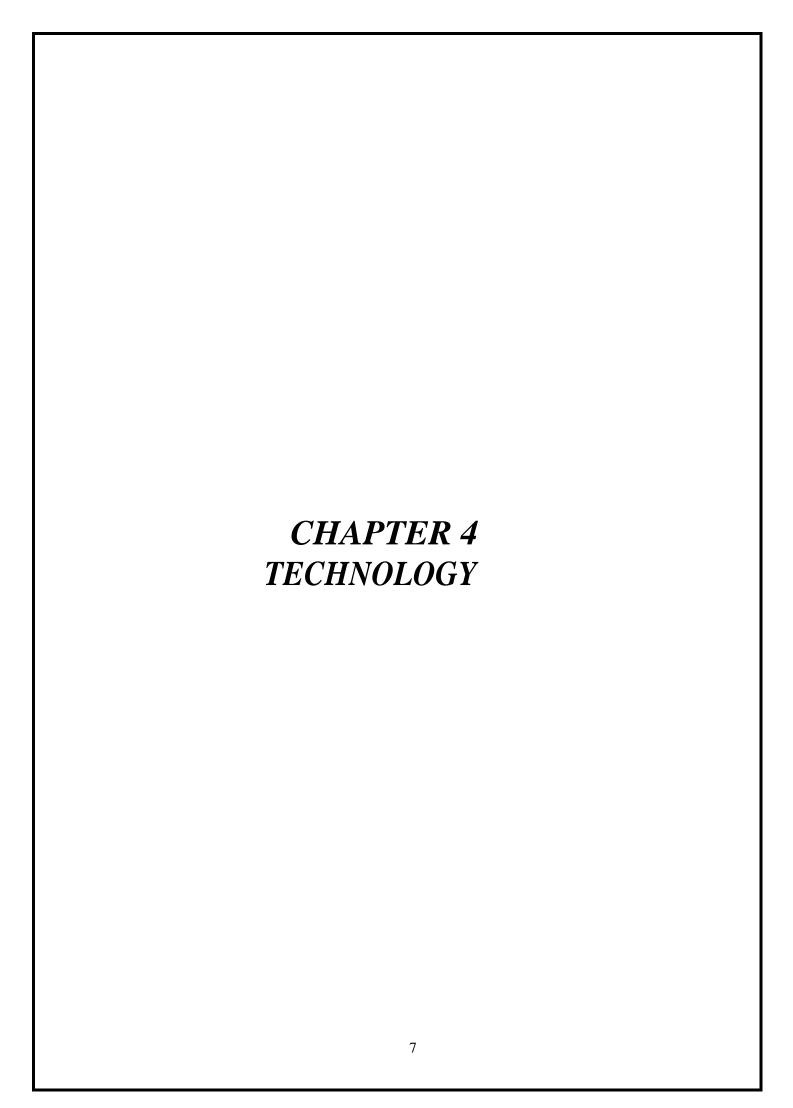
Speed : 2.00GHz

RAM : 8 GB

Hard Disk : 1 TB

Key Board (104 keys) : Standard

Screen Resolution : 1024 x 768 Pixels



TECHNOLOGY

HTML- HTML is an acronym which stands for Hyper Text Markup

Language which is used for creating web pages and web applications. Let's see what is meant by Hypertext Markup Language, and Web page.

Hyper Text: HyperText simply means "Text within Text." A text has a link within it, is a hypertext. Whenever you click on a link which brings you to a new webpage, you have clicked on a hypertext. HyperText is a way to link two or more web pages (HTML documents) with each other.

Markup language: A markup language is a computer language that is used to apply layout and formatting conventions to a text document. Markup language makes text more interactive and dynamic. It can turn text into images, tables, links, etc.

Web Page: A web page is a document which is commonly written in HTML and translated by a web browser. A web page can be identified by entering an URL. A Web page can be of the static or dynamic type. With the help of HTML only, we can create static web pages.

JAVA- Java is a **programming language** and a **platform**.

Java is a high level, robust, object-oriented and secure programming language.

Java was developed by *Sun Microsystems* (which is now the subsidiary of Oracle) in the year 1995.

James Gosling is known as the father of Java.

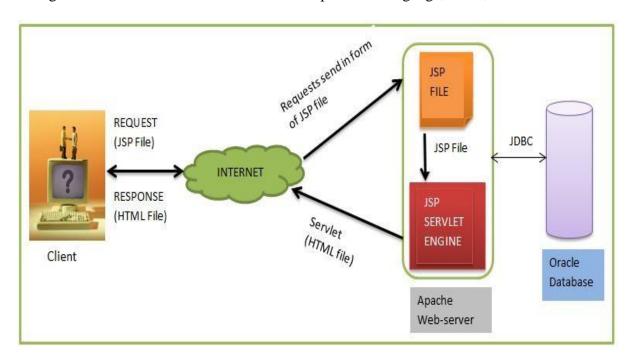
Before Java, its name was *Oak*. Since Oak was already a registered company, so James Gosling and his team changed the name from Oak to Java.

JSP:

java Server Pages (JSP) is a server-side programming technology that enables the creation of

dynamic, platform-independent method for building Web-based applications. JSP have access to the entire family of Java APIs, including the JDBC API to access enterprise databases. This tutorial will teach you how to use Java Server Pages to develop your web applications in simple and easy steps.

JSP technology is used to create web application just like servlet technology. It can be thought of as an extension to servlet such as expression Language, JSLT, etc.



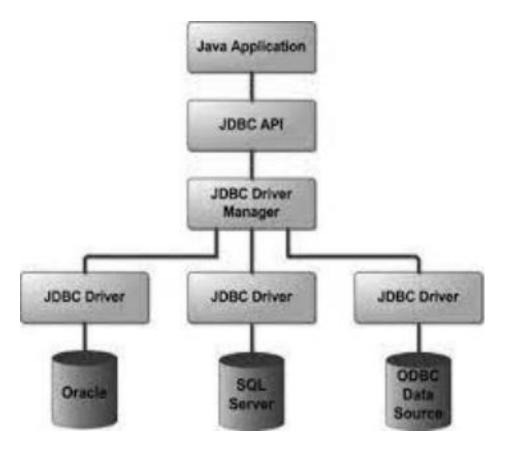
• JDBC:

- ➤ JDBC stands for Java Data Base Connectivity.
- > JDBC is a java API to connect and execute the query with the database.
- ➤ It is a part of JAVASE(Java Standard Edition).
- ▶ JDBC-API uses JDBC drivers to connect with the database.

There are 4 types of JDBC-drivers:

- 1 JDBC-ODBC bridge driver
- 2 Native driver
- 3 Network protocol driver and
- 4 Thin driver

Architechture of JDBC:-



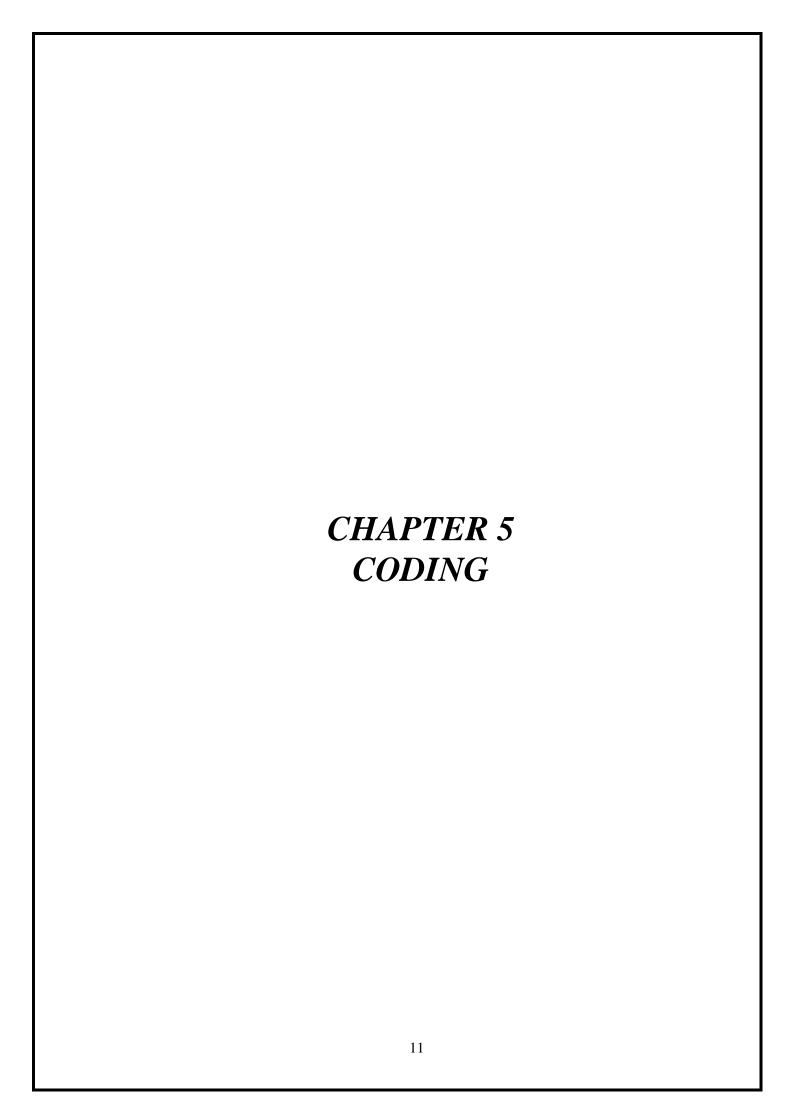
MYSQL:

MYSQL is a relational database management system (MS) based on the structured query language, which is the popular language for accessing and managing the records in the database.

- > MYSQL is free and open-source.
- MYSQL is idle for both small and large applications.

Technologies Used:

- JavaServer Pages (JSP) for dynamic content generation and presentation.
- Java Database Connectivity (JDBC) to interact with the MySQL database.
- MySQL as the relational database management system for storing user information.
- HTML, CSS, and JavaScript for creating the user interface and enhancing user experience.
- Hashing algorithms (e.g., bcrypt) for secure password storage.
- Tomcat or a similar web server for hosting the JSP pages.



5. CODING

Create database table for member

Create a new database called userdb in mysql. In the userdb database create a table called member.

```
CREATE TABLE 'member' (
'uname' varchar (45) NOT NULL,
'password' varchar (45) DEFAULT NULL,
'email' varchar (45) DEFAULT NULL,
'phone` varchar (45) DEFAULT NULL,
PRIMARY KEY (`uname`))
ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

Create a member Register. jsp for the user registration

```
< @ page language="java" contentType="text/html; charset=ISO-8859-1"pageEncoding="ISO
8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>title </title>
</head>
<body>
    <form action="Register" method="post">
         >
                  User Name
                  <input type="text" name="uname">
             Password
                  <input type="password" name="password">
             Email
                  <input type="text" name="email">
             Phone
                  <input type="text" name="phone">
```

```
Submit
                     <input type="submit" value="register">
                </form>
</body>
</html>
                       Create a dto class Member.java
This is a dto or data transfer object class that has fields according to the fields in
     the database table.
public class Member
     private String uname, password, email, phone;
     public Member() {
          super();
     }
     public Member(String uname, String password, String email, String phone) {
          super();
          this.uname = uname;
          this.password = password;
          this.email = email;
          this.phone = phone;
```

```
public String getUname() {
     return uname;
public void setUname(String uname) {
     this.uname = uname;
}
public String getPassword() {
     return password;
public void setPassword(String password) {
     this.password = password;
public String getEmail() {
     return email;
}
public void setEmail(String email) {
     this.email = email;
public String getPhone() {
     return phone;
public void setPhone(String phone) {
```

```
this.phone = phone;
}
```

Create a Servlet named Register.java

Control should go from the jsp to a servlet, so we will create a servlet here named Register.java. When jsp form is submitted control will go to the post method. From the post method a dao class function is called that inputs into the database using jdbc.

```
import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
/**
* Servlet implementation class Register
@WebServlet("/Register")
public class Register extends HttpServlet {
       private static final long serialVersionUID = 1L;
   * @see HttpServlet#HttpServlet()
  public Register() {
```

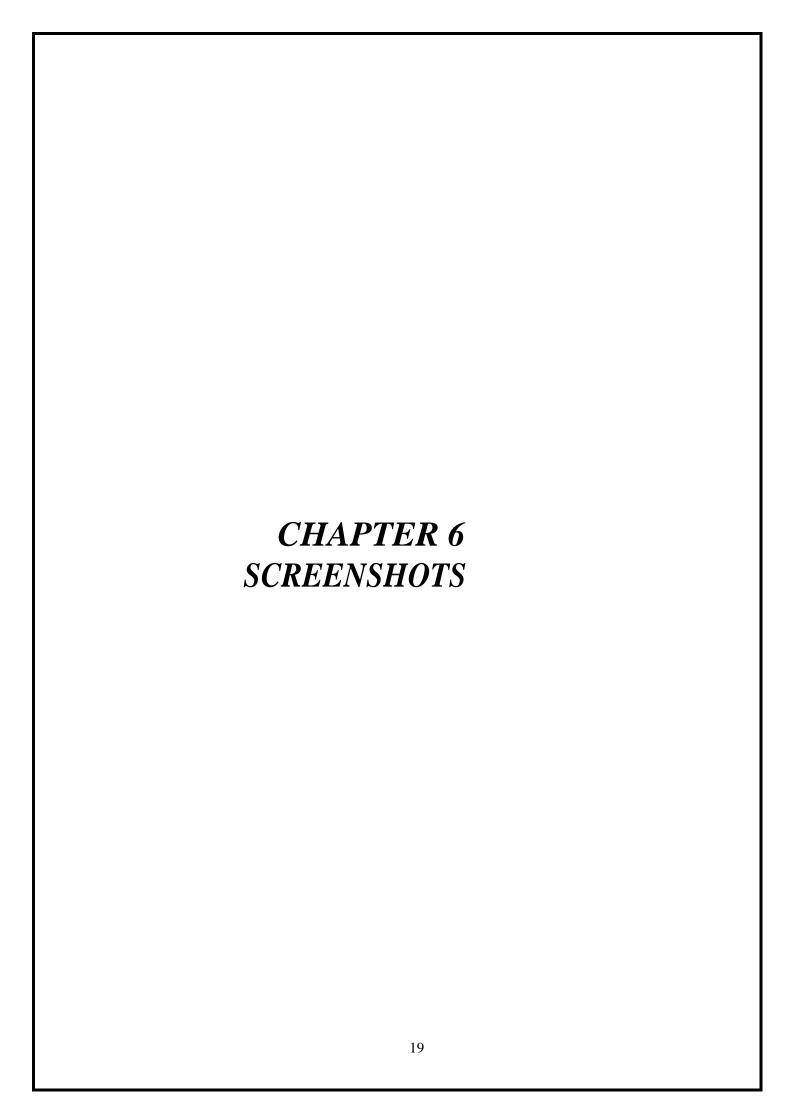
```
super();
  // TODO Auto-generated constructor stub
}
    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
     */
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
           // TODO Auto-generated method stub
           response.getWriter().append("Served at: ").append(request.getContextPath());
    }
    /**
     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)
     */
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
           String uname=request.getParameter("uname");
           String password=request.getParameter("password");
           String email=request.getParameter("email");
           String phone=request.getParameter("phone");
           Member member=new Member(uname, password, email, phone);
           RegisterDao rdao=new RegisterDao();
           String result=rdao.insert(member);
           response.getWriter().println(result);
```

Create a Dao class Register Dao. java

The dao class contains the jdbc code to insert into the mysql database member table.

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;
public class RegisterDao {
     private String dburl = "jdbc:mysql://localhost:3306/userdb";
     private String dbuname = "root";
     private String dbpassword = "mysql";
     private String dbdriver = "com.mysql.jdbc.Driver";
     public void loadDriver(String dbDriver)
     {
           try {
                 Class.forName(dbDriver);
           } catch (ClassNotFoundException e) {
                 // TODO Auto-generated catch block
                 e.printStackTrace();
           }
     }
     public Connection getConnection() {
           Connection con = null;
           try {
                 con = DriverManager.getConnection(dburl, dbuname, dbpassword);
```

```
} catch (SQLException e) {
           // TODO Auto-generated catch block
           e.printStackTrace();
     }
     return con;
}
public String insert(Member member) {
     loadDriver(dbdriver);
     Connection con = getConnection();
     String sql = "insert into member values(?,?,?,?)";
     String result="Data Entered Successfully";
     try {
           PreparedStatement ps = con.prepareStatement(sql);
           ps.setString(1, member.getUname());
           ps.setString(2, member.getPassword());
           ps.setString(3, member.getEmail());
           ps.setNString(4, member.getPhone());
           ps.executeUpdate();
     } catch (SQLException e) {
           // TODO Auto-generated catch block
           result="Data Not Entered Successfully";
           e.printStackTrace();
     }
     return result;} }
```



6.

SCREENSHOTS

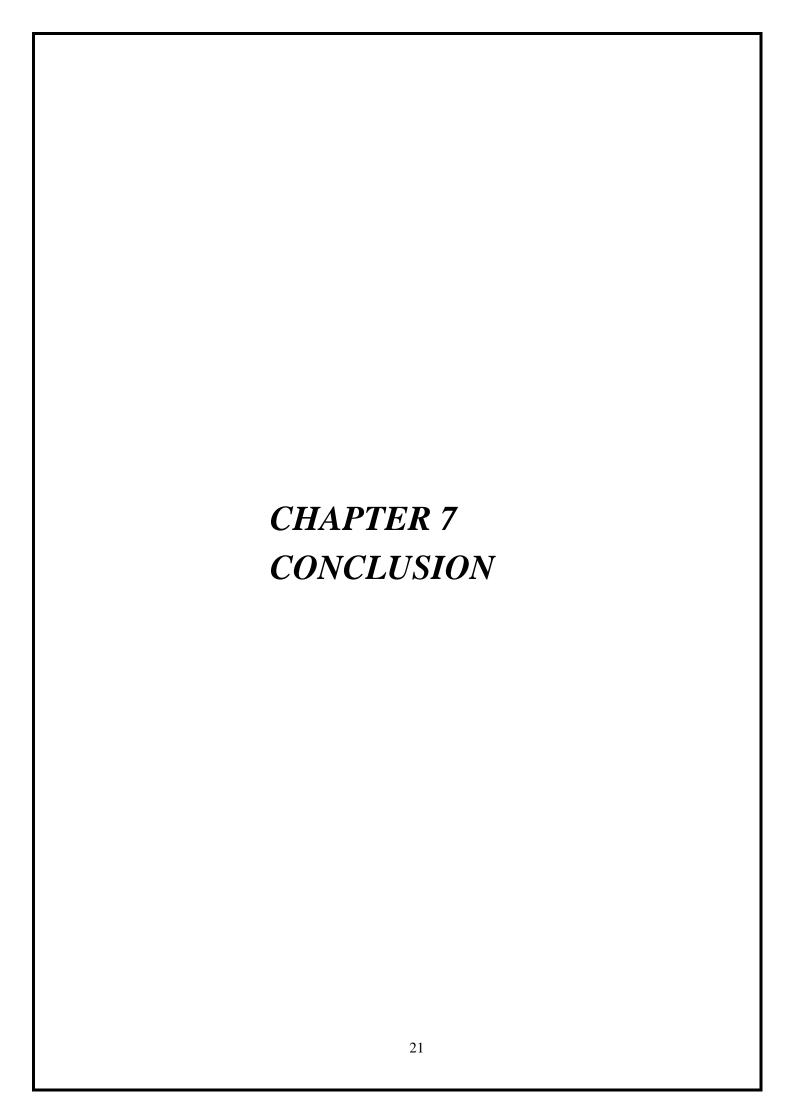
Output:

1)



Data Entered Successfully

2)

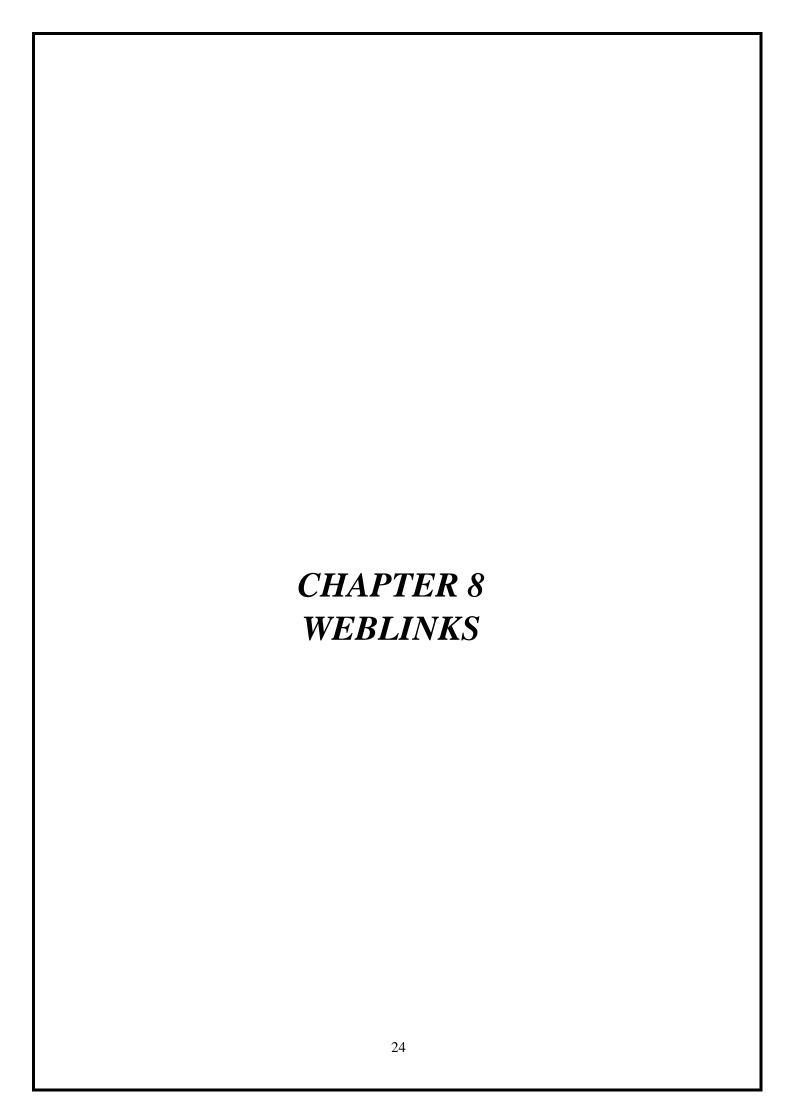


7. CONCLUSION

This project's primary goal is to develop a secure and user-friendly web application for login form validation, leveraging the power of JSP, JDBC, and MySQL. By adhering to modern security practices and employing the latest technologies, the application aims to provide users with a reliable and seamless login experience, ensuring data security and elevating the overall user experience. Through this project, we endeavor to showcase the integration of these technologies to build a practical solution that addresses the fundamental challenges of user authentication in web applications.

This application helps to find the user credentials is correct or not based upon the details in database.

If the user entered correct details ,it will proceed to further or else it will send an alert messsage.



8.	WEBLINKS:
	https://stackoverflow.com/questions/14297122/jsp-link-to-another-jsp
	https://docs.oracle.com/javase/tutorial/jdbc/basics/connecting.html
	https://www.mysql.com/%20
	25