

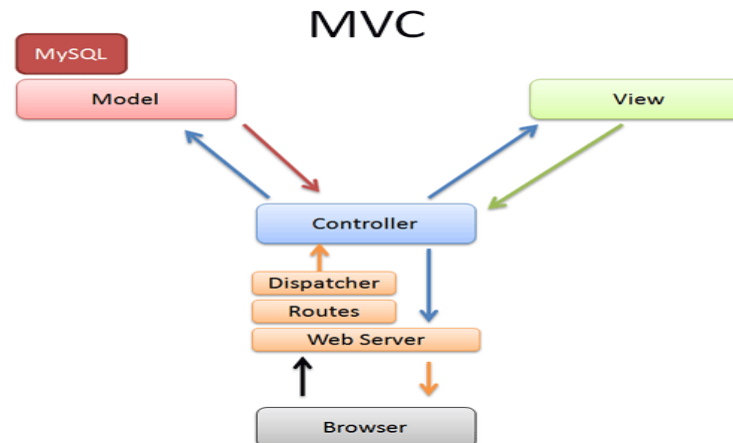
Title Slide

# HNDIT4232\_ Enterprise Architecture

- **Title:** Web Application using MVC Architecture
- ❖ **Subtitle:** Login, Registration, User Management (CRUD)
- ❖ **Presented by:** [KUR/It/2022/P/39]
- ❖ **Repositories :** <https://github.com/wasantha788/KUR-IT-2022-P-39>

# What is MVC Architecture?

- ▶ **Model – View – Controller** pattern separates logic into 3 parts:
  - ▶ **Model:** Handles data (e.g., User data, DB operations)
  - ▶ **View:** Handles UI (HTML, JSP)
  - ▶ **Controller:** Manages the flow between Model and View (Servlets or Controllers)







# Model ,View, Controller

- ▶ The **Model** in a todo app might define what a “task” is and that a “list” is a collection of tasks.
- ▶ The **View** code will define what the todos and lists looks like, visually. The tasks could have large font, or be a certain color.
- ▶ Finally, the **Controller** could define how a user adds a task or marks another as complete. The Controller connects the View’s add button to the Model, so that when you click “add task,” the Model adds a new task.






# System Overview

- ▶ A web app with:
  - ▶ Login & registration
  - ▶ User list display
  - ▶ Update & delete user
- ▶ Tools used:
  - ▶ **Language:** Java (JSP, Servlets)
  - ▶ **Database:** MySQL
  - ▶ **IDE:** Eclipse





# User Registration Flow

-  **Controller:** RegisterServlet.java
-  **Model:** UserDAO.java
-  **View:** register.jsp
-  **Process:**
  - User fills form → Servlet receives → DAO saves to DB




# Login Functionality

-  **Controller:** LoginServlet.java
-  **Model:** Check email & password in DB
-  **View:** login.jsp → success → Index.jsp
-  If correct → session created
-  If incorrect → error message shown

# Displaying User List

-  **Controller:** UserListServlet.java
-  **Model:** UserDao.getAllUsers()
-  **View:** userList.jsp
-  Shows all users from DB in a table format

# Update Functionality

- **Edit Button → EditUserServlet?id=...**
-  **Form pre-filled with user data**
-  **Submits to UpdateUserServlet**
-  **DAO updates the DB using SQL UPDATE**



# Insert Update and Delete

```
package com.xadmin.usermanagement.dao;

import java.sql.Connection;

public class UserDao {

    private String jdbcURL = "jdbc:mysql://localhost:3306/userdb?useSSL=false";
    private String jdbcUsername = "root";
    private String jdbcPassword = "root";
    private String jdbcDriver = "com.mysql.jdbc.Driver";

    private static final String INSERT_USERS_SQL = "INSERT INTO users" + " (name, email, country) VALUES "
        + " (?, ?, ?);";

    private static final String SELECT_USER_BY_ID = "select id,name,email,country from users where id=?";
    private static final String SELECT_ALL_USERS = "select * from users";
    private static final String DELETE_USERS_SQL = "delete from users where id = ?;";
    private static final String UPDATE_USERS_SQL = "update users set name = ?,email= ?, country =? where id = ?;";

    public UserDao() {
    }

    protected Connection getConnection() {

        Connection connection = null;
        try {
            Class.forName(jdbcDriver);
            connection = DriverManager.getConnection(jdbcURL, jdbcUsername, jdbcPassword);
        } catch (SQLException e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
        } catch (ClassNotFoundException e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
        }
        return connection;
    }
}
```

# Database Design

| Result Grid |      |              |                             |                    |            |
|-------------|------|--------------|-----------------------------|--------------------|------------|
|             |      | Filter Rows: |                             | Edit:              |            |
|             |      |              |                             | Export/Import:     |            |
|             |      |              |                             | Wrap Cell Content: |            |
|             | id   | uname        | uemail                      | upwd               | umobile    |
| ▶           | 4    | sankam       | KUMARA@GMAIL.COM            | 678                | 0763457345 |
|             | 8    | sandun       | sandun@gmail.com            | 876                | 0756754437 |
|             | 9    | wasantha     | wasanthajayasinghe95@gma... | 123                | 0765789467 |
|             | 13   | saman        | saman@gmail.com             | 123                | 0767895643 |
| *           | NULL | NULL         | NULL                        | NULL               | NULL       |

## DDL for youtube.users

```
1 CREATE TABLE `users` (  
2   `id` int NOT NULL AUTO_INCREMENT,  
3   `uname` varchar(45) DEFAULT NULL,  
4   `uemail` varchar(45) DEFAULT NULL,  
5   `upwd` varchar(45) DEFAULT NULL,  
6   `umobile` varchar(45) DEFAULT NULL,  
7   PRIMARY KEY (`id`)  
8 ) ENGINE=InnoDB AUTO_INCREMENT=15 DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

# Model

```
package com.xadmin.usermanagement.bean;

public class User {

    protected int id;
    protected String name;
    protected String email;
    protected String country;

    public User(String name, String email, String country) {
        super();
        this.name = name;
        this.email = email;
        this.country = country;
    }

    public User(int id, String name, String email, String country) {
        super();
        this.id = id;
        this.name = name;
        this.email = email;
        this.country = country;
    }

    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getEmail() {
        return email;
    }

    public void setEmail(String email) {
```

# Controller

```
import java.io.IOException;

@WebServlet("/register")
public class RegistrationServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {

        String uname = request.getParameter("name");
        String uemail = request.getParameter("email");
        String upwd = request.getParameter("pass");
        String umobile = request.getParameter("contact");

        Connection con = null;
        RequestDispatcher dispatcher = null;

        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            con = DriverManager.getConnection(
                "jdbc:mysql://localhost:3306/youtube?useSSL=false", "root", "root");

            PreparedStatement pst = con.prepareStatement(
                "INSERT INTO users (uname, upwd, uemail, umobile) VALUES (?, ?, ?, ?)");
            pst.setString(1, uname);
            pst.setString(2, upwd);
            pst.setString(3, uemail);
            pst.setString(4, umobile);


            int rowCount = pst.executeUpdate();
            dispatcher = request.getRequestDispatcher("registration.jsp");

            if (rowCount > 0) {
                request.setAttribute("status", "success");
            } else {
                request.setAttribute("status", "failed");
            }
            dispatcher.forward(request, response); // ! Don't forget this line!
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

# View

```
login.jsp x
629< a href="registration.jsp" class="signup-image-link">Create an
630    account</a>
631</div>
632
633<div class="signin-form">
634    <h2 class="form-title">Sign in</h2>
635    <form method="post" action="login" class="register-form"
636        id="Login-form">
637        <div class="form-group">
638            <label for="username"><i
639                class="zmdi zmdi-account material-icons-name"></i></label> <input
640                type="text" name="username" id="username"
641                placeholder="youremail" />
642        </div>
643        <div class="form-group">
644            <label for="password"><i class="zmdi zmdi-lock"></i></label> <input
645                type="password" name="password" id="password"
646                placeholder="Password" />
647        </div>
648        <div class="form-group">
649            <input type="checkbox" name="remember-me" id="remember-me"
650                class="agree-term" /> <label for="remember-me"
651                class="label-agree-term"><span><span></span></span>Remember
652                me</label>
653        </div>
654        <div class="form-group form-button">
655            <input type="submit" name="signin" id="signin"
656                class="form-submit" value="Login" />
657        </div>
658    </form>
659    <div class="social-login">
660        <span class="social-label">Or login with</span>
661        <ul class="socials">
662            <li><a href="#"><i
663                class="display-flex-center zmdi zmdi-facebook"></i></a></li>
664
665            <li><a href="#"><i
666                class="display-flex-center zmdi zmdi-twitter"></i></a></li>
```




# Sing in interface



[Create an account](#)

## Sign in

☐ Remember me

Or login with   

# Login.jsp

```
Create an
  account</a>
</div>

<div class="signin-form">
  <h2 class="form-title">Sign in</h2>
  <form method="post" action="Login" class="register-form"
    id="login-form">
    <div class="form-group">
      <label for="username"><i
        class="zmdi zmdi-account material-icons-name"></i></label> <input
        type="text" name="username" id="username"
        placeholder="youremail" />
    </div>
    <div class="form-group">
      <label for="password"><i class="zmdi zmdi-lock"></i></label> <input
        type="password" name="password" id="password"
        placeholder="Password" />
    </div>
    <div class="form-group">
      <input type="checkbox" name="remember-me" id="remember-me"
        class="agree-term" /> <label for="remember-me"
        class="label-agree-term"><span><span></span></span>Remember
        me</label>
    </div>
    <div class="form-group form-button">
      <input type="submit" name="signin" id="signin"
        class="form-submit" value="Login" />
    </div>
  </form>
  <div class="social-login">
    <span class="social-label">Or login with</span>
    <ul class="socials">
      <li><a href="#"><i
        class="display-flex-center zmdi zmdi-facebook"></i></a></li>
```

# Sign up interface

## Sign up

Your Name

wasanthajayasinghe95@gmail.com

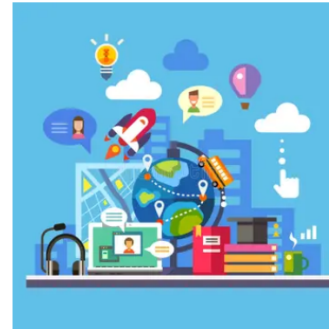
...

Repeat your password

Contact no

☒ I agree all statements in [Terms of service](#)

Register



[I am already member](#)

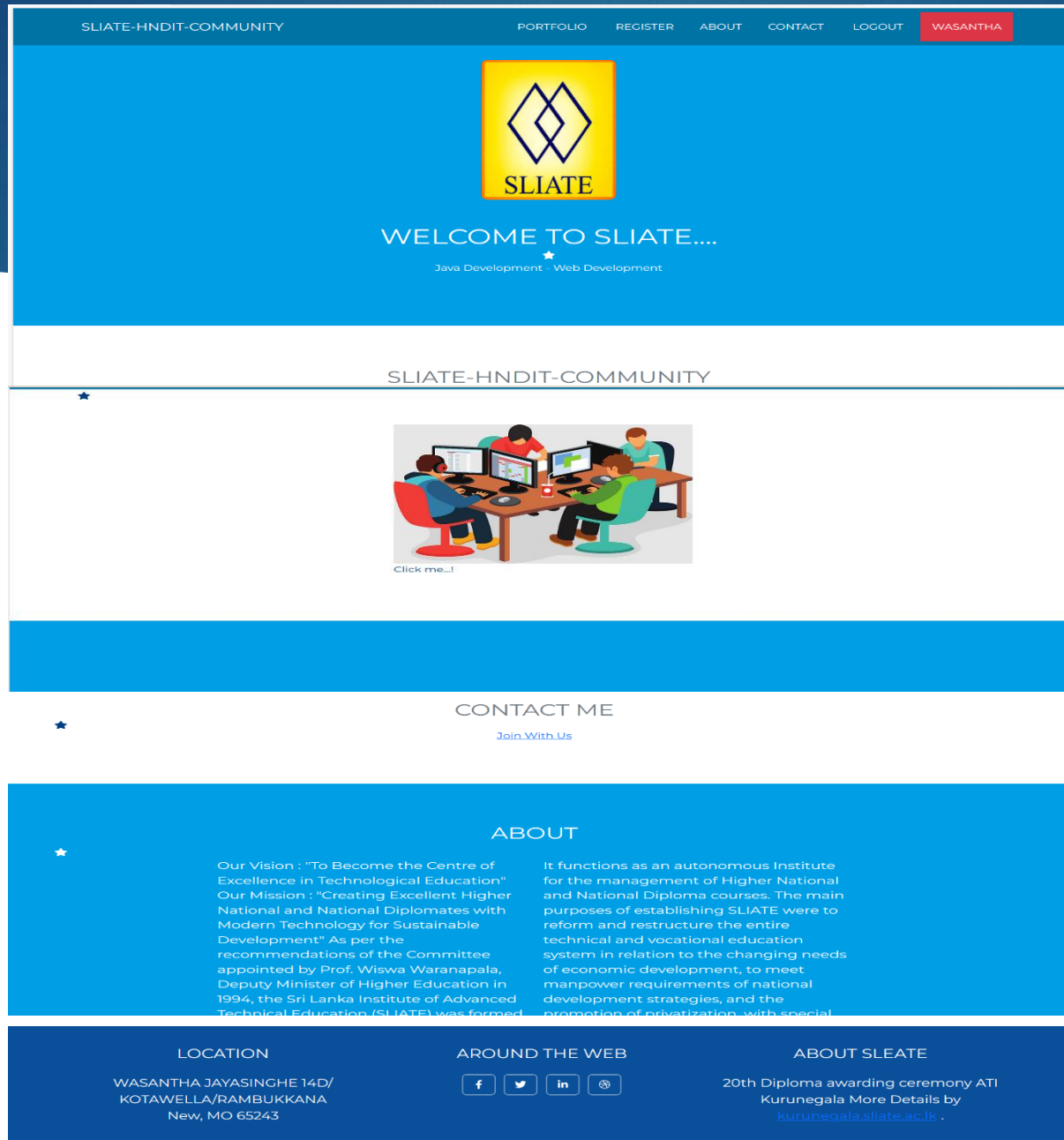


# Registration.jsp

```
<section class="signup">
  <div class="container">
    <div class="signup-content">
      <div class="signup-form">
        <h2 class="form-title">Sign up</h2>

        <form method="post" action="register" class="register-form" id="register-form">

          <div class="form-group">
            <label for="name"><i
              class="zmdi zmdi-account material-icons-name"></i></label> <input
              type="text" name="name" id="name" placeholder="Your Name" />
          </div>
          <div class="form-group">
            <label for="email"><i class="zmdi zmdi-email"></i></label> <input
              type="email" name="email" id="email" placeholder="Your Email" />
          </div>
          <div class="form-group">
            <label for="pass"><i class="zmdi zmdi-lock"></i></label> <input
              type="password" name="pass" id="pass" placeholder="Password" />
          </div>
          <div class="form-group">
            <label for="re-pass"><i class="zmdi zmdi-lock-outline"></i></label>
            <input type="password" name="re_pass" id="re_pass"
              placeholder="Repeat your password" />
          </div>
          <div class="form-group">
            <label for="contact"><i class="zmdi zmdi-lock-outline"></i></label>
            <input type="text" name="contact" id="contact"
              placeholder="Contact no" />
          </div>
          <div class="form-group">
            <input type="checkbox" name="agree-term" id="agree-term"
              class="agree-term" /> <label for="agree-term"
              class="label-agree-term"><span><span></span></span></span>I
              agree all statements in <a href="#" class="term-service">Terms
              of service</a></label>
          </div>
        </form>
      </div>
    </div>
  </div>
</section>
```



REGISTER



## Join with us

User Name

User Email

User Password

Contact

Save

# user-form.jsp

```
<div class="text-center mb-3">
  
</div>

<h2>
  <c:if test="{user != null}">Edit User</c:if>
  <c:if test="{user == null}">Join with us</c:if>
</h2>

<c:if test="{user != null}">
  <input type="hidden" name="id" value="{c:out value='{user.id}' /}" />
</c:if>

<div class="mb-3">
  <label class="form-label">User Name</label>
  <input type="text" name="name" value="{c:out value='{user.username}' /}" class="form-control" required>
</div>

<div class="mb-3">
  <label class="form-label">User Email</label>
  <input type="email" name="email" value="{c:out value='{user.uemail}' /}" class="form-control">
</div>

<div class="mb-4">
  <label class="form-label">User Password</label>
  <input type="text" name="password" value="{c:out value='{user.upwd}' /}" class="form-control">
</div>

<div class="mb-4">
  <label class="form-label">Contact</label>
  <input type="text" name="contact" value="{c:out value='{user.umobile}' /}" class="form-control">
</div>

<button type="submit" class="btn btn">Save</button>
</form>

</div>
</div>
</div>
```

Sliate site



## List of Users

[+ Add New User](#)

| ID | Name     | Email                          | Password | Contact    | Actions                                       |
|----|----------|--------------------------------|----------|------------|---|
| 4  | sankam   | KUMARA@GMAIL.COM               | 678      | 0763457345 | <a href="#">Update</a> <a href="#">Delete</a> |
| 8  | sandun   | sandun@gmail.com               | 876      | 0756754437 | <a href="#">Update</a> <a href="#">Delete</a> |
| 9  | wasantha | wasanthajayasinghe95@gmail.com | 123      | 0765789467 | <a href="#">Update</a> <a href="#">Delete</a> |
| 13 | saman    | saman@gmail.com                | 123      | 0767895643 | <a href="#">Update</a> <a href="#">Delete</a> |

# User-list.jsp

```
<div class="container">
  <div class="card p-4">
    <div class="d-flex justify-content-between align-items-center mb-3">
      <h3 class="mb-0">List of Users</h3>
      <a href="<%=request.getContextPath()%>/new" class="btn btn">+ Add New User</a>
    </div>

    <table class="table table-hover table-bordered">
      <thead>
        <tr>
          <th scope="col">ID</th>
          <th scope="col">Name</th>
          <th scope="col">Email</th>
          <th scope="col">Password</th>
          <th scope="col">Contact</th>
          <th scope="col">Actions</th>
        </tr>
      </thead>
      <tbody>
        <c:forEach var="user" items="${listUser}">
          <tr>
            <td><c:out value="${user.id}" /></td>
            <td><c:out value="${user.username}" /></td>
            <td><c:out value="${user.uemail}" /></td>
            <td><c:out value="${user.upwd}" /></td>
            <td><c:out value="${user.umobile}" /></td>
            <td class="actions">
              <a href="edit?id=<c:out value='${user.id}' />" class="text-primary">Update</a>
              <a href="delete?id=<c:out value='${user.id}' />" class="text-danger">Delete</a>
            </td>
          </tr>
        </c:forEach>
      </tbody>
    </table>
  </div>
</div>

<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js"></script>
```



Thank you