

Lab 5 Homework ITCSIU22266

5 Seach student

5.1 update search student in StudentDAO.java

```
public List<Student> searchStudents(String keyword) {
    List<Student> students = new ArrayList<>();
    // Handle null keyword to prevent errors (treat as empty string)
    if (keyword == null) {
        keyword = "";
    }
    // SQL Query: Search across 3 columns using OR logic
    String sql = "SELECT * FROM students WHERE student_code LIKE ? OR full_name LIKE ? OR email LIKE ? ORDER BY id DESC";
    try (Connection conn = getConnection();
         PreparedStatement psmt = conn.prepareStatement(sql)) {
        // Prepare the wildcard pattern
        String searchPattern = "%" + keyword + "%";
        // Fill all three placeholders (?) with the same pattern
        psmt.setString(1, searchPattern); // Checks student_code
        psmt.setString(2, searchPattern); // Checks full_name
        psmt.setString(3, searchPattern); // Checks email
        ResultSet rs = psmt.executeQuery();
        while (rs.next()) {
            Student student = new Student();
            student.setId(rs.getInt("id"));
            student.setStudentCode(rs.getString("student_code"));
            student.setFullName(rs.getString("full_name"));
            student.setEmail(rs.getString("email"));
            student.setMajor(rs.getString("major"));
            student.setCreatedAt(rs.getTimestamp("created_at"));
            students.add(student);
        }
    }
}
```

5.2 update search student in StudentController.java

```
@Override
protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
    String action = request.getParameter("action");
    if (action == null) {
        action = "list";
    }
    switch (action) {
        case "new":
            showNewForm(request, response);
            break;
        case "edit":
            showEditForm(request, response);
            break;
        case "delete":
            deleteStudent(request, response);
            break;
        case "search": // <--- NEW CASE ADDED HERE
            searchStudents(request, response);
            break;
        default:
            listStudents(request, response);
            break;
    }
}
```

55.

```
// Search students
private void searchStudents(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException

    // 1. Get keyword parameter from the form
    String keyword = request.getParameter("keyword");

    List<Student> students;

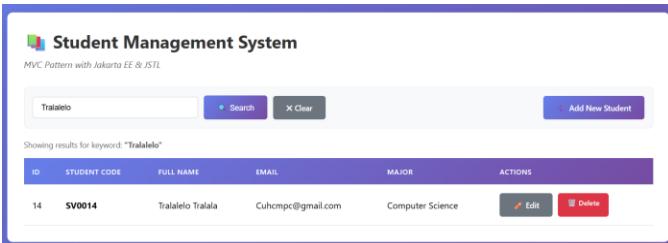
    // 2. Decide which DAO method to call
    // If keyword is null or empty, just show all students
    if (keyword != null && !keyword.trim().isEmpty()) {
        students = studentDAO.searchStudents(keyword);
    } else {
        students = studentDAO.getAllStudents();
    }

    // 3. Set request attributes
    // We send the list of students found
    request.setAttribute("students", students);

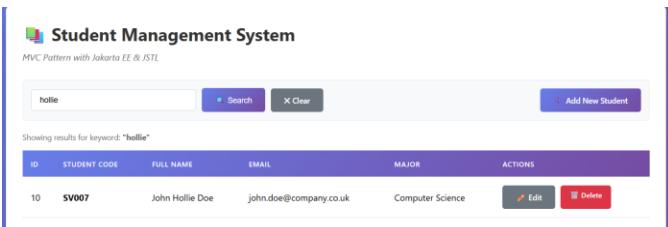
    // We ALSO send the keyword back so we can keep it in the search box (sticky form)
    request.setAttribute("keyword", keyword);

    // 4. Forward to view
    RequestDispatcher dispatcher = request.getRequestDispatcher("student-list.jsp");
    dispatcher.forward(request, response);
}
```

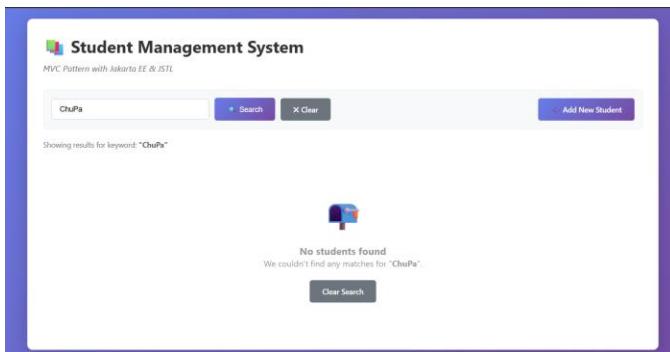
5.3 update form in student-list.jsp



The screenshot shows a search interface for the Student Management System. A search bar contains the text "Tralalelo". Below the search bar is a table with columns: ID, STUDENT CODE, FULL NAME, EMAIL, and MAJOR. One row is visible, showing ID 14, STUDENT CODE SV0014, FULL NAME Tralalelo Tralala, EMAIL Cuhcmpc@gmail.com, and MAJOR Computer Science. To the right of the table are two buttons: "Edit" and "Delete".



The screenshot shows a search interface for the Student Management System. A search bar contains the text "hollie". Below the search bar is a table with columns: ID, STUDENT CODE, FULL NAME, EMAIL, and MAJOR. One row is visible, showing ID 10, STUDENT CODE SV007, FULL NAME John Hollie Doe, EMAIL john.doe@company.co.uk, and MAJOR Computer Science. To the right of the table are two buttons: "Edit" and "Delete".



6 Validation

6.1 update function ValidateStudent

```
private boolean validateStudent(Student student, HttpServletRequest request) {
    boolean isValid = true;

    // 1. Validate Student Code
    String code = student.getStudentCode();
    String codePattern = "[A-Z]{2}[0-9]{3}"; // e.g., SV001, IT123

    if (code == null || code.trim().isEmpty()) {
        request.setAttribute("errorCode", "Student code is required");
        isValid = false;
    } else if (!code.matches(codePattern)) {
        request.setAttribute("errorCode", "Invalid format. Use 2 uppercase letters + 3+ digits (e.g., SV001)");
        isValid = false;
    }

    // 2. Validate Full Name
    String name = student.getFullName();
    if (name == null || name.trim().isEmpty()) {
        request.setAttribute("errorName", "Full name is required");
        isValid = false;
    } else if (name.trim().length() < 2) {
        request.setAttribute("errorName", "Name must be at least 2 characters");
        isValid = false;
    }

    // 3. Validate Email (Optional but must be valid format if provided)
    String email = student.getEmail();
    String emailPattern = "[a-zA-Z0-9_.-]+@[.]+\w+";

    if (email != null && email.trim().isEmpty()) {
        if (!email.matches(emailPattern)) {
            request.setAttribute("errorEmail", "Invalid email format");
        }
    }
}
```

6.2 update student-form.jsp

6.3 update css

+ Add New Student

Student Code *

⚠ Invalid format. Use 2 uppercase letters + 3+ digits (e.g., SV001)

Format: 2 letters + 3+ digits

Full Name *

Email *

Major *

+ Add Student
X Cancel

7 Sorting and Filtering

7.1

ID	Student Code	Full Name	Email	Major	Actions
14	SV0014	Tralaleo Tralala	Cuhmpc@gmail.com	Computer Science	Edit Delete
13	SV0012	Tan Meo	itcsiu22266@student.hcmiu.edu.vn	Computer Science	Edit Delete
12	SV0011	DANG DANG KHOA	dang37421@gmail.com	Computer Science	Edit Delete
11	SV0008	DANG DANG KHOI	khoibk123123@gmail.com	Computer Science	Edit Delete
10	SV0007	John Hollie Doe	john.doe@company.co.uk	Computer Science	Edit Delete
5	SV0005	David Wilson	david.w@email.com	Computer Science	Edit Delete
4	SV0004	John Doe	john.doe@company.co.uk	Computer Science	Edit Delete

