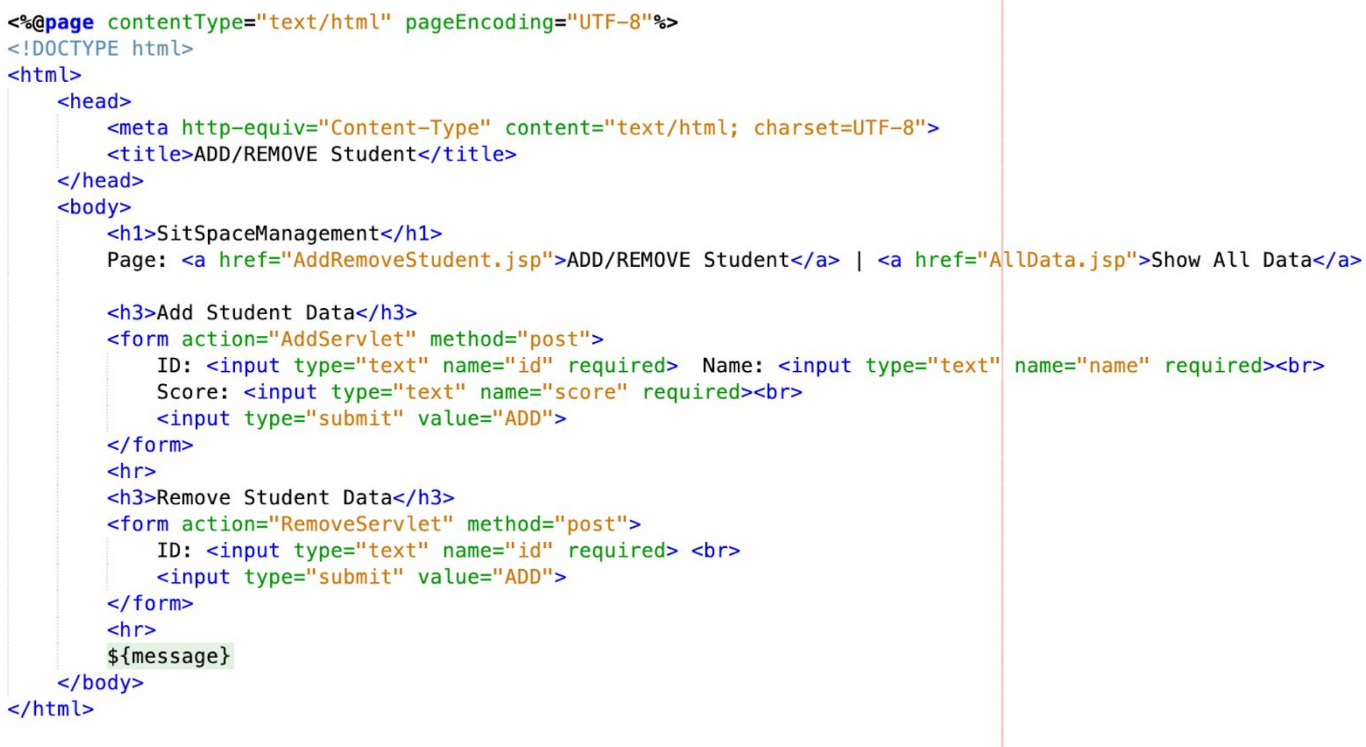
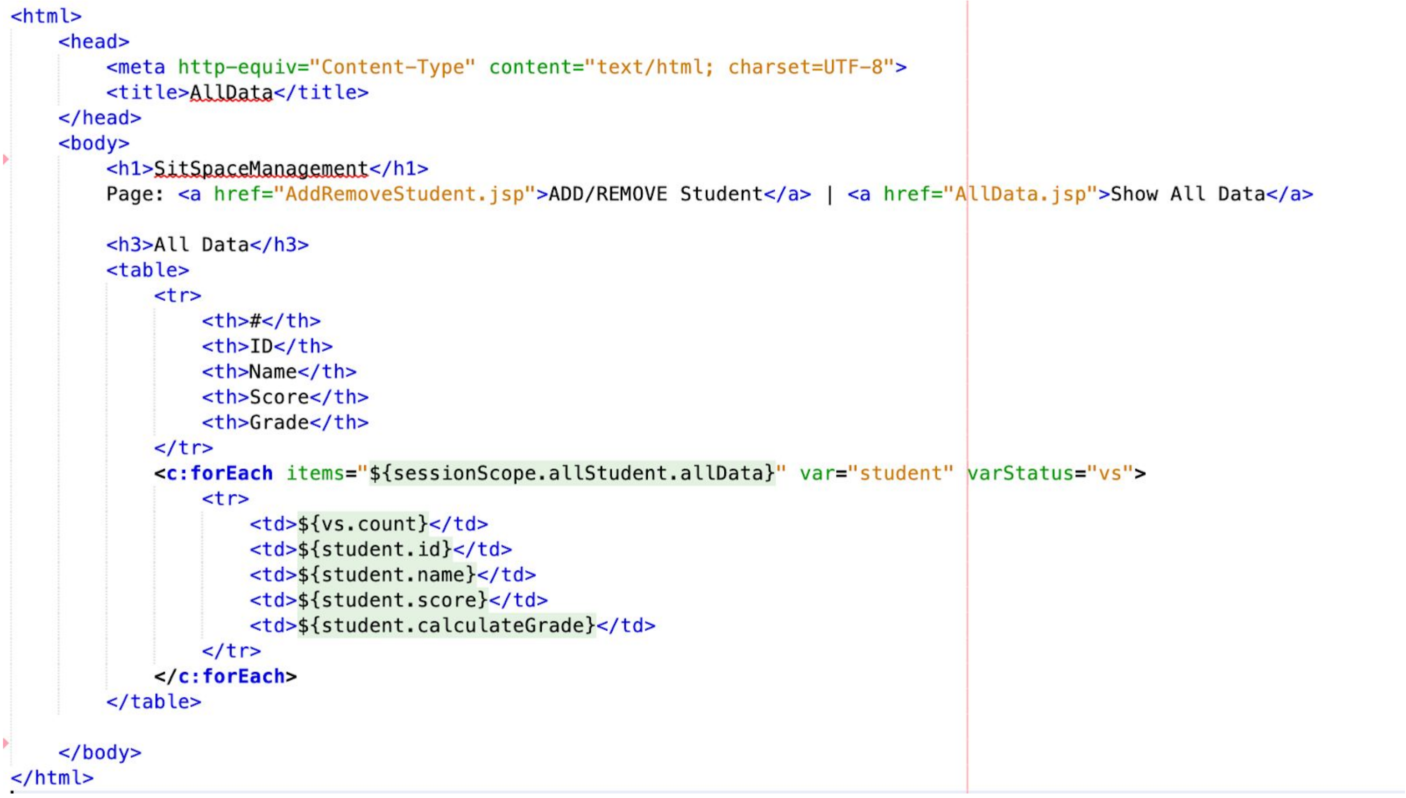
KEY “SitSpaceManagement”

AddRemoveStudent.jsp (KEY)



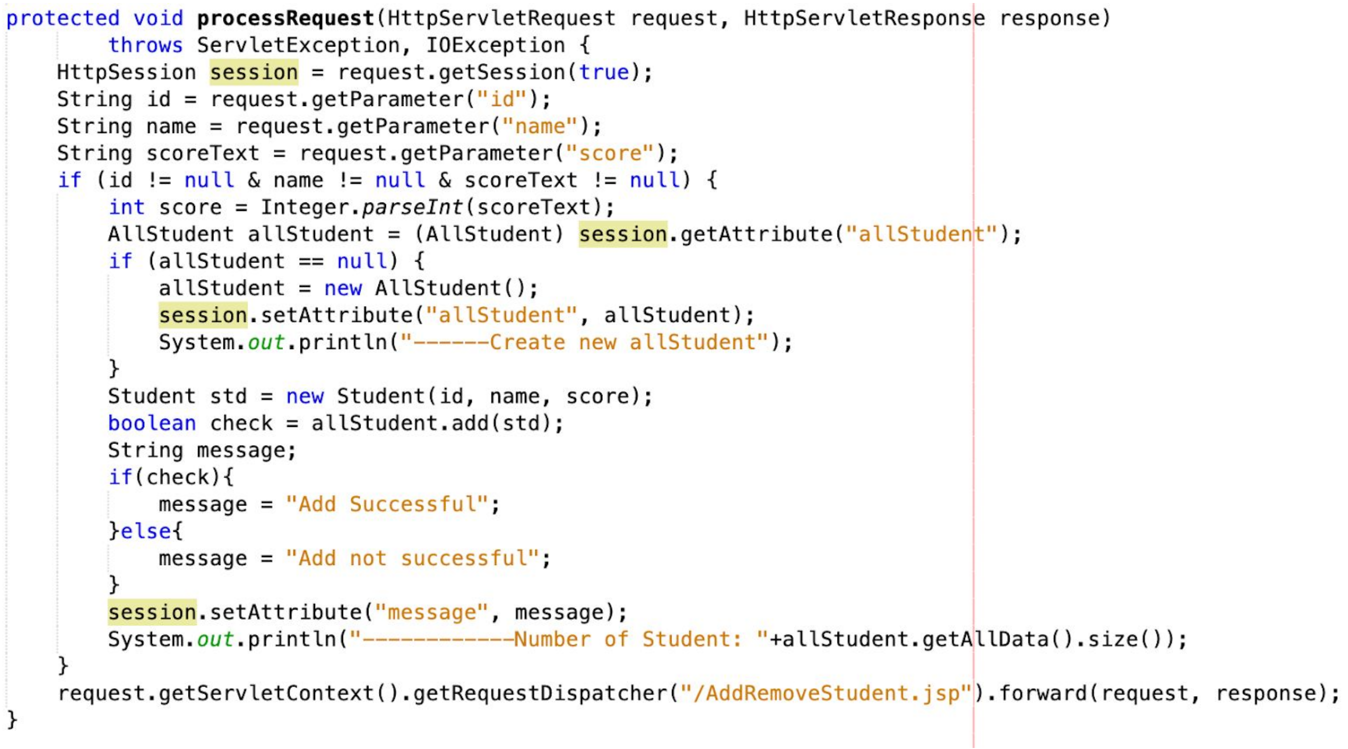
```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>ADD/REMOVE Student</title>
    </head>
    <body>
        <h1>SitSpaceManagement</h1>
        Page: <a href="AddRemoveStudent.jsp">ADD/REMOVE Student</a> | <a href="AllData.jsp">Show All Data</a>

        <h3>Add Student Data</h3>
        <form action="AddServlet" method="post">
            ID: <input type="text" name="id" required>  Name: <input type="text" name="name" required><br>
            Score: <input type="text" name="score" required><br>
            <input type="submit" value="ADD">
        </form>
        <hr>
        <h3>Remove Student Data</h3>
        <form action="RemoveServlet" method="post">
            ID: <input type="text" name="id" required> <br>
            <input type="submit" value="ADD">
        </form>
        <hr>
        ${message}
    </body>
</html>
```

AddData.jsp (KEY)



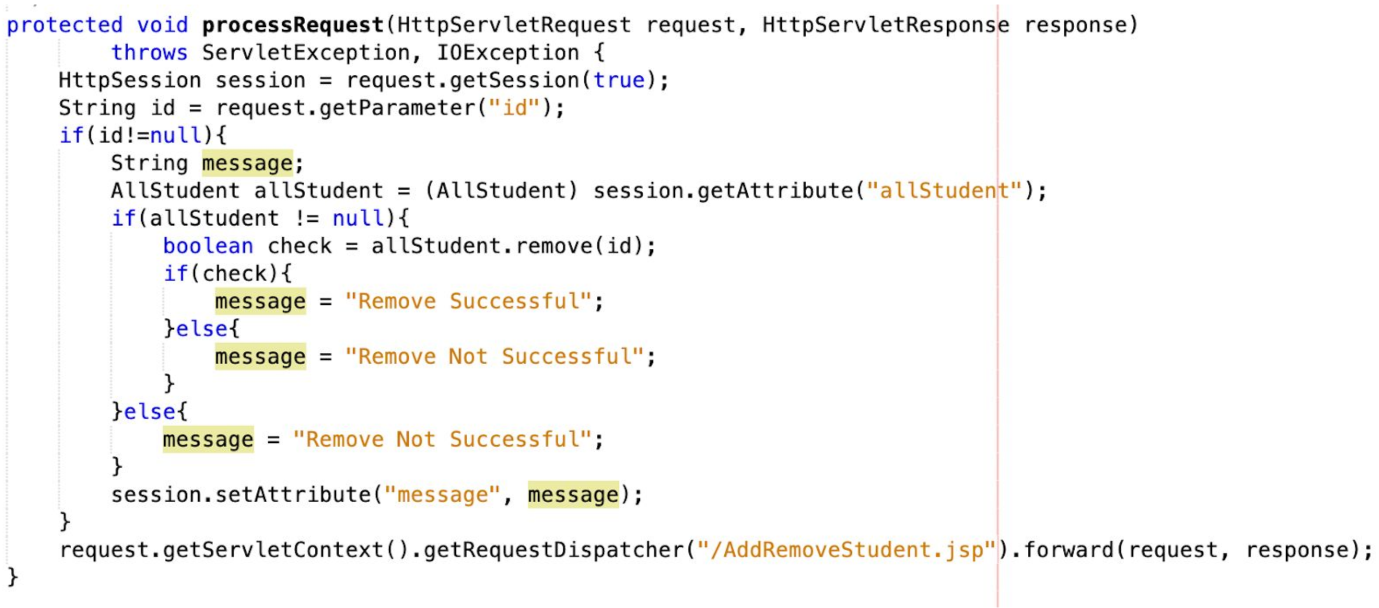
```
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>AllData</title>
    </head>
    <body>
        <h1>SitSpaceManagement</h1>
        Page: <a href="AddRemoveStudent.jsp">ADD/REMOVE Student</a> | <a href="AllData.jsp">Show All Data</a>

        <h3>All Data</h3>
        <table>
            <tr>
                <th>#</th>
                <th>ID</th>
                <th>Name</th>
                <th>Score</th>
                <th>Grade</th>
            </tr>
            <c:forEach items="${sessionScope.allStudent.allData}" var="student" varStatus="vs">
                <tr>
                    <td>${vs.count}</td>
                    <td>${student.id}</td>
                    <td>${student.name}</td>
                    <td>${student.score}</td>
                    <td>${student.calculateGrade}</td>
                </tr>
            </c:forEach>
        </table>

    </body>
</html>
```

AddServlet.java (KEY)



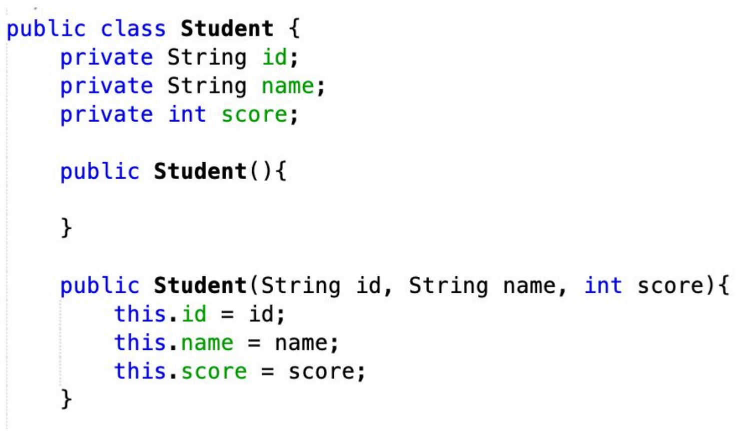
```java
protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    HttpSession session = request.getSession(true);
    String id = request.getParameter("id");
    String name = request.getParameter("name");
    String scoreText = request.getParameter("score");
    if (id != null & name != null & scoreText != null) {
        int score = Integer.parseInt(scoreText);
        AllStudent allStudent = (AllStudent) session.getAttribute("allStudent");
        if (allStudent == null) {
            allStudent = new AllStudent();
            session.setAttribute("allStudent", allStudent);
            System.out.println("------Create new allStudent");
        }
        Student std = new Student(id, name, score);
        boolean check = allStudent.add(std);
        String message;
        if(check){
            message = "Add Successful";
        }else{
            message = "Add not successful";
        }
        session.setAttribute("message", message);
        System.out.println("------------Number of Student: "+allStudent.getAllData().size());
    }
    request.getServletContext().getRequestDispatcher("/AddRemoveStudent.jsp").forward(request, response);
}
```

RemoveServlet (EXAMPLE)

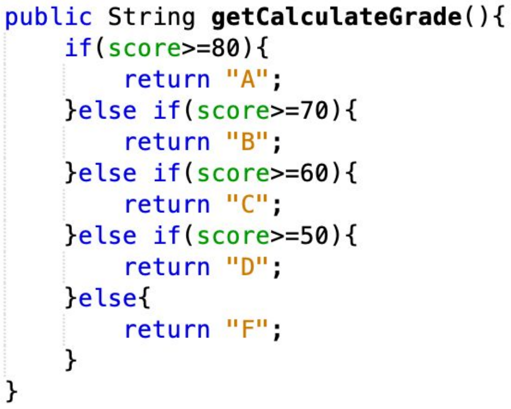


```java
protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    HttpSession session = request.getSession(true);
    String id = request.getParameter("id");
    if(id!=null){
        String message;
        AllStudent allStudent = (AllStudent) session.getAttribute("allStudent");
        if(allStudent != null){
            boolean check = allStudent.remove(id);
            if(check){
                message = "Remove Successful";
            }else{
                message = "Remove Not Successful";
            }
        }else{
            message = "Remove Not Successful";
        }
        session.setAttribute("message", message);
    }
    request.getServletContext().getRequestDispatcher("/AddRemoveStudent.jsp").forward(request, response);
}
```

Student.java (KEY)

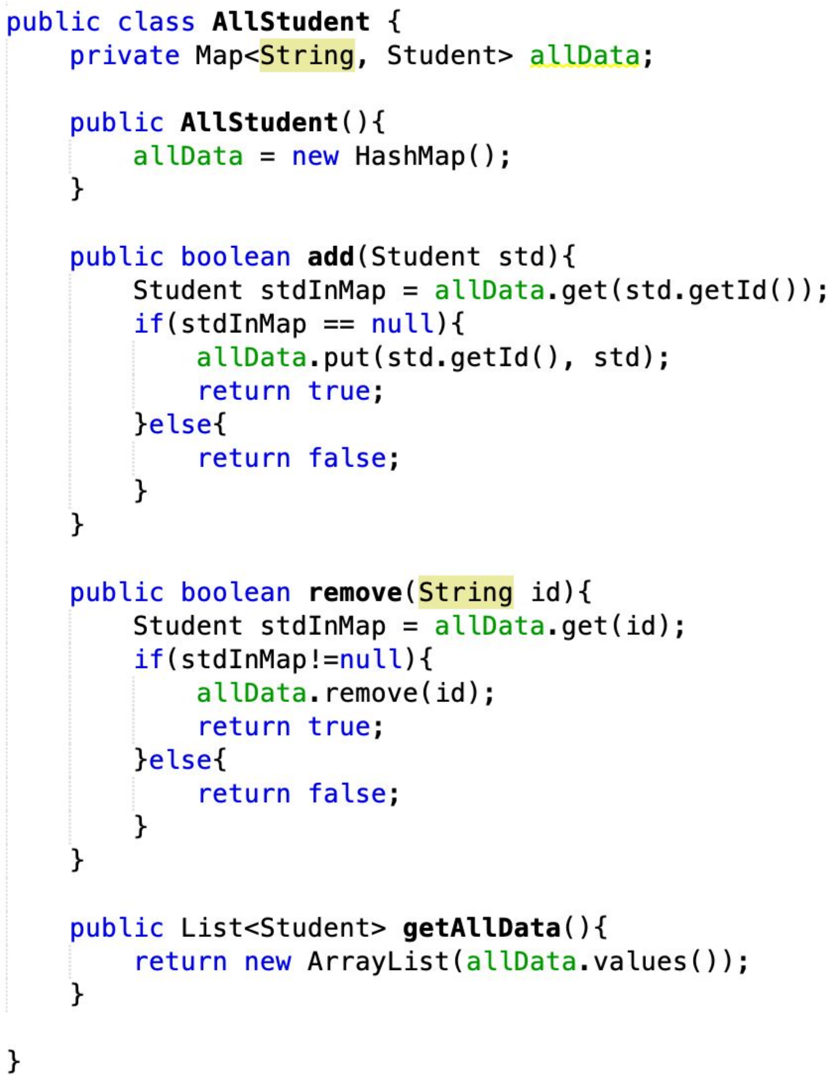


```java
public class Student {
    private String id;
    private String name;
    private int score;

    public Student(){

    }

    public Student(String id, String name, int score){
        this.id = id;
        this.name = name;
        this.score = score;
    }
```



```java
public String getCalculateGrade(){
    if(score>=80){
        return "A";
    }else if(score>=70){
        return "B";
    }else if(score>=60){
        return "C";
    }else if(score>=50){
        return "D";
    }else{
        return "F";
    }
}
```

AllStudent.java (KEY)



```java
public class AllStudent {
    private Map<String, Student> allData;

    public AllStudent(){
        allData = new HashMap();
    }

    public boolean add(Student std){
        Student stdInMap = allData.get(std.getId());
        if(stdInMap == null){
            allData.put(std.getId(), std);
            return true;
        }else{
            return false;
        }
    }

    public boolean remove(String id){
        Student stdInMap = allData.get(id);
        if(stdInMap!=null){
            allData.remove(id);
            return true;
        }else{
            return false;
        }
    }

    public List<Student> getAllData(){
        return new ArrayList(allData.values());
    }

}
```