

Daywise_Assignment_AOP

Model Classes

Course.java

```
package com.example.enrollment.model;
```

```
public class Course {  
    private String id;  
    private String name;  
    private String instructor;  
    private int duration; // in weeks  
  
    // Constructors, Getters & Setters  
}
```

Student.java

```
package com.example.enrollment.model;
```

```
public class Student {  
    private String name;  
    private String email;  
    private String selectedCourseId;  
  
    // Constructors, Getters & Setters  
}
```

(CourseController.java)

```
package com.example.enrollment.controller;
```

```
import org.springframework.stereotype.Controller;  
import org.springframework.ui.Model;
```

```
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.ModelAttribute;
import org.springframework.web.bind.annotation.PostMapping;
import com.example.enrollment.model.Course;
import com.example.enrollment.model.Student;
import com.example.enrollment.service.EnrollmentService;
import java.util.List;
```

```
@Controller
```

```
public class CourseController {
```

```
    private final EnrollmentService enrollmentService;
```

```
    public CourseController(EnrollmentService enrollmentService) {
        this.enrollmentService = enrollmentService;
    }
```

```
    // Display all courses
```

```
    @GetMapping("/courses")
```

```
    public String showCourses(Model model) {
        List<Course> courses = enrollmentService.getAllCourses();
        model.addAttribute("courses", courses);
        return "courses"; // courses.jsp
    }
```

```
    // Show enrollment form
```

```
    @GetMapping("/enroll")
```

```
    public String showEnrollForm(Model model) {
```

```

        model.addAttribute("student", new Student());

        return "enroll"; // enroll.jsp
    }

    // Process enrollment
    @PostMapping("/submitEnrollment")

    public String submitEnrollment(@ModelAttribute Student student, Model model) {

        enrollmentService.enrollStudent(student);

        model.addAttribute("student", student);

        return "success"; // success.jsp
    }
}

```

Service Layer (EnrollmentService.java)

```

package com.example.enrollment.service;

import com.example.enrollment.model.Course;
import com.example.enrollment.model.Student;
import org.springframework.stereotype.Service;
import java.util.ArrayList;
import java.util.List;

@Service

public class EnrollmentService {

    private final List<Course> courses = new ArrayList<>();

    private final List<Student> enrolledStudents = new ArrayList<>();

    public EnrollmentService() {

```

```

// Sample courses
courses.add(new Course("C101", "Spring Boot", "Dr. Smith", 8));
courses.add(new Course("C102", "Java Fundamentals", "Prof. Johnson", 6));
}

public List<Course> getAllCourses() {
    return courses;
}

public void enrollStudent(Student student) {
    enrolledStudents.add(student);
}
}

```

View (JSP Pages)

courses.jsp (**Course Listing**)

```

<%@ page language="java" contentType="text/html; charset=UTF-8" %>
<html>
<head>
    <title>Available Courses</title>
</head>
<body>
    <h1>Available Courses</h1>
    <ul>
        <c:forEach items="${courses}" var="course">
            <li>
                ${course.name} (${course.instructor}) - ${course.duration} weeks
                <a href="/enroll?courseId=${course.id}">Enroll</a>
            </li>
        </c:forEach>
    </ul>

```

```
        </li>
    </c:forEach>
</ul>
</body>
</html>
```

enroll.jsp (**Enrollment Form**)

```
<%@ page language="java" contentType="text/html; charset=UTF-8" %>

<html>
<head>
    <title>Enroll in Course</title>
</head>
<body>
    <h1>Enrollment Form</h1>
    <form action="/submitEnrollment" method="post">
        <input type="hidden" name="selectedCourseId" value="{param.courseId}">
        Name: <input type="text" name="name"><br>
        Email: <input type="email" name="email"><br>
        <input type="submit" value="Submit">
    </form>
</body>
</html>
```

success.jsp (**Confirmation Page**)

```
<%@ page language="java" contentType="text/html; charset=UTF-8" %>

<html>
<head>
    <title>Enrollment Confirmation</title>
</head>
<body>
```

```
<h1>Enrollment Successful!</h1>
<p>Thank you, ${student.name}!</p>
<p>You have enrolled in Course ID: ${student.selectedCourseId}</p>
<p>A confirmation email has been sent to ${student.email}.</p>
</body>
</html>
```

Configuration (WebMvcConfig.java)

```
package com.example.enrollment.config;

import org.springframework.context.annotation.Configuration;
import org.springframework.web.servlet.config.annotation.EnableWebMvc;
import org.springframework.web.servlet.config.annotation.ViewResolverRegistry;
import org.springframework.web.servlet.config.annotation.WebMvcConfigurer;

@Configuration
@EnableWebMvc

public class WebMvcConfig implements WebMvcConfigurer {

    @Override
    public void configureViewResolvers(ViewResolverRegistry registry) {
        registry.jsp("/WEB-INF/views/", ".jsp");
    }
}
```

OrderLoggingAspect.java

```
package com.example.enrollment.aspect;

import org.aspectj.lang.annotation.*;
import org.springframework.stereotype.Component;
```

@Aspect

@Component

public class OrderLoggingAspect {

 @Before("execution(* com.example.enrollment.service.*.*(..))")

 public void logBeforeMethod() {

 System.out.println("[LOG] Method execution started");

 }

 @AfterReturning("execution(* com.example.enrollment.service.*.*(..))")

 public void logAfterSuccess() {

 System.out.println("[LOG] Method executed successfully");

 }

 @AfterThrowing(pointcut = "execution(* com.example.enrollment.service.*.*(..))",
 throwing = "ex")

 public void logAfterError(Exception ex) {

 System.out.println("[ERROR] Exception occurred: " + ex.getMessage());

 }

 @After("execution(* com.example.enrollment.service.*.*(..))")

 public void logAfterMethod() {

 System.out.println("[LOG] Method execution completed");

 }

}