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## Overview

This report documents the technical implementation of a custom error handling system for the course enrollment system. The focus of this update is to enhance the user interface during failure states (403, 404, 500) and provide a centralized logic for managing HTTP error responses.

## Changes Implemented

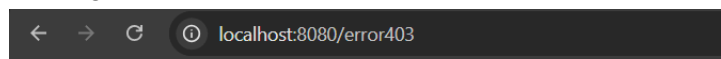
### Error Handling & User Interface

#### 1. Centralized Error Management Logic

- Implemented a custom `MyExceptionHandler` by extending Spring Boot's `ExceptionHandler` interface.
- Utilized `RequestDispatcher.ERROR_STATUS_CODE` to dynamically identify the specific HTTP error occurring on the server.
- **Impact:** Replaces the generic "Whitelabel Error Page" with logic that routes users to specific, meaningful error views.

#### 2. Custom Error Page Templates

- Developed three distinct Thymeleaf templates located in `resources/templates/error/`:
  - **403 (Forbidden):** Notifies users when they lack authorization for a specific action.
  - **404 (Not Found):** Clearly informs users when a requested resource or URL is missing.



**404**

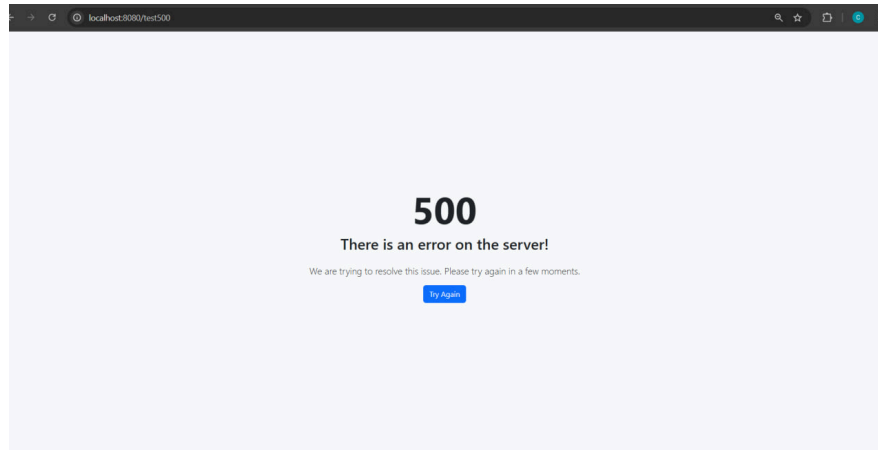
**Can't find the page you're looking for!**

Sorry, the page you are looking for might have been removed or relocated.

[Go Home](#)

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- **500 (Internal Server Error):** Provides a friendly message when a server-side exception occurs.



- **Impact:** Professionalizes the application's appearance and prevents users from seeing confusing system stack traces.

### 3. User Interface Enhancements

- Integrated **Bootstrap 5.3.0** to create responsive, centered error layouts.
- Implemented high-visibility color coding: **Yellow (Warning)** for 403, **Red (Danger)** for 404, and **Dark** for 500 errors.
- Added navigation recovery links ("Go Home" or "Try Again") to every error page to prevent user dead-ends.
- **Impact:** Improves user retention and navigation flow even when errors occur.

### 4. Development & Testing Utilities

- Integrated specific test mappings (`/test403`, `/test500`) within the controller to allow immediate visual validation of the error templates without forcing a system failure.
- **Impact:** Simplifies the Quality Assurance (QA) process and speeds up UI refactoring.
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