

## EduTestPortal — Final Build Summary (Completed & Tested)

### Tech Stack

**Frontend:** JSP, HTML5, CSS3, JSTL

**Backend:** Java Servlets (Jakarta EE), JDBC

**Database:** MySQL

**Security:** BCrypt password hashing

**Server:** Apache Tomcat 10

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### Modules Implemented

#### Student Module

- Login & Registration (bcrypt-secured)
- Dashboard with visible quizzes (filtered by batch)
- Attempt quizzes with real-time **timer + auto-submit**
- Session-based **answer persistence** (no data loss on refresh)
- View quiz results (with percentage, feedback message)
- Edit and delete profile

#### Teacher Module








- Login & Registration (bcrypt-secured)
- Dashboard for quiz management
- Add, edit, delete, and view questions
- Assign quizzes to batches
- View results per quiz with detailed student performance
- Toggle quiz visibility (show/hide)

#### Admin Module

- Login (bcrypt-secured)
- Dashboard with overall statistics (students, teachers, quizzes)
- Manage Students, Teachers, and Quizzes
- View results for any quiz
- Delete or toggle quiz visibility globally

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## Advanced Features

-  Quiz timer with session persistence
-  Real-time answer saving via AJAX
-  Secure password hashing using **BCrypt**
-  Result analytics for teachers & admins
-  Global message system (success/error feedback)
-  Access control with session validation on every servlet
-  Fully tested CRUD operations across all entities

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## Unified Design & Theming

- **Global layout:** Shared header.jsp and layout.css
- **Background:** Education-themed image (bgimg1.png) with dark overlay
- **Glassmorphism containers:** White, semi-transparent cards with subtle blur
- **Unified Navbar:** Sticky, logo on the left, purple accent (#6c63ff)
- **Consistent color system:**
  - Primary: #6c63ff
  - Accent: #5a4fff
  - Background overlay: rgba(0,0,0,0.55)
- **Responsive design:** Works across desktop and tablet viewports