Full Stack Project Module Description Report

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Module 1: User Authentication & Profile Management

Purpose:
Secure access to the portal and personal detail management.

Features:

- Secure login with credentials
- JWT/session-based authentication
- Role-based access control
- View/update personal details
- Password reset/change

Logic:
Credentials validated via Spring Security → JWT/session issued → Role determines access →
Profile data fetched/updated in PostgreSQL via APIs.

Module 2: Results Management

Purpose:
Allow students to access and track academic performance.

Features:

- Semester-wise results
- Subject-wise marks/grades
- GPA/CGPA calculation (optional)
- Historical record access
- Downloadable results (optional)

Logic:
Authenticated request → Backend fetches filtered results from PostgreSQL → React displays in
tables with history/download options.

Module 3: Announcements & Notice Board

Purpose:
Provide institution-wide academic updates.

Features:

- Admin-only create/edit/delete
- Scheduled announcements
- Sorted/urgent feed
- Categorized notices
- Edit/delete logs

Logic:
Admins post via APIs → Stored with metadata in PostgreSQL → Students fetch feed sorted by urgency/date → Scheduled posts auto-publish.

Module 4: Timetable & Scheduling

Purpose:
Display structured class and exam schedules.

Features:

- Class timetable display
- Exam timetable section
- Filter by semester/subject
- Calendar/grid view
- Auto-update on changes

Logic:
Admins upload schedule → Stored in PostgreSQL → Students query by semester → React displays in grid/calendar → Updates auto-reflect.

Module 5: Administration & Deployment

Purpose:
Enable admin management and smooth deployment.

Features:

- Role-based access enforcement
- Results upload/edit
- Timetable creation/editing
- Continuous deployment
- Audit logs

Logic:
Admin login with elevated privileges → Role-based middleware enforces actions → Git + CI/CD handles deployments → PostgreSQL tracks admin logs.