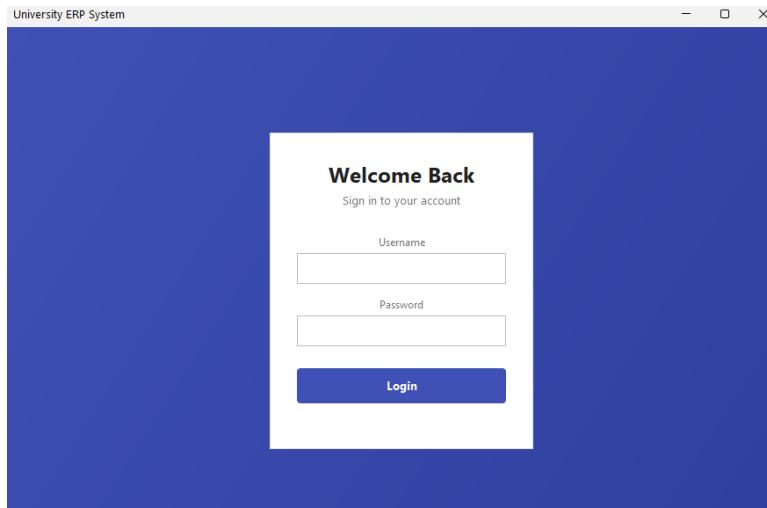


Short Report

These are some of the screenshots of how our ERP project works:



This is the login page

A screenshot of a Windows application window titled "Student Dashboard". The top bar displays the message "Good Morning, stu1! Welcome to IIIT-Delhi." and "Your last login was on Nov 28, 10:06 pm". It includes "Change Pa..." and "Logout" buttons. A green status bar says "✓ System Operating Normally". Below the header, there's a navigation bar with tabs: "Dashboard" (selected), "Course Catalog", "My Registrations", "Timetable", and "Grades & Transcript". The main area contains five cards: "Course Catalog" (blue), "My Registrations" (green), "My Timetable" (purple), "Grades" (orange), and "Transcript" (teal). Each card has a corresponding action link: "Browse Courses", "View Enrolled", "Class Schedule", "View Performance", and "Download Record".

This is the student dashboard

and some more screenshots..

Course Catalog

A screenshot of the "Course Catalog" section of the Student Dashboard. It shows a table with course information. The columns are: Course Code, Title, Credits, Instructor, Day, Start, End, Room, Capacity, Semester, and Year. The table contains several rows of course data.

My registration

A screenshot of the "My Registrations" section of the Student Dashboard. It shows a table with course information. The columns are: Course Code, Title, Credits, Instructor, Day, Start, End, Room, Capacity, Semester, and Year. The table contains several rows of course data.

Student Dashboard

Good Morning, stu1! Welcome to IIIT-Delhi.

Your last login was on Nov 28, 10:06 pm

Change Pa... Logout

✓ System Operating Normally

Dashboard Course Catalog My Registrations Timetable Grades & Transcript

Course Code	Title	Component	Score	Final %	Letter
CS101	Introduction to Program...	Quiz 1	45.0		
CS101	Introduction to Program...	Quiz 2	60.0		
CS101	Introduction to Program...	Midsem	39.0		
CS101	Introduction to Program...	Endsem	42.0		
CS101	Introduction to Program...	Final Grade	44.4	44.4	F

Download Transcript (CSV)

Instructor Dashboard

Instructor Dashboard - Dr.arnav

Manage your sections and student grades

Change Pa... Logout

✓ System Operating Normally

My Sections Section 9 • 3 2024

Roll Number	Quiz 1 (20.0%) /100	Quiz 2 (15.0%) /100	Midsem (30.0%) /100	Endsem (35.0%) /100	Final %	Letter
CS2024001	45	60	39	42	44.4	F

Refresh Save Select... Compute F... View Stats

Instructor Dashboard

Instructor Dashboard - Dr.arnav

Manage your sections and student grades

Change Pa... Logout

✓ System Operating Normally

My Sections Section 9 • 3 2024

Roll Number	Quiz 1 (20.0%) /100	Quiz 2 (15.0%) /100	Midsem (30.0%) /100	Endsem (35.0%) /100	Final %	Letter
CS2024001	45	60	39	42	44.4	F

Information

i Grades saved.

OK

Refresh Save Select... Compute F... View Stats

Instructor Dashboard

Instructor Dashboard - Dr.arnav

Manage your sections and student grades

Change Pa... Logout

✓ System Operating Normally

My Sections Section 9 • 3 2024

Roll Number	Quiz 1 (20.0%) /100	Quiz 2 (15.0%) /100	Midsem (30.0%) /100	Endsem (35.0%) /100	Final %	Letter
CS2024001	45	60	39	42	44.4	F

Information

i Enrolled: 1
Average: 44.40
Highest: 44.40
Lowest: 44.40

OK

Refresh Save Select... Compute F... View Stats

Instructor Dashboard

Instructor Dashboard - Dr.arnav

Manage your sections and student grades

Change Pa... Logout

✓ System Operating Normally

My Sections Section 9 • 3 2024

Roll Number	Quiz 1 (20.0%) /100	Quiz 2 (15.0%) /100	Midsem (30.0%) /100	Endsem (35.0%) /100	Final %	Letter
CS2024001	45	60	39	42	44.4	F

Information

i Final grades computed.

OK

Refresh Save Select... Compute F... View Stats

Admin Dashboard

Administrator Dashboard - admin1

Manage users, courses, sections and system settings

Change Pa... Logout

✓ System Operating Normally

Users Courses Sections Maintenance Backup/Restore

Create Bac... Restore Sel... Delete Sel... Refresh List

Backup Name	Created
backup_2025-11-28_213907	2025-11-28 21:39:07

Backup/Restore Information

- Backups save all data files (courses, sections, enrollments, grades, users)
- Restores will overwrite current data with backup data
- Create backups before major data changes
- Backups are stored in the 'backups' folder

- **Final-Grade Weighting Rule**

Each section uses four fixed assessment components:

- Quiz 1 – 20%
- Quiz 2 – 15%
- Mid-Sem – 30%
- End-Sem – 35%

Instructors enter scores per component; the system enforces that weights total 100% and computes each student's final percentage with

$$\text{Final} = (\text{Quiz1} \times 0.20) + (\text{Quiz2} \times 0.15) + (\text{MidSem} \times 0.30) + (\text{EndSem} \times 0.35).$$

Final percentages are translated to letter grades (A/B/C/D/F) and stored in `final_grades` for transcript/timetable displays.

- **Role & Maintenance Enforcement**

- i) DefaultAccessControlService guards all service calls: `requireRole`/`requireRoleIn` restrict actions to Admin/Instructor/Student as appropriate; `requireOwnership` ensures students modify only their own records.
- ii) Maintenance state lives in `maintenance_settings`. Admin toggles it via the dashboard, which updates the DB and a shared in-memory flag.
- iii) `requireMaintenanceOff` blocks student/instructor write attempts when maintenance is ON, and the UI shows a red banner notifying read-only mode. Admin operations bypass this check so maintenance tasks can proceed.

- **Database Tables**

- **Auth DB (univ_auth_db)**

- auth_users: user_id (PK), username, role, password_hash, active, last_login.
- auth_login_attempts: attempt_id (PK), username FK, attempt_time, success.
- auth_password_history: history_id (PK), user_id FK, old_hash, changed_at.

- **ERP DB (univ_erp_db)**

- students: user_id (PK, FK → auth_users), roll_no, program, year.
- instructors: user_id (PK, FK → auth_users), name, department, title.
- courses: course_id (PK), code, title, credits.
- sections: section_id (PK), course_id FK, instructor_id FK, day, start/end time, room, capacity, semester, year.
- enrollments: enrollment_id (PK), student_id FK, section_id FK, status.
- assessments: assessment_id (PK), section_id FK, name, weight.
- grade_entries: entry_id (PK), enrollment_id FK, assessment_id FK, score.
- final_grades: grade_id (PK), enrollment_id FK, final_percentage, letter_grade.
- maintenance_settings: setting_key (PK), setting_value.

- **Extras Added**

- Login screen shows real-time failed-attempt warnings (bonus security visibility).
- Admin “Sections” tab redesigned with four-button toolbar plus modal dialog for section creation.
- Student dashboard supports transcript download (CSV) with format prompt.
- In-memory mode persists instructor and section data to data/ files so admin changes survive restarts without MySQL.
- Modern UI polish: FlatLaf theme, notification toasts, dashboard cards, shared [UIColors](#) palette for consistent styling.