



INDRAPRASTHA INSTITUTE *of*  
INFORMATION TECHNOLOGY **DELHI**

# CSE201: Advanced Programming Project: University ERP

Documentation / Report

27 November, 2025

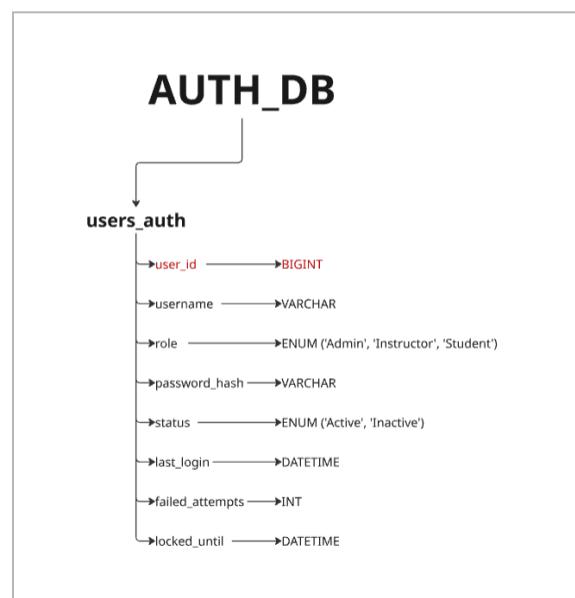
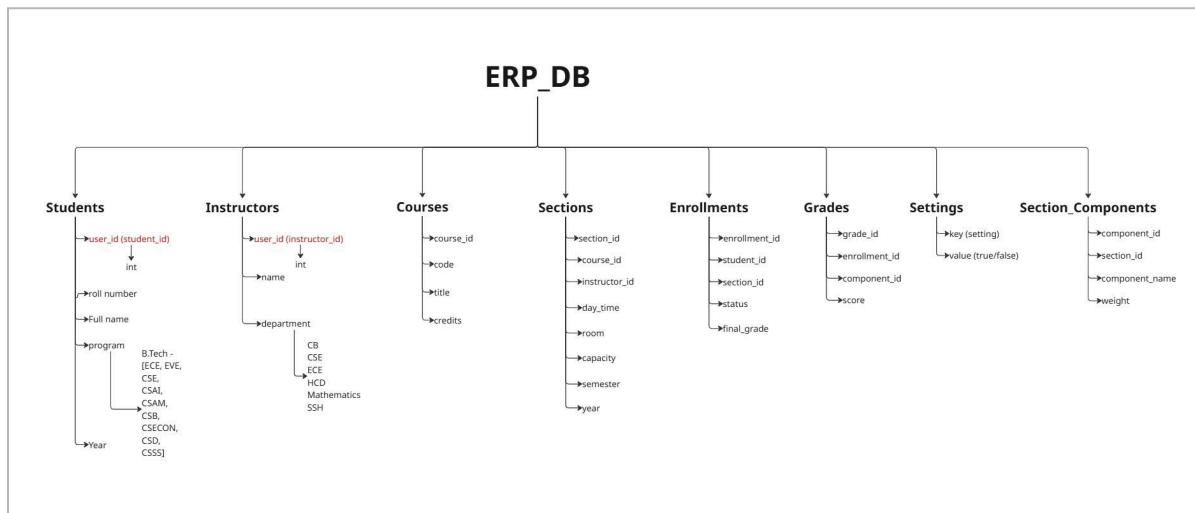
Group 27

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Evani Menon (2024210)  
Nandika Routray (2024371)

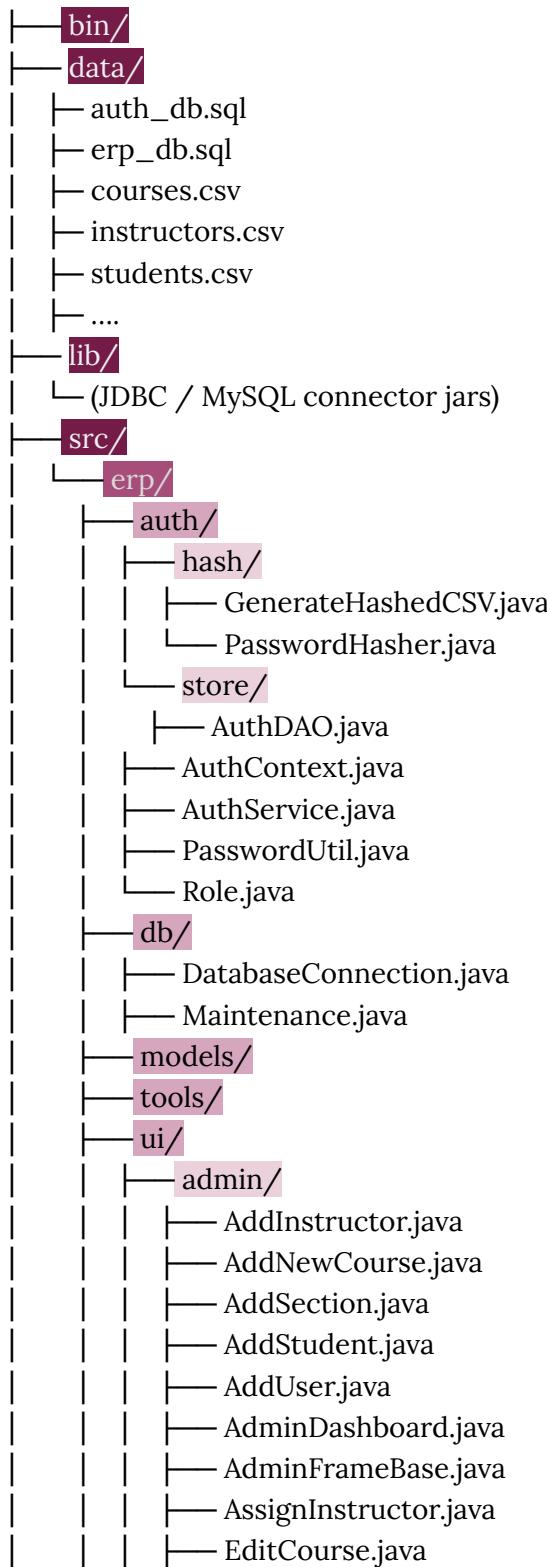
# Database Layout & Implementation:

- We collaboratively used Miro to determine the exact structure of the databases and tables to implement.
- MySQL was used for all database implementations.



## Directory Structure:

IIITD-ACADEMIC-ERP



```
    |   |   ├── EditExistingCourses.java
    |   |   ├── EditSectionDetails.java
    |   |   ├── EditSections.java
    |   |   ├── ManageCourses.java
    |   |   └── instructor/
    |   |       ├── EditComponents.java
    |   |       ├── GradeStudents.java
    |   |       ├── InstructorDashboard.java
    |   |       ├── InstructorFrameBase.java
    |   |       ├── ManageComponents.java
    |   |       └── MySections.java
    |   |   └── student/
    |   |       ├── CourseCatalog.java
    |   |       ├── CourseSectionsDialog.java
    |   |       ├── EnrollmentService.java
    |   |       ├── GradesDialog.java
    |   |       ├── MyRegistrationsFrame.java
    |   |       ├── StudentDashboard.java
    |   |       ├── StudentFrameBase.java
    |   |       ├── StudentLookupService.java
    |   |       ├── StudentTimetableFrame.java
    |   |       └── TranscriptExporter.java
    |   |   └── assets/
    |   |   └── auth/
    |   |       ├── ChangePassword.java
    |   |       └── LoginPage.java
    |   └── Main.java
resources/
.gitignore
APM25 Guidelines.pdf
files.txt
README.md
sources.txt
```

## **Use Case Lists:**

### **1. Admin:**

- Add/edit courses
- Add/edit sections
- Add instructors
- Add students
- Delete users
- Toggle maintenance mode

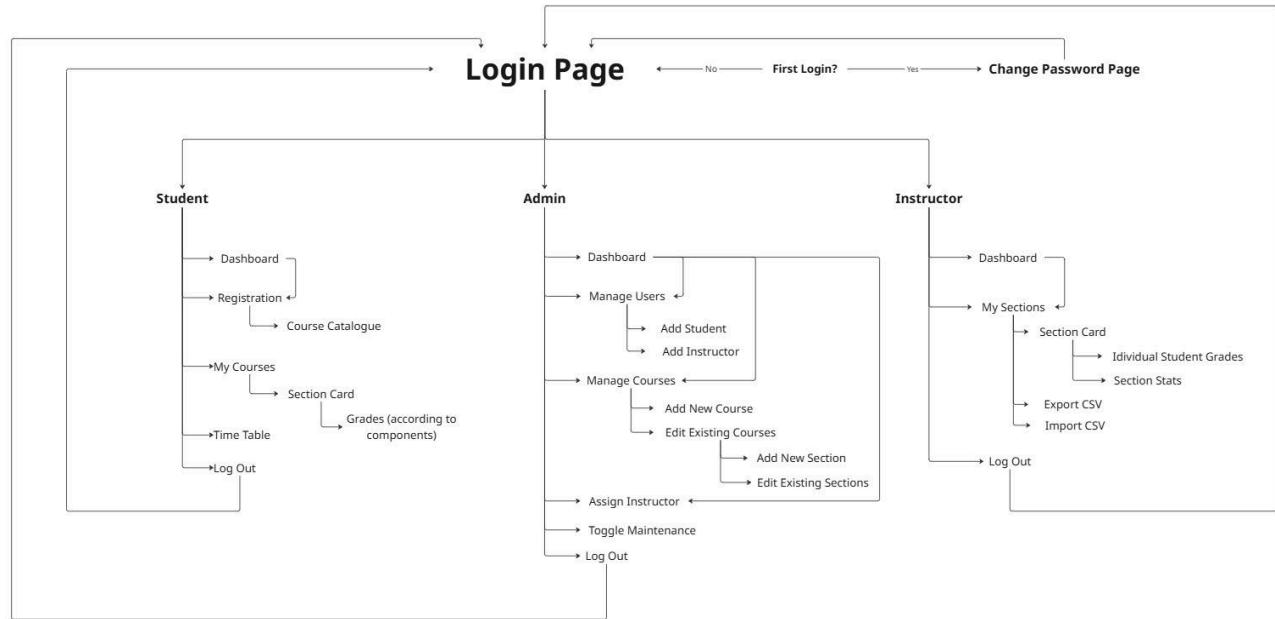
### **2. Instructor**

- View assigned sections
- Edit assessment components
- Enter student grades (CSV or manual)
- Export CSV file of student grades
- View all student grades in all sections
- View class statistics

### **3. Student**

- View course catalogue
- Register for courses (before add/drop deadline)
- Drop courses (before add/drop deadline)
- View timetable/class schedule
- View grades in each component for all registered courses
- View final grades

## UI Screens Layout:



## Final-Grade Weighting Implementation:

- Each student enrolling for a course is stored in the 'enrollments' table. Each student registering for a particular course section has a unique enrollment\_id.

```
mysql> describe enrollments;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default |
+-----+-----+-----+-----+-----+
| enrollment_id | int | NO | PRI | NULL |
| student_id | varchar(64) | NO | MUL | NULL |
| section_id | int | NO | MUL | NULL |
| status | enum('REGISTERED', 'DROPPED') | NO | | REGISTERED |
| final_grade | decimal(5,2) | YES | | NULL |
+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)
```

- Similarly, each student in a particular course section will get one final grade. This grade is also stored in the 'enrollments' table, mapped by the enrollment\_id.

- A separate table ‘section\_components’ has entries with unique ‘component\_id’s as primary keys. It stores all the components along with their weightage for every section (identified by section\_id).

```
mysql> describe section_components;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| component_id | int | NO | PRI | NULL | auto_increment |
| section_id | int | NO | MUL | NULL |
| component_name | varchar(100) | NO | | NULL |
| weight | int | NO | | NULL |
+-----+-----+-----+-----+
4 rows in set (0.01 sec)
```

- The ‘grades’ table utilises the enrollment\_id from the enrollments table and the component\_id from the section\_components table to store individual grades for each student in every component across all their registered sections.

```
mysql> describe grades;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| grade_id | int | NO | PRI | NULL |
| enrollment_id | int | NO | MUL | NULL |
| component_id | int | NO | | NULL |
| score | decimal(5,2) | YES | | NULL |
+-----+-----+-----+-----+
4 rows in set (0.01 sec)
```

#### Final grade calculation rule:

For every component of a section, the system multiplies the **score obtained by the student** (entered by the instructor) with the **component weightage** (from the section\_components table), and then sums all weighted values:

$$\text{Final Grade} = \sum (\text{score}_i \times \text{weight}_i)$$

This computation runs when the instructor submits grades.

After the calculation, the result is written back to the final\_grade column in ‘enrollments’

## Password Hashing & Authentication

- Passwords are never stored or compared in plain text.
- At account creation or password change, the application uses **BCrypt** to convert the user's password into a secure, irreversible hash.

### BCrypt Features:

- It is one-way (you can't reverse it)
- It includes a salt automatically (prevents two identical passwords from producing the same hash)

```
String hashed = BCrypt.hashpw(plainPassword, BCrypt.gensalt(12));
```

- The plain password is never saved.
- gensalt(12) adds a random salt and sets the work factor to 12.

```
BCrypt.checkpw(enteredPassword, storedHash);
```

- During login, the entered password is hashed again and then compared to the stored hash.
- If the two hashes match → login succeeds.  
Otherwise → login fails.
- If login fails more than 5 times, then the account is locked for 1 minute.

## Sessions & Roles

After successful login, the system creates a session object containing:

- userId
- username
- role (STUDENT / INSTRUCTOR / ADMIN)

This session is stored in **AuthContext**, which is globally readable by all UI screens and service classes.

Before any user specific screen is opened, and before the corresponding backend action runs, the system checks the user's role. If the role does not match the allowed permissions for that feature, the UI refuses to open and the method returns without executing the

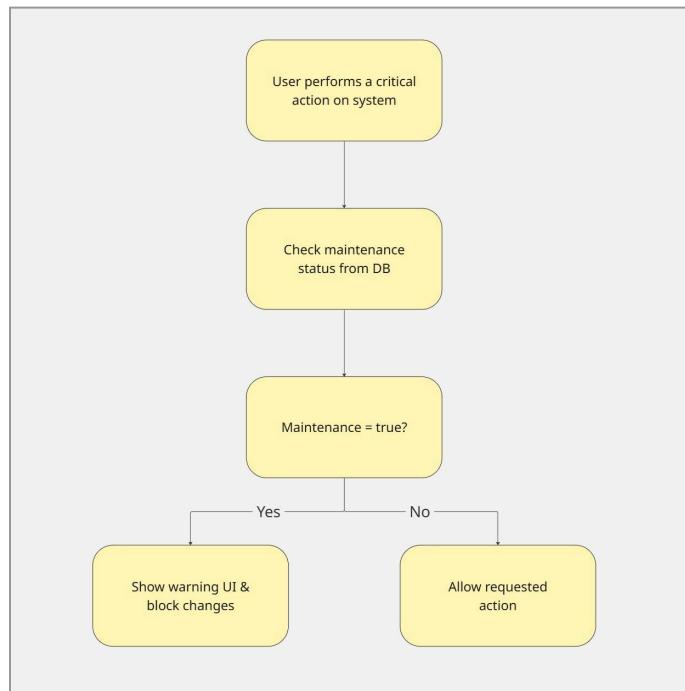
logic. So even if someone tries to bypass the interface or trigger actions/screens through terminal, the backend will block it.

So, all the use cases stay limited to only the relevant user.

## Maintenance Mode Implementation

The 'settings' table stores global settings such as Add/Drop Deadline and Maintenance Mode Toggle. A boolean setting (setting\_key = 'Maintenance') in the settings table controls whether the ERP should run normally or restrict activity.

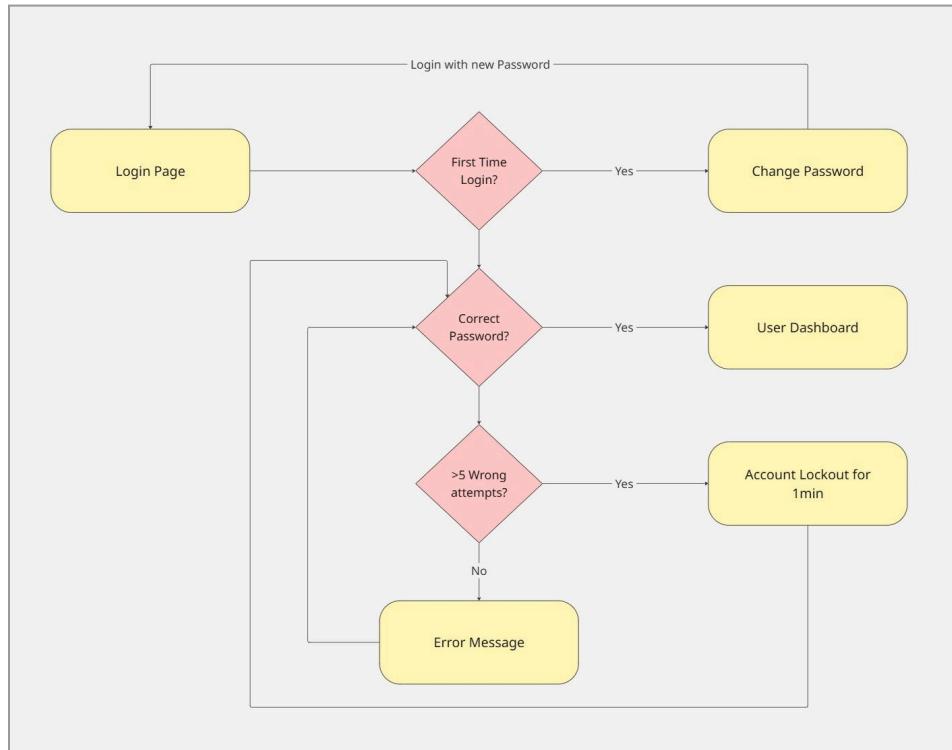
- At startup and during key operations, the system queries settings through Maintenance.isOn().
- If maintenance mode is ON, the UI displays a warning banner on the top of the page and blocks actions such as creation, update, and deletion. Users can only perform actions which are view-only.
- Admins can toggle the flag in the database using Maintenance.turnOn() and Maintenance.turnOff(). These methods update the database, making the change instant across all running clients since each screen re-checks maintenance state from the database before executing critical actions.



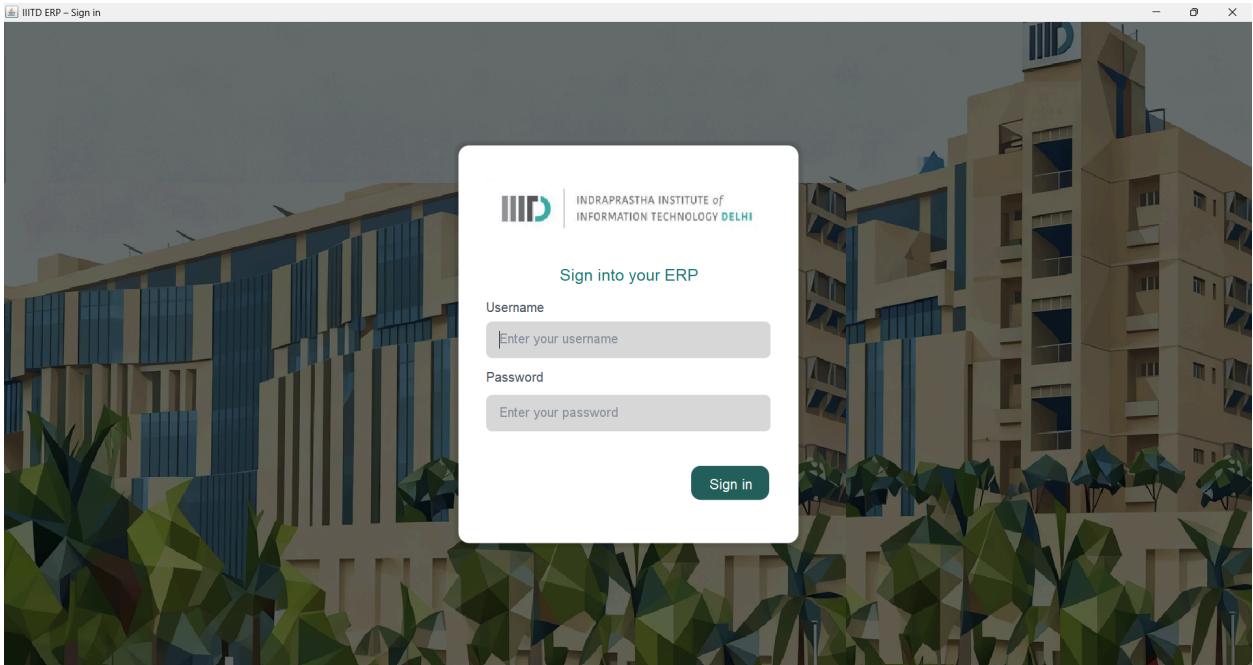
# Tech Stack

Component	Implementation
UI	Java Swing
Database	MySQL
Connection Pooling	HikariCP
Password Hashing	BCrypt (via org.mindrot.jbcrypt)
Data Transfer	JDBC + PreparedStatement
Logging	java.util.logging
Files Import / Export	CSV → Table Bootstrap + Transcript Export

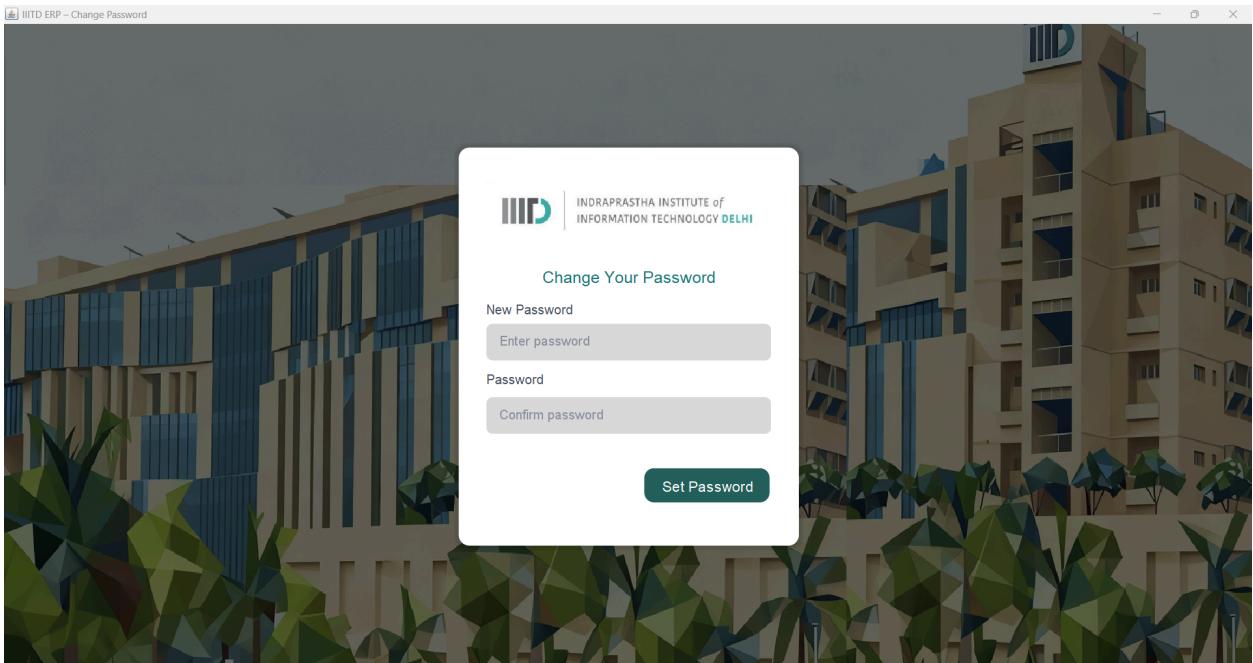
## General UI Flow - Login



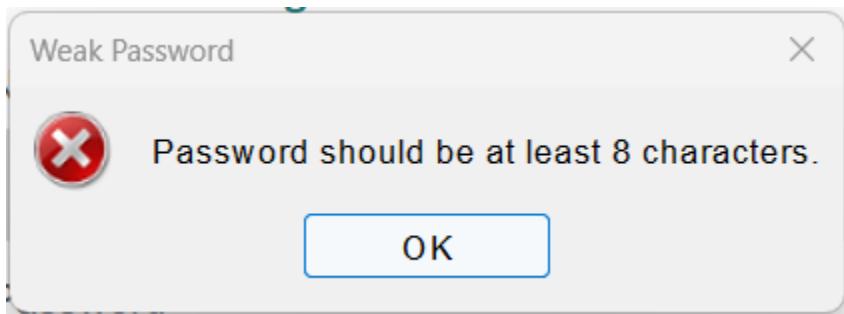
## Login Page:



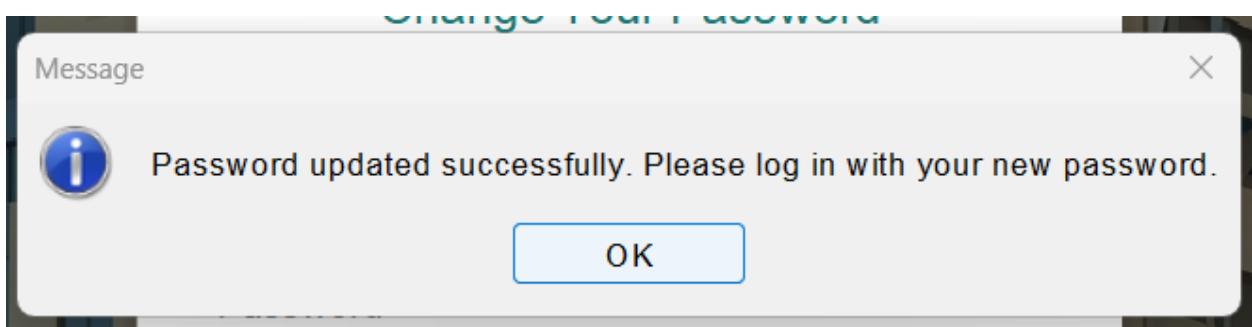
## First Time Login:



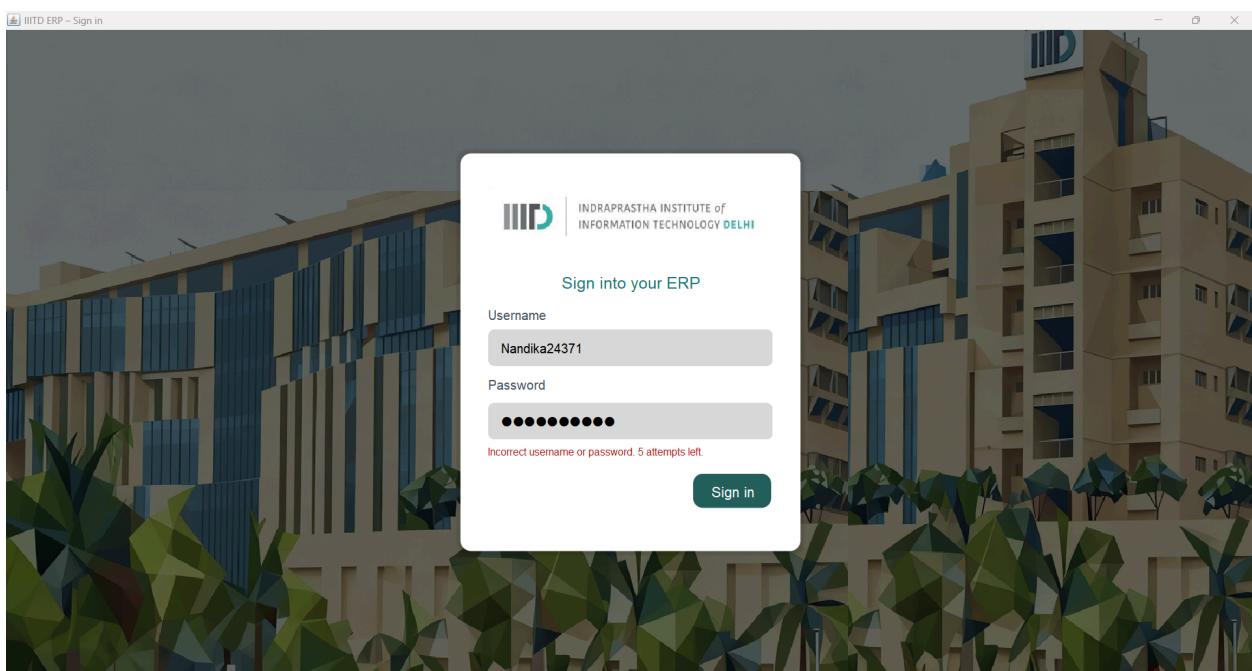
Password < 8 characters (weak password)



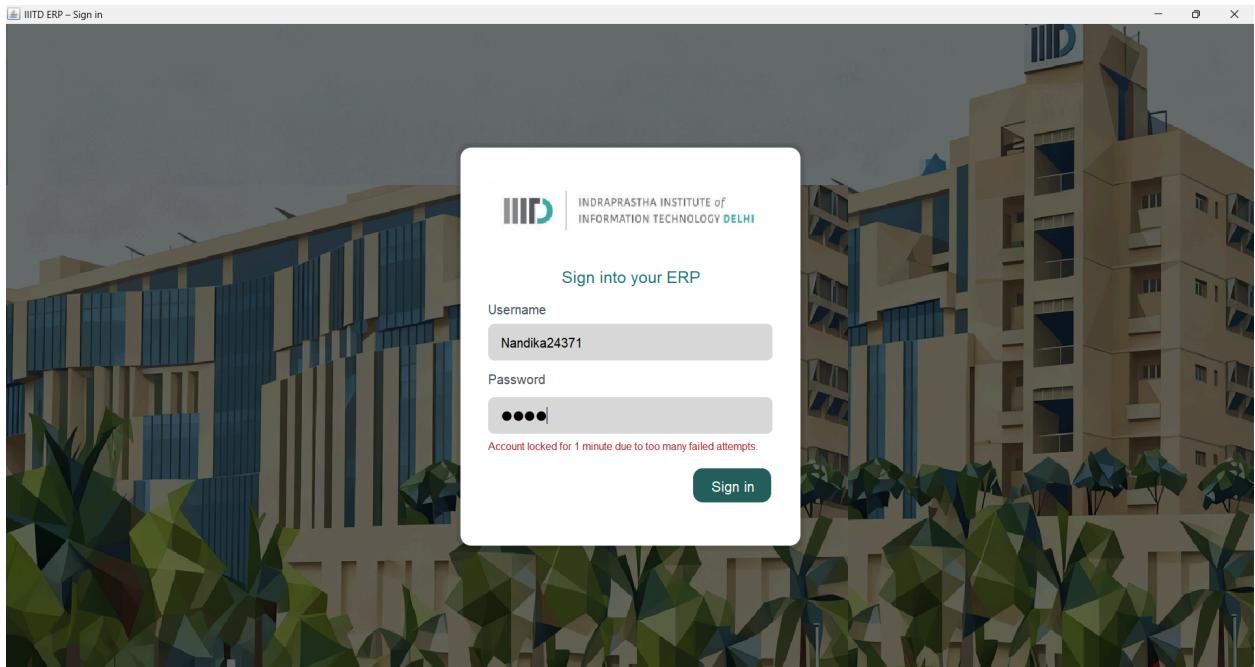
Password Changed Successfully:



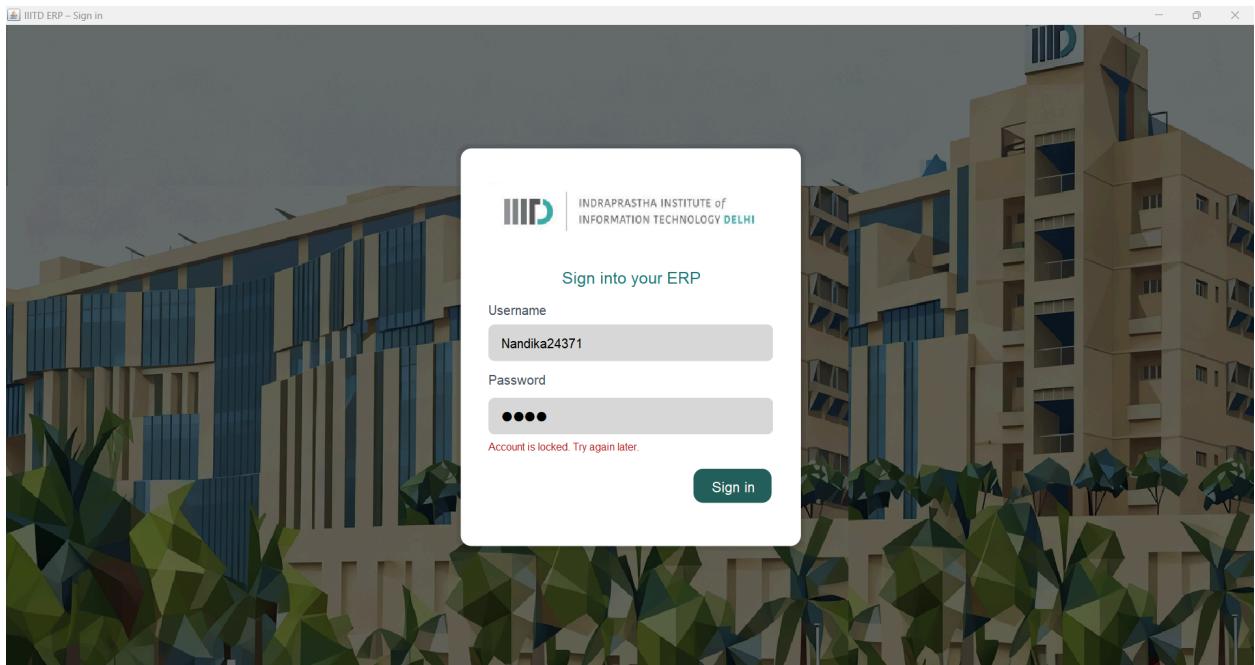
Wrong Password entered at login:



More than 5 failed login attempts:

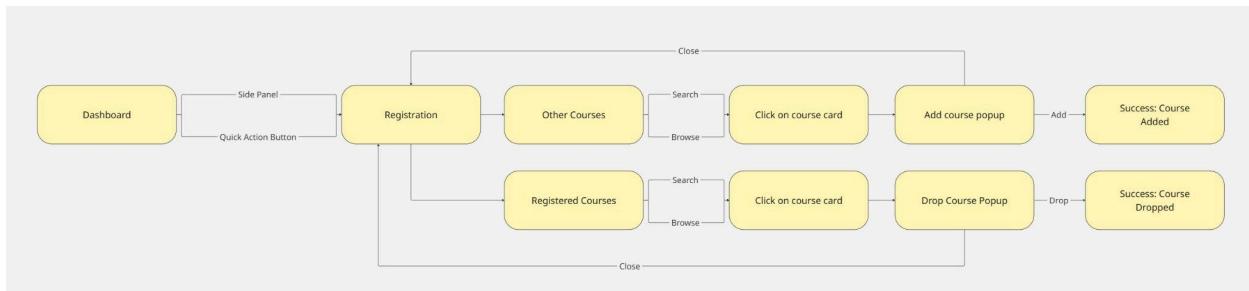


If user tries to login while account is locked:



# Student UI Flows:

## Flow 1 - Register for or Drop a Course



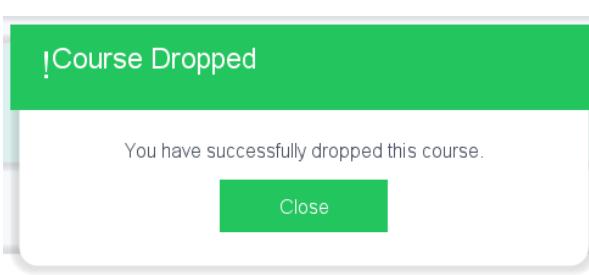
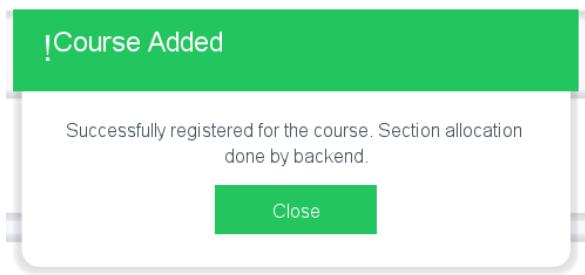
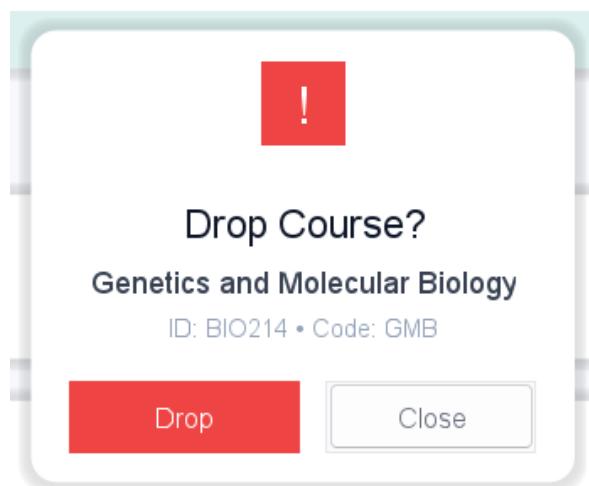
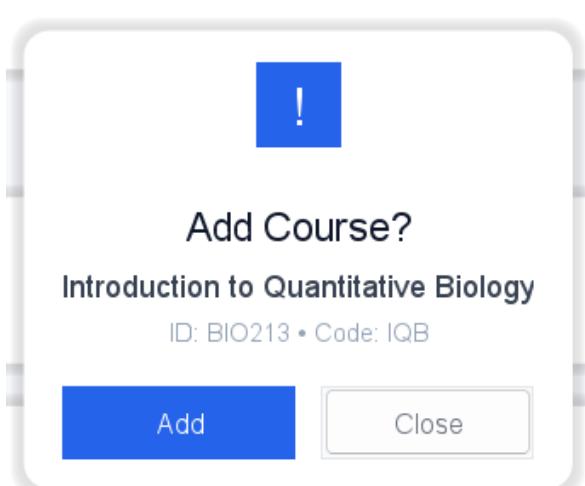
## Dashboard:

The screenshot shows the student dashboard for 'EVANI MENON'. The top navigation bar displays the date '28 November 2025', the name 'Welcome, EVANI MENON', and the student ID 'Program: null • Year null'. On the right, there is a profile icon and the name 'EVANI MENON Studen'. The left sidebar contains links for 'Home' (which is active), 'Registration', 'My Courses', 'Time Table', 'Log Out', and 'Settings'. The main content area includes a summary section with '0 Registered Courses' (Number of enrollments for this term) and '0 Total Credits' (Sum of course credits you registered for). Below this is a 'Registered Courses' section stating 'Current term enrollments No courses registered yet.' To the right is a 'Calendar November 2025' showing the days of the week (M, T, W, T, F, S, S) and the dates from 1 to 30. The date '28' is highlighted in a dark blue box. At the bottom right is a 'Today's Timetable' section stating 'Based on your registered courses No classes found for today.'

## Registration:

The screenshot shows the 'Current Courses' section of the IIITD ERP Course Catalog. On the left, there's a sidebar with a user profile for 'NANDIKA ROURAY' and links for 'Home', 'Registration' (which is active), 'My Courses', 'Time Table', and 'Log Out'. The main area is titled 'Current Courses' and contains two sections: 'Registered Courses' and 'Other Courses'. Under 'Registered Courses', there are two cards: 'Foundations of Biology II' by Gaurav A. (2/60, Registered) and 'Genetics and Molecular Biology' by Instructor 3 (1/45, Registered). Under 'Other Courses', there are four cards: 'Foundations of Biology' by TBA (0/0), 'Foundations of Biology-I' by TBA (0/0), 'Cell Biology and Bio-Chemistry' by TBA (0/0), and 'Introduction to Quantitative Biology' by Jaspreet K. (1/60). A search bar at the top right says 'Search courses...'. The entire interface has a clean, modern design with a dark teal header and light gray background.

Click on a Course card from “Other Courses” | Course card from “Registered Courses”



## Registration page after adding IQB and Dropping GMB:

The screenshot shows the IIITD ERP Course Catalog interface. On the left, there is a dark sidebar with a user profile placeholder, the name "NANDIKA ROUTRAY", and a "Year, Program" field. Below this are links for "Home", "Registration" (which is highlighted), "My Courses", "Time Table", and "Log Out". The main content area is titled "Current Courses" and contains two sections: "Registered Courses" and "Other Courses".

**Registered Courses**

- Foundations of Biology II**  
Gaurav A.  
ID: BIO201 • Code: FOB-II  
2/60  
Registered
- Introduction to Quantitative Biology**  
Jaspreet K.  
ID: BIO213 • Code: IQB  
2/60  
Registered

**Other Courses**

- Foundations of Biology**  
TBA  
ID: BIO101 • Code: FOB  
0/0
- Foundations of Biology-I**  
TBA  
ID: BIO102 • Code: FOB-I  
0/0
- Cell Biology and Bio-Chemistry**  
TBA  
ID: BIO211 • Code: CBB  
0/0
- Genetics and Molecular Biology**  
Instructor 3  
ID: BIO214 • Code: GMB  
0/45
- Practical Bioinformatics**  
TBA  
ID: BIO215 • Code: PBB  
0/0

A search bar at the top right says "Search courses...".

## Flow 2 - View Registered Courses and Grades & Download Transcript

My Courses:

The screenshot shows the 'My Courses' section of the IIITD ERP system. It lists three courses:

- ABC – Course 1**: Course ID ABC101 • 4 credits. Instructor: Instructor 1. Wed 08:00-09:00 • Room B213. Monsoon 2025. Final Grade: B.
- XYZ – Course 2**: Course ID ABC102 • 4 credits. Instructor: Instructor 2. Thu 11:00-12:30 • Room A204. Monsoon 2025. Final Grade: C.
- AP – Advanced Programming**: Course ID CSE201 • 4 credits. Instructor: Samabdhi C. Mon 11:00-12:30 • Room Lab-203. Monsoon 2025. Final Grade: A.

Each course card includes a table of component scores and a progress bar.

Clicking on “Download Transcript”:

The screenshot shows the 'My Courses' section with a 'Download Transcript (PDF)' button clicked. A save dialog box is open, asking to save the file as 'transcript\_stu1.pdf'. The dialog also shows a preview of the transcript content and file format options.

A sample downloaded grades transcript will look like this:

Unofficial Transcript  
Student: Student 1 (stu1)

ABC – Course 1  
Course ID: ABC101 | Credits: 4 | Term: Monsoon 2025  
Instructor: Instructor 1  
Final Grade: B

Component	Score / Weight
Quizzes	25.0 / 25.0
Midsem	15.0 / 30.0
Endsem	28.0 / 30.0
Assignments	12.0 / 15.0

XYZ – Course 2  
Course ID: ABC102 | Credits: 4 | Term: Monsoon 2025  
Instructor: Instructor 2  
Final Grade: C

Component	Score / Weight
Quizzes	30.0 / 30.0
Midsem	15.0 / 20.0
Endsem	21.0 / 30.0
Labs	5.0 / 20.0

AP – Advanced Programming  
Course ID: CSE201 | Credits: 4 | Term: Monsoon 2025  
Instructor: Sambuddho C.  
Final Grade: A

Component	Score / Weight
Midsem	25.0 / 25.0
Endsem	25.0 / 25.0
Assignment 1	10.0 / 10.0
Assignment 2	10.0 / 10.0
Quizzes	10.0 / 10.0
Project	20.0 / 20.0

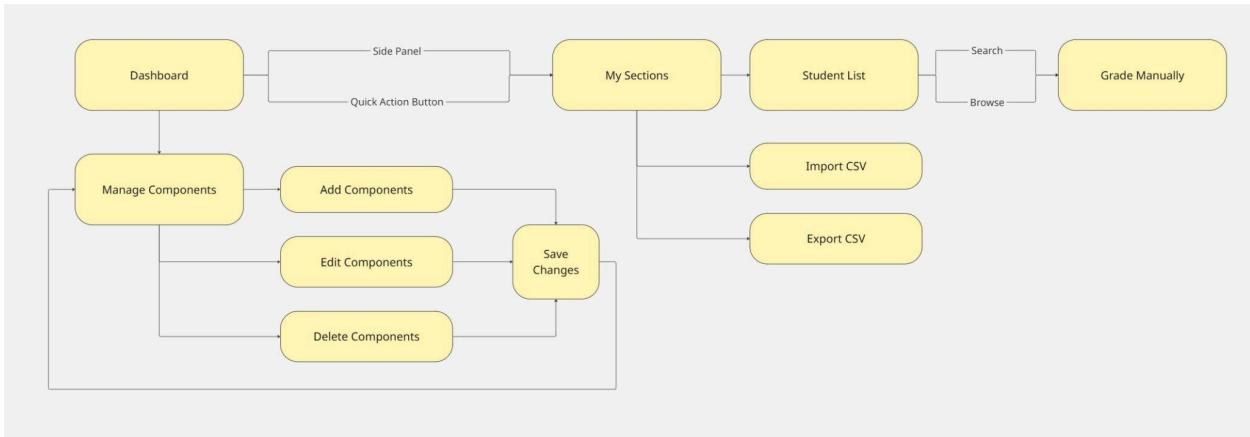
## Flow 3 - View Time Table

The screenshot shows the IIITD ERP - Time Table application interface. On the left, there is a sidebar with a user profile placeholder, the name "EVANI MENON", and "Year, Program". The sidebar also contains links for Home, Registration, My Courses, Time Table (which is highlighted in green), Log Out, and Settings.

The main content area is titled "Class Schedule" and displays a weekly grid from Monday to Sunday. The schedule is as follows:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
08:00-09:00	DS M203						
09:00-10:30							
10:45-12:15		AP Lab-203					
11:00-12:30							
13:00-14:00			IQB B201				
14:00-15:30				FOB-II B203			
16:00-17:30		OS C201					

# Instructor UI Flow:



## Dashboard:

The screenshot shows the 'IIITD ERP – Instructor Dashboard' window. The top navigation bar displays the date '27 November 2025' and a welcome message 'Welcome back, gaurav!'. Below the header, there are three summary cards: '0 Sections this semester', '0 Students across sections', and 'Items to grade'. The main content area includes a 'Today's Teaching Schedule' section listing 'CSE101 – Introduction to Programming' from '09:00 – 10:30 • C-101'. Another section lists 'BIO201 – Foundations of Biology II' from '11:00 – 12:30 • B-204' and 'MTH201 – Linear Algebra' from '14:00 – 15:30 • A-102'. On the right, a 'Quick Actions' sidebar offers links to 'My Sections', 'This Week' (with a note about an upcoming quiz), and 'Publish feedback for Assignment 1'. The left sidebar provides navigation links for 'Home', 'My Sections', 'Manage Components', 'Settings', and 'Log Out', with 'Home' currently selected.

## My Sections

The screenshot shows the 'My Sections' page of the IIITD ERP system. On the left is a sidebar with a user profile for 'inst1' (Department: CSD) and links for Home, My Sections (which is selected), Manage Components, Settings, and Log Out. The main content area displays a single section card for 'ABC101'. The card includes the section code, schedule ('Section 3 • Wed 08:00-09:00'), room ('Room B213 • Monsoon 2025'), and capacity ('Capacity: 2'). The top right of the card shows the message 'Logged in as inst1'.

Clicking on Section Card:

The screenshot shows the detailed statistics for 'ABC101 — Section 3'. The sidebar on the left remains the same. The main content area includes a back button ('Back to My Sections'), a save changes button ('Save Changes'), and export/import buttons ('Export CSV' and 'Import C...'). The section details show 2 students in the section, a mean final percentage of 78.5%, and 2 students with grades. Below this are two charts: 'Average score per component' (Quizzes: 22, Midsem: 18, Endsem: 27, Assignments: 12) and 'Final grade distribution' (Number of students: ≥ 80%: 2, 70-79%: 1, 60-69%: 0, 50-59%: 0, < 50%: 0). At the bottom is a table of student grades:

Roll No	Full Name	Quizzes (25)	Midsem (30)	Endsem (30)	Assignments (15)	Final Grade
1	Student 1	25.0	15.0	28.0	12.0	80.0
2	Student 2	19.0	21.0	25.0	12.0	77.0

## Manage Components:

IITD ERP – Instructor

**Course 1 (ABC101)**  
Semester: Monsoon 2025 | Schedule: Wed 08:00-09:00 | Room: B213 | Capacity: 2

Current Components		
Quizzes	25.0	<b>Remove</b>
Midsem	30.0	<b>Remove</b>
Endsem	30.0	<b>Remove</b>
Assignments	15.0	<b>Remove</b>

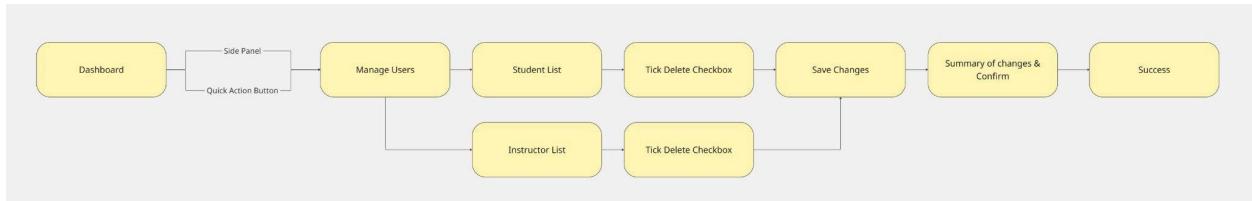
Component Name      Weight (%)

+ Add Component

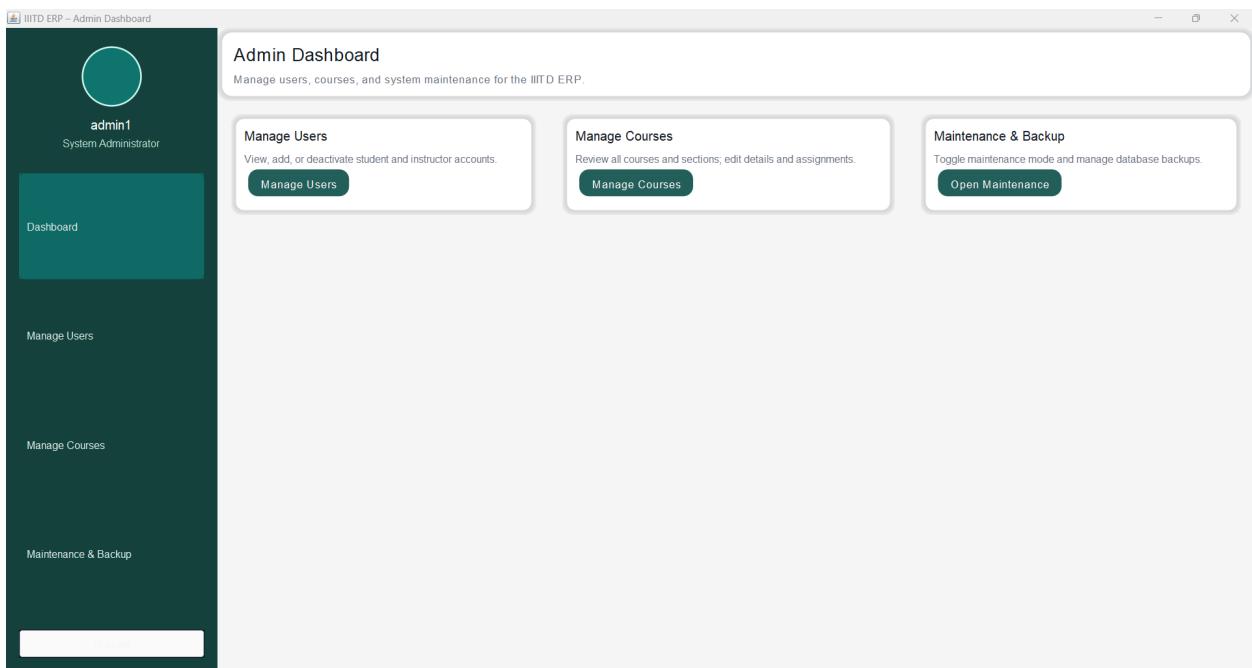
Cancel      Save Changes

# Admin UI Flows:

## Flow 1 - Delete a user



## Dashboard:



## Manage Users:

The screenshot shows the 'User Management' interface with a sidebar on the left containing 'Dashboard', 'Manage Users' (selected), 'Manage Courses', and 'Maintenance & Backup'. The main area has a title 'User Management' and a subtitle 'Manage all users in one place. Control access and monitor activity.' It includes a search bar and buttons for 'Add Student', 'Add Instructor', 'Save Changes', 'Export', 'Import', and 'Back'. The 'Students' section displays a table with columns: User ID, Username, Role, Full Name, Roll No, Program, Year, Status, Last Login, and Delete?. The table contains 12 rows of student data.

User ID	Username	Role	Full Name	Roll No	Program	Year	Status	Last Login	Delete?
3	stu1	student					active	-	<input type="checkbox"/>
4	stu2	student					active	-	<input type="checkbox"/>
2024001	aadi24001	student					active	-	<input type="checkbox"/>
2024003	aaditya24003	student					active	-	<input type="checkbox"/>
2024004	aaditya24004	student					active	-	<input type="checkbox"/>
2024005	aakarshan24005	student					active	-	<input type="checkbox"/>
2024006	aanshi24006	student					active	-	<input type="checkbox"/>
2024007	aanya24007	student					active	-	<input type="checkbox"/>
2024008	aarav24008	student					active	-	<input type="checkbox"/>
2024009	aarush24009	student					active	-	<input type="checkbox"/>
2024010	aaryan24010	student					active	-	<input type="checkbox"/>
2024011	aashish24011	student					active	-	<input type="checkbox"/>
2024012	aastha24012	student					active	-	<input type="checkbox"/>

**Instructors**

User ID	Username	Role	Full Name	Department	Status	Last Login	Delete?
...	...	...	...	...	...	...	...

## Checked Delete Boxes:

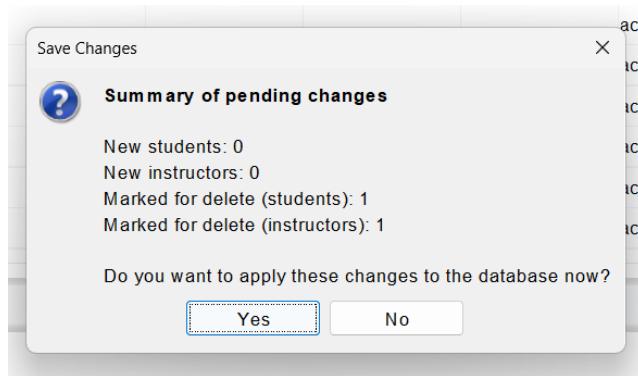
The screenshot shows the 'User Management' interface with the same sidebar and layout as the first screenshot. The 'Students' section shows several rows with their 'Delete?' checkboxes checked, indicated by a blue background. The 'Instructors' section also shows rows with checked 'Delete?' checkboxes. The table headers for both sections are identical to the first screenshot.

User ID	Username	Role	Full Name	Department	Status	Last Login	Delete?
2024004	aaditya24004	student			active	-	<input type="checkbox"/>
2024005	aakarshan24005	student			active	-	<input checked="" type="checkbox"/>
2024006	aanshi24006	student			active	-	<input type="checkbox"/>
2024007	aanya24007	student			active	-	<input type="checkbox"/>
2024008	aarav24008	student			active	-	<input type="checkbox"/>
2024009	aarush24009	student			active	-	<input type="checkbox"/>
2024010	aaryan24010	student			active	-	<input type="checkbox"/>
2024011	aashish24011	student			active	-	<input type="checkbox"/>
2024012	aastha24012	student			active	-	<input type="checkbox"/>

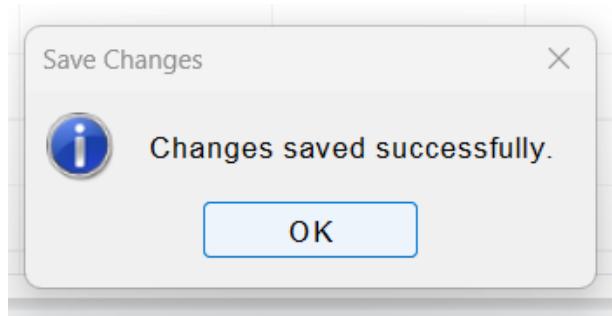
**Instructors**

User ID	Username	Role	Full Name	Department	Status	Last Login	Delete?
1000029	anupam	instructor	Anupam S.	ENT	active	-	<input type="checkbox"/>
1000030	neera	instructor	Neera C.	SSH	active	-	<input type="checkbox"/>
1000031	aheli	instructor	Aheli C.	ENT	active	-	<input type="checkbox"/>
1000032	debarka	instructor	Debarka S.	BIO	active	-	<input type="checkbox"/>
1000033	arjun	instructor	Arjun R.	BIO	active	-	<input type="checkbox"/>
1000034	sriram	instructor	Sriram K.	BIO	active	-	<input checked="" type="checkbox"/>
1000035	vibhor	instructor	Vibhor K.	BIO	active	-	<input type="checkbox"/>

### Save Changes Popup:



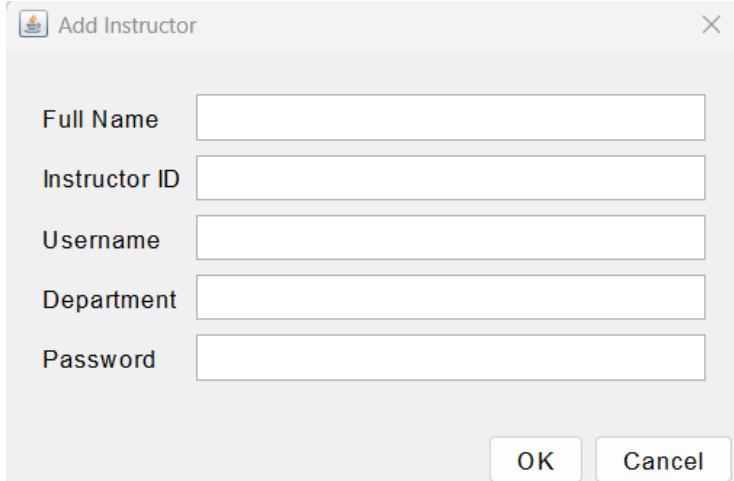
### Success:



### Add Student:

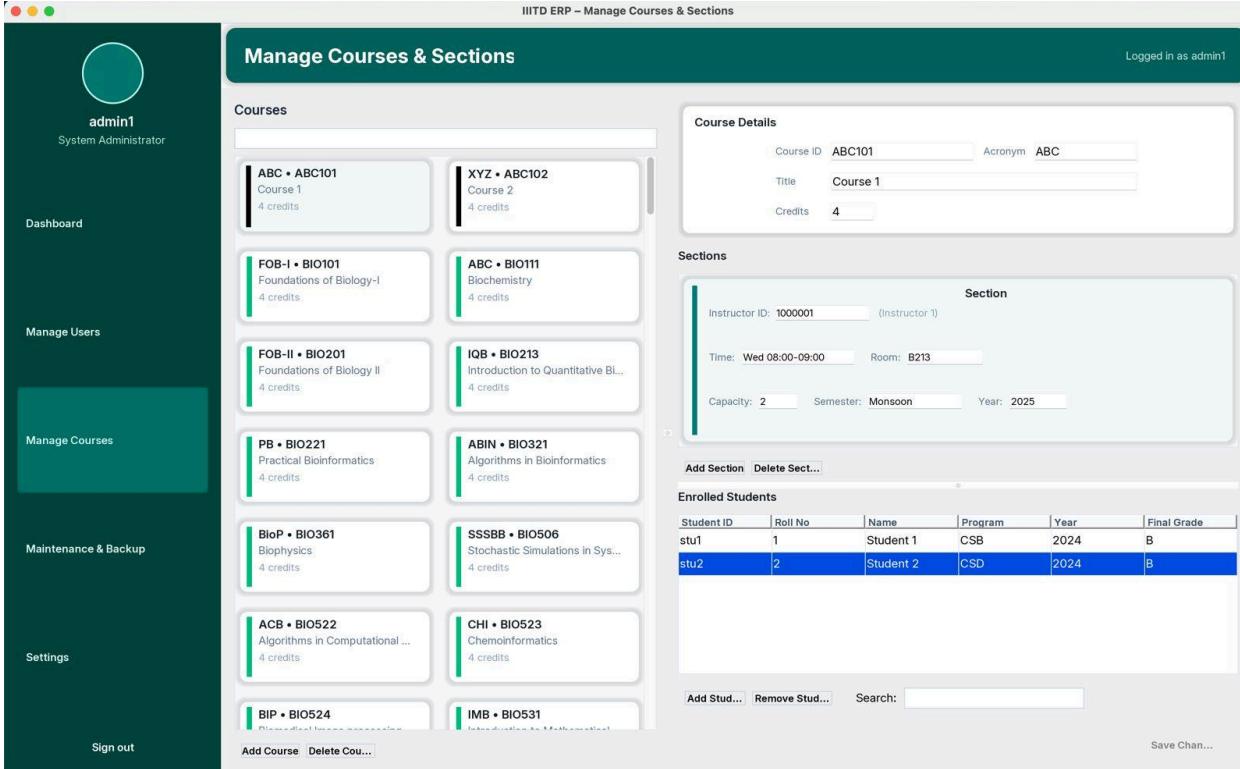
A screenshot of an 'Add Student' dialog box. The title bar includes a small student icon and the text 'Add Student'. The dialog contains seven text input fields labeled 'Full Name', 'Student ID', 'Username', 'Roll No', 'Program', 'Year', and 'Password'. At the bottom of the dialog are two buttons: 'OK' and 'Cancel'.

## Add Instructor:

A screenshot of a "Add Instructor" dialog box. It contains five input fields: "Full Name", "Instructor ID", "Username", "Department", and "Password". Below the fields are two buttons: "OK" and "Cancel".

## Flow 2 - Add/Delete/Manage Courses & Sections:

### Manage Courses:

A screenshot of the "Manage Courses & Sections" interface. The left sidebar shows navigation options: Dashboard, Manage Users, Manage Courses (selected), Maintenance & Backup, and Settings. The main area has a title "Manage Courses & Sections". On the left, there's a grid of course cards. On the right, there are three sections: "Course Details" (Course ID: ABC101, Acronym: ABC, Title: Course 1, Credits: 4), "Sections" (Instructor ID: 1000001, Time: Wed 08:00-09:00, Room: B213, Capacity: 2, Semester: Monsoon, Year: 2025), and "Enrolled Students" (a table with rows for stu1 and stu2). At the bottom, there are buttons for "Add Sect...", "Delete Sect...", "Add Stud...", "Remove Stud...", "Search:", and "Save Chan...".

## Deleting a course:

The screenshot shows the 'Manage Courses & Sections' interface. On the left sidebar, 'Manage Courses' is selected. In the main area, a course card for 'ABC • ABC102' is highlighted. A confirmation dialog box titled 'Confirm Delete Course' appears, asking 'Delete course ABC102?' with options 'Cancel' and 'OK'. The course details panel shows 'Course ID: ABC102', 'Title: Course 2', and 'Credits: 4'. The sections panel lists 'Section' (Instructor: 2), 'Room: A204', 'Semester: Monsoon', and 'Year: 2025'. The enrolled students table is empty.

## Searching for a Student:

The screenshot shows the same application interface. A search dialog box titled 'Student Not Found' appears, stating 'No student found for value: 2024691' with an 'OK' button. The course details panel shows 'Course ID: ABC101', 'Title: Course 1', and 'Credits: 4'. The sections panel lists 'Section' (Instructor ID: 1000001), 'Time: 10-09:00', 'Room: B213', 'Semester: Monsoon', and 'Year: 2025'. The enrolled students table shows two entries: 'stu1' and 'stu2'. The table headers are 'Student ID', 'Roll No.', 'Name', 'Program', 'Year', and 'Final Grade'.

## Flow 3 - Maintenance Mode:

### Maintenance & Backup Page:

The screenshot shows the 'Maintenance & Backup' page. On the left sidebar, under the 'Maintenance & Backup' section, the 'Maintenance Mode' button is highlighted. The main content area displays the 'Maintenance Mode' settings, which are currently off. It includes a toggle switch labeled 'Turn ON maintenance mode...' and a note about its purpose: 'When maintenance is ON, students and instructors can only view data. Use this while performing critical updates or backups.' Below this, there's a 'Backup & Data Export' section with options for exporting core user tables, selected tables, or importing from CSV.

### Toggle maintenance mode ON:

The screenshot shows the 'Maintenance & Backup' page after the maintenance mode has been turned on. A modal dialog titled 'Maintenance Mode' is displayed, showing a green status bar with the text 'Maintenance mode is now ON.' and a red button labeled 'Turn OFF maintenance mode...'. The background page remains largely the same, with the 'Maintenance Mode' button still highlighted on the sidebar.

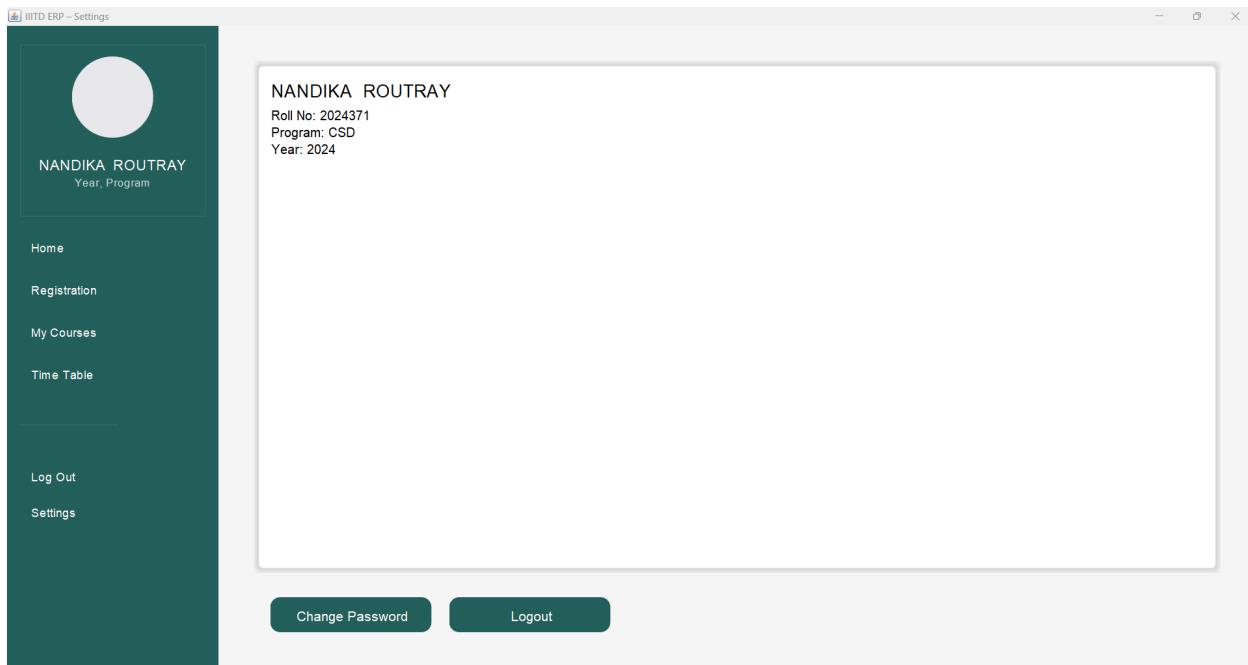
Student tries to register for a course → blocked:

The screenshot shows a student's dashboard with a sidebar on the left containing 'Student 1' profile, 'Home', 'Registration' (which is highlighted), 'My Courses', 'Time Table', 'Log Out', and 'Settings'. The main area is titled 'IITD ERP – Course Catalog' and displays 'Current Courses' under 'Registered Courses'. It lists 'Course 1' and 'Course 2' both marked as '2/2 Registered'. Below them is 'Advanced Programming' by Sambuddho C. with '2/120 Registered'. Under 'Other Courses', there are five courses: 'Foundations of Biology-I' (TBA), 'Biochemistry' (Sambuddho C.), 'Foundations of Biology II' (Gaurav A.), and 'Introduction to Quantitative Biology' (Jaipreet K.). A prominent red modal window in the center says 'Maintenance mode' and states 'You cannot add or drop courses while the system is in maintenance mode.' with a 'Close' button.

Admin Toggles maintenance mode OFF:

The screenshot shows an admin's dashboard with a sidebar on the left containing 'admin1' profile, 'System Administrator', 'Dashboard', 'Manage Users', 'Manage Courses', 'Maintenance & Backup' (which is highlighted), and 'Settings'. The main area is titled 'IITD ERP – Maintenance & Backup' and has a 'Back to Dashboard' button. It features a 'Maintenance Mode' section with a radio button set to 'OFF' and a 'Confirm Maintenance Mode' button. Below it is a 'Backup & Data' section with options like 'Download CSV', 'Export core user...', 'Export selected table...', and 'Import from CSV (coming soon)'. A confirmation dialog box in the center asks 'Turn OFF maintenance mode and re-enable editing?' with 'No' and 'Yes' buttons, where 'Yes' is highlighted in blue.

## General Flow - Settings:



## Change Password:

