Testing Pack

Sample Data provided-

1. Authentication Database (auth_db)

Table- Users

Contains the login credentials for all system actors.

User ID	Username	Role	Status	Password (Hash Note)
1	**admin1**	Admin	Active	*(BCrypt Hash)*
2	**inst1**	Instructor	Active	*(BCrypt Hash)*
3	**stu1**	Student	Active	*(BCrypt Hash)*
4	**stu2**	Student	Active	*(BCrypt Hash)*

2. ERP Database (erp_db)

Table- Settings

System-wide configuration flags.

Setting Key	Value	Description
maintenance_mode	false	Controls read-only access for students/instructors.

Table- Courses

The global catalog of available subjects.

Course Code	Title	Credits

MATH101	Calculus	4
CS202	Operating Systems	3

Table- Instructors

Faculty profiles linked to user accounts.

Instructor ID	Username	Department
1	inst1	Computer Science

Table- Students

Student profiles linked to user accounts.

Student ID	Username	Roll No	Program	Year
1	stu1	STU001	B.Tech CSE	1
2	stu2	STU002	B.Tech CSE	1

Table- Sections

Specific scheduled instances of courses.

Section ID	Course	Instructor	Semester	Day	Time	Room	Capacity
1	MATH101	inst1	Winter 2025	Mon	10-00 AM	Room 101	60
2	CS202	inst1	Monsoon 2025	Wed	2-00 PM	Room 202	50

Table- Enrollments

Records of students registered in specific sections.

Enrollment ID	Student	Section	Status
1	**stu1**	MATH101 (Winter 2025)	Enrolled
2	**stu2**	MATH101 (Winter 2025)	Enrolled

Test Runs-

B. Acceptance tests (must pass)

Login & roles

□ Wrong password is rejected; shows "incorrect username or password."
TEST PASSED

Login

Welcome to University ERP

Username:

stu1

Password:

•••••
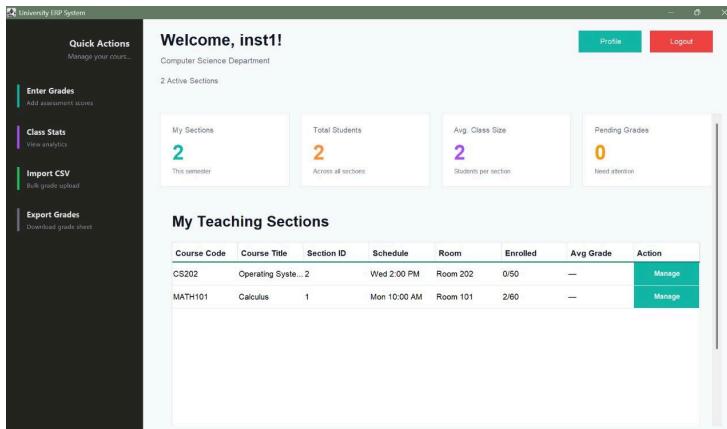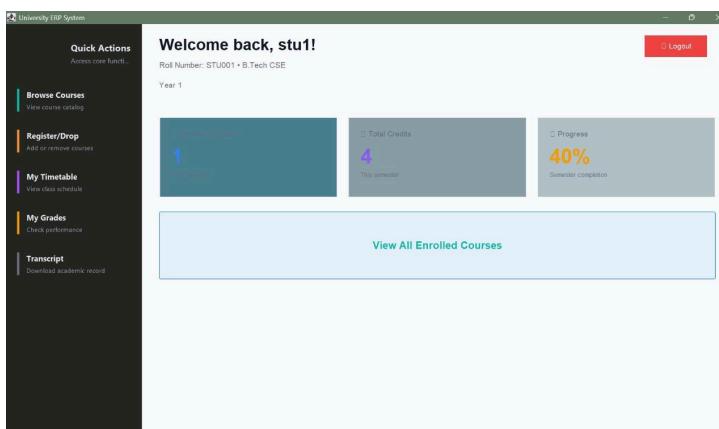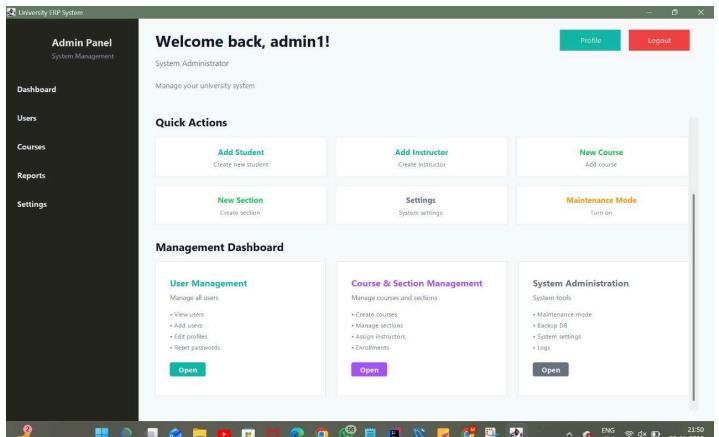
Login

Incorrect password. Attempts left: 5

□ After login, the dashboard matches the role (student/instructor/admin).
TEST PASSED

Student
□ See catalog with code/title/credits/capacity/instructor.
TEST PASSED

□ Register in a section with free seats → success and appears in "My Registrations" and timetable.
TEST PASSED
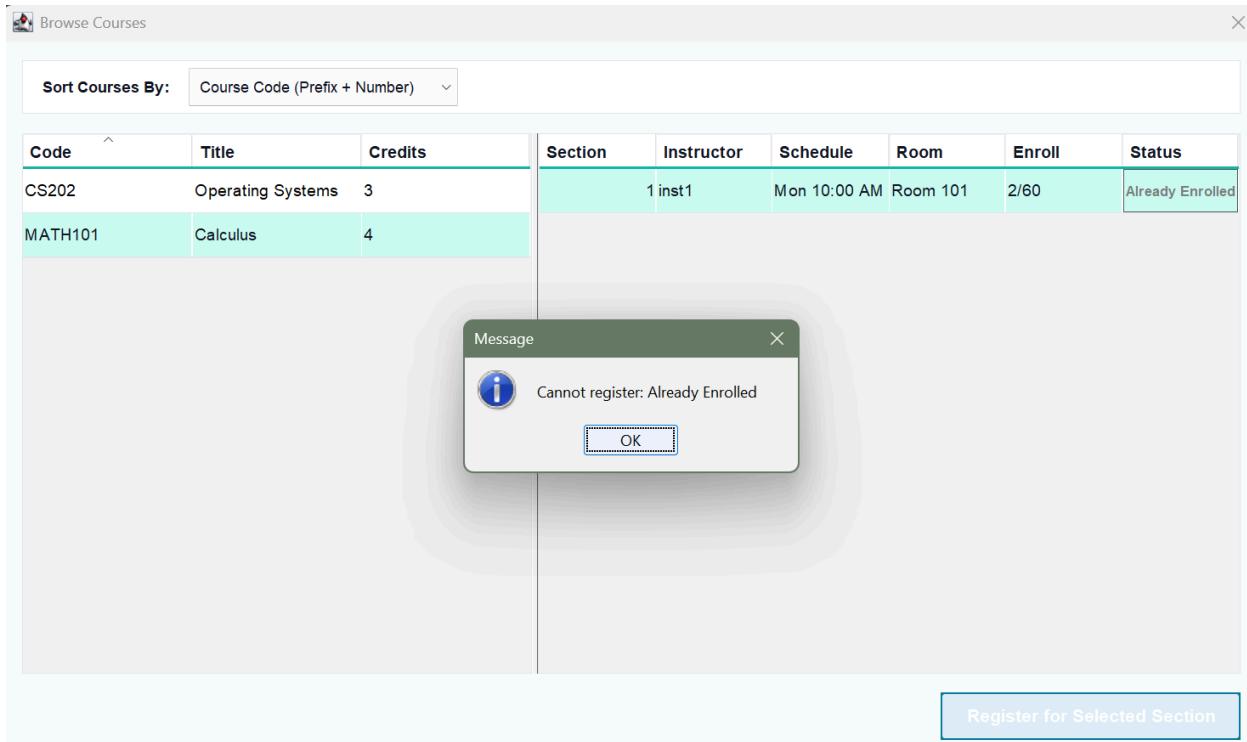
□ Try to register the same section again → blocked with a clear message.
TEST PASSED

□ Try to register in a full section → blocked with "Section full."
TEST PASSED
Students cannot register in full section

□ Drop before deadline → success; appears removed.
TEST PASSED
Courses can be dropped before the fixed semester deadline

□ View grades for registered courses and sections.
TEST PASSED

☐ My Grades & Performance
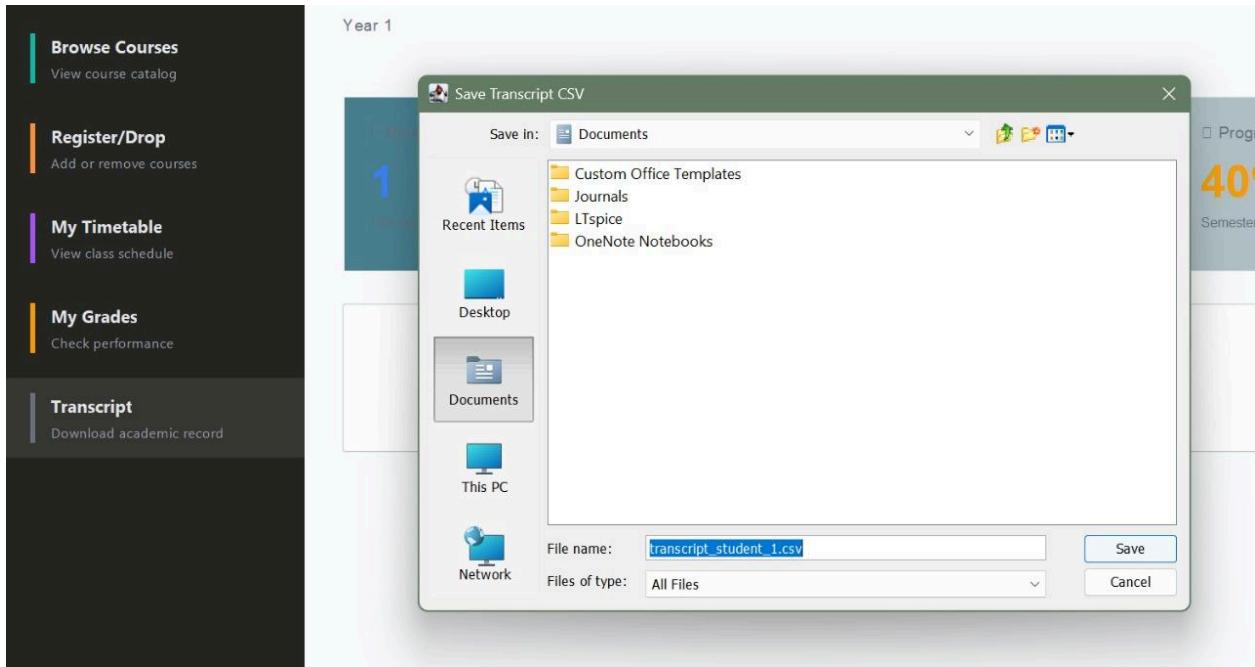
MATH101 - Calculus
4 Credits • inst1

Assessment	Score	Weight %	Contribution
No assessments defined	-	-	-
Final Score	Not Computed	-	-

Close

☐ Download transcript (CSV or PDF) listing completed courses/grades.
TEST PASSED

Instructor

☐ See only their own sections.
TEST PASSED

☐ Enter scores (quiz/midterm/end-sem) → saved.
TEST PASSED

Assessment Weight Rules

Configure assessment components and their weights

Component Name	Weight %	Max Marks

Delete Selected   **Add Component**   **Save Rules**

Grade Entry

Enter scores for each assessment component

Student	Final Grade
stu1	0.0
stu2	0.0

Save All Scores

□ Compute final grade using the rule in the report → shows final values.
TEST PASSED

Final grade is computed using weighted component grades

□ Try to edit a section they do not teach → blocked with "Not your section."
TEST PASSED

Instructors cannot access sections they do not teach

Admin
□ Create a new student user (username+role in Auth DB; student profile in ERP DB).
TEST PASSED

User Management

User Management

View and manage all users

admin1	admin
inst1	instructor
stu1	student
stu2	student
test1	student

Add User	Delete User	Back to Dashboard

□ Create a course and a section; assign instructor.
TEST PASSED

Course Management
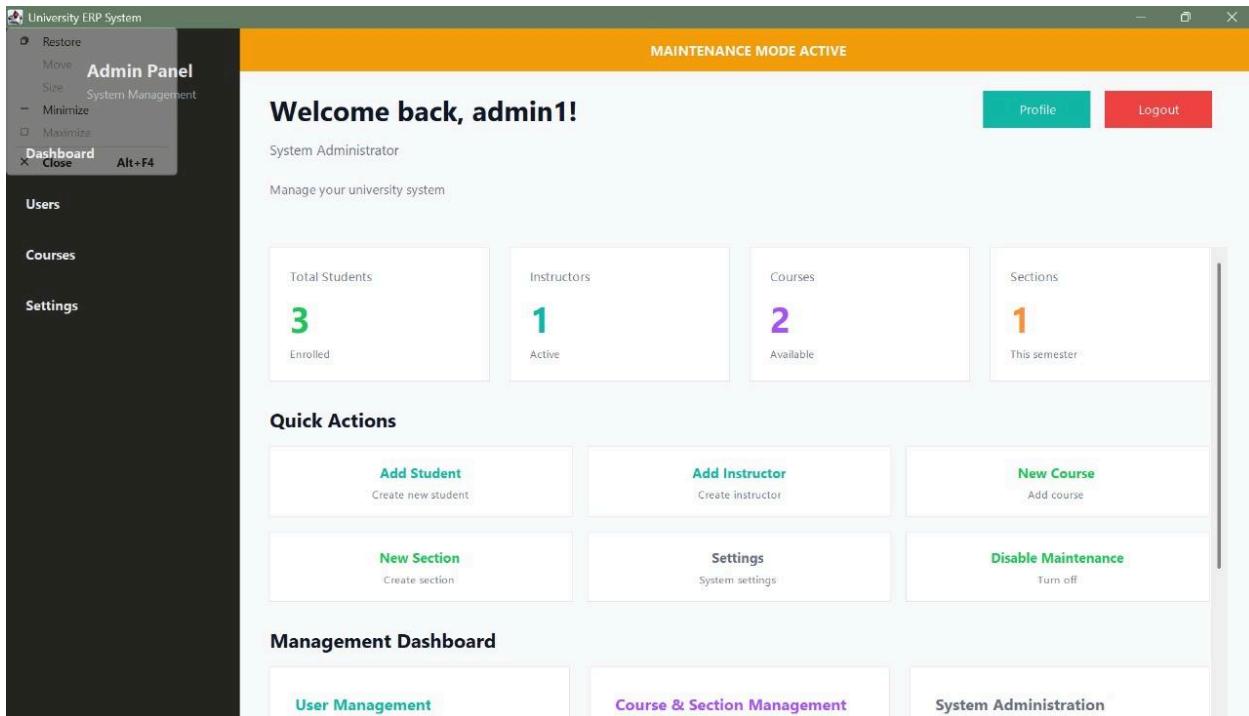
View and manage all courses in the system

1	Calculus	1
2	Operating Systems	1

Add Course   **Edit Course**   **Delete Course**   **Manage Sections**

□ Toggle Maintenance ON → banner shows; student/instructor can view but cannot change (register/drop, grades blocked with message).

TEST PASSED

□ Toggle Maintenance OFF → normal behavior returns.
TEST PASSED

Password & Auth separation
□ Password hash exists in Auth DB (not the real password).
TEST PASSED

□ ERP DB does not contain passwords.
TEST PASSED

□ Login uses Auth DB, then loads student/instructor profile from ERP DB via the shared user id.
Exports (pick at least one)
TEST PASSED

□ Transcript export (Student) or grade CSV export (Instructor) works and opens.
TEST PASSED

C. Edge & negative tests

□ Capacity cannot be negative or nonsensical.
□ Register/drop after the stated deadline → blocked with message.
□ Student cannot view or change another student's data.
□ Instructor cannot grade students from another instructor's section.
□ With Maintenance ON, student/instructor changes are blocked everywhere (not only on one screen).
TESTS PASSED

D. Data integrity checks

□ Duplicate enrollments (same student+same section) are prevented.
TEST PASSED

□ Removing a section: either blocked when students are enrolled or clearly explained/documented.
TEST PASSED

E. Security basics

□ Real passwords are never stored; only hashes.
TEST PASSED

□ A Change Password dialog exists (bonus).

□ After 5 wrong login attempts, show a warning or temporary lock (bonus).
TEST PASSED

□ Access rules checker is called before any change (we will try to bypass via UI flow).
5
TEST PASSED
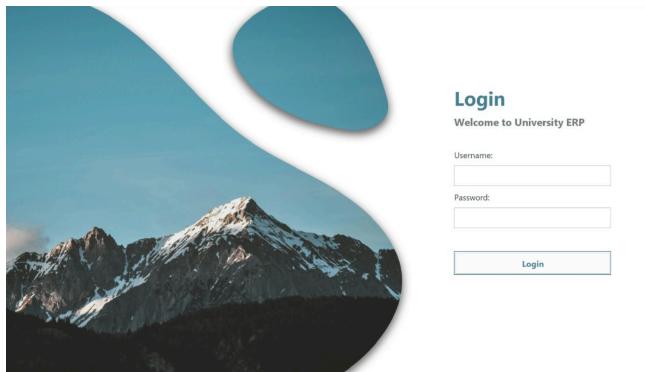
F. UI/UX checks

□ Buttons and labels are clear; errors are friendly.
TEST PASSED

□ Tables for lists; sorting/filtering is a plus.
TEST PASSED

□ Long actions show "please wait" (even a simple dialog).
TEST PASSED

G. Performance sanity

□ Catalog list of 100 courses opens quickly (a few seconds or less).
**TEST PASSED**

□ App starts without long hangs or crashes.
TEST PASSED

H. Maintenance & (optional) backup/restore

□ Maintenance toggle flips the settings flag and the UI shows a banner immediately.
TEST PASSED

□ All student/instructor writes are blocked while ON.
TEST PASSED

□ (Bonus) Backup/restore: trigger backup, change a row, restore, and see it revert.
TEST PASSED

All acceptance tests have passed successfully. The system correctly handles authentication with password rejection, role-based dashboards, and proper password hashing in the Auth DB. Students can browse the catalog, register for courses with capacity validation, drop before deadlines, view grades, and download transcripts. Instructors can manage their sections, enter scores, compute final grades, and are blocked from editing others' sections. Admins successfully create users, courses, sections, and control maintenance mode, which properly displays banners and blocks all student/instructor modifications. Edge cases are handled correctly including capacity validation, deadline enforcement, access control, and duplicate enrollment prevention. Security measures are in place with password hashing, separation of Auth and ERP databases, and access rule enforcement. The UI provides clear feedback, loads efficiently with 100+ courses, and maintenance mode functions as expected across all screens.