Test Class	Test Method	Coverage	Expected Outcome	Pass/Fail	Actual Outcome
AcademicTest	testAddContentWithNullCourse	Tests the method against null inputs	Attempts to add content to a null course and expects a NullPointerException	Pass	The test passes because a NullPointerException is correctly thrown, indicating proper null checks
AcademicTest	testAddAssignmentWithValidCourse	Tests the method's ability to correctly add assignments to a course	Adds an assignment to a course and checks if the assignment list size is correct	Fail	The test fails because the assignment is not correctly added to the course's assignment list
AcademicTest	testCommunicateThroughForumWithValidForum	Tests the method for correct message handling	Attempts to communicate through a forum and expects no exceptions	Pass	The test passes because no exception is thrown, indicating proper handling of forum communication
SessionManagerTest	testLoginNullUser	Tests the method against null inputs	Attempts to log in a null user and expects a NullPointerException	Pass	The test passes because a NullPointerException is correctly thrown, indicating proper null checks
SessionManagerTest	testLogoutWithoutLogin	Tests the logout method	Attempts to log out without being logged in and expects no exceptions	Pass	The test passes because no exception is thrown, indicating proper handling of logout operations when no user is logged in
SessionManagerTest	testLoginTwice	Tests the login method for enforcing only a single session at once	Logs in the same user twice and expects an IllegalStateException	Fail	The test fails because no exception is thrown, indicating that the method allows multiple logins for the same user
AssignmentTest	testSubmitNullFile	Tests the method against null inputs	Attempts to submit a null file and expects a NullPointerException	Pass	The test passes because a NullPointerException is correctly thrown, indicating proper null checks
AssignmentTest	testGetSubmissionFor Unenrolled Student	Tests the getSubmission method's access control	Submits an assignment for an enrolled student and checks if an unenrolled student can retrieve the submission	Pass	The test passes because the method correctly returns null for the unenrolled student, indicating proper access control
AssignmentTest	testSubmitAssignmentTwice	Tests the handling of multiple submissions for the same student	Submits two assignments for the same student and checks if the latest submission is recorded	Pass	The test passes because the method correctly updates and records the latest submission
CourseTest	testAddNullStudent	Tests the method against null inputs	Attempts to enroll a null student and expects a NullPointerException	Pass	The test passes because a NullPointerException is correctly thrown, indicating proper null checks

CourseTest	testAddNullContent	Tests the method against null inputs	Attempts to add null content and expects a NullPointerException	Pass	The test passes because a NullPointerException is correctly thrown, indicating proper null checks
CourseTest	testEnrollStudentTwice	Tests the handling of duplicate enrollments	Enrolls the same student twice and expects an IllegalArgumentException	Fail	The test fails because no exception is thrown, indicating that the method allows duplicate enrollments
StudentTest	accessCourseMaterial	Tests access of course materials	Checks if an enrolled student can access course materials and if an unenrolled student cannot	Fail	The test fails because accessCourseMaterial does not correctly control access based on enrollment status, allowing both students to access materials
StudentTest	uploadAssignmentWithEnrolledStudent	Tests the assignment upload functionality for enrolled students	Checks if an enrolled student can upload an assignment	Pass	The test passes because uploadAssignment correctly handles the upload process for enrolled students
StudentTest	uploadAssignmentWithUnenrolledStudent	Tests the assignment upload functionality for unenrolled students	Checks if an unenrolled student cannot upload an assignment	Fail	The test fails because uploadAssignment does not correctly check the enrollment status, allowing the unenrolled student to upload
StudentTest	checkGradesWithEnrolledStudent	Tests the grade retrieval functionality for enrolled students	Checks if an enrolled student can access their grades	Pass	The test passes because checkGrades correctly retrieves grades for enrolled students
StudentTest	checkGradesUnerollesStudent	Tests the grade retrieval functionality for unenrolled students	Checks if an unenrolled student cannot access grades	Fail	The test fails because checkGrades does not correctly restrict access for unenrolled students
StudentTest	accessExamWithEnrolled Student	Tests the exam access functionality for enrolled students	Checks if an enrolled student can access an exam	Pass	The test passes because accessExam correctly grants access to exams for enrolled students
StudentTest	accessExamWithUnenrolledStudent	Tests the exam access functionality for unenrolled students	Checks if an unenrolled student cannot access an exam	Pass	The test passes because accessExam correctly restricts access to exams for unenrolled students
StudentTest	getSchedule	Tests the schedule retrieval functionality	Checks if the schedule of assignments and exams is correctly retrieved for an enrolled student	Fail	The test fails because getSchedule does not correctly compile the schedule

UserTest	authenticate	Tests the password authentication functionality for users	Checks the authentication mechanism for students and academic users with correct and incorrect passwords	Pass	The test passes because the authenticate method correctly handles password comparisons, including case sensitivity
UserTest	logout	Tests the session management's logout functionality	Checks if a logged-out student can still access their grades	Fail	The test fails because the logout method does not correctly update the session state, allowing the student to still access grades after logging out