

Role	ID	Name
Team leader Designed UML merged the code and verified that its parts were compatible together by editing linked list, sparse table and more	2401248761	يوسف شريف عبد المنعم اسماعيل عطيه
Sorting code	2401243044	ياسين محمد منير محمد بشري اسماعيل
Linked lists	2401246090	الحسن علي زكي علي
Linked lists	2401244790	مصطفى محمود محمد محمد
History and stack	2401248097	مصطفى أشرف رجب محمد الشريف
Linked lists	2401247856	احمد حسن محمد حسن
sparse table	2401241317	أحمد صبحي عبدالفتاح محمد
History and stack	2401241376	يوسف محمود عبده رزق
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Interface and pdf report	2401244526	محمد فهمي احمد عبدالله

Functions to Implement

Menus

<pre> === Main Menu === 1. Student 2. Course 3. Undo 4. Redo 0. Exit Choose an option: 1 </pre>	<pre> --- Student Menu --- 1. Add Student 2. Remove Student 3. List All Students 4. Show Courses of a Student 5. Enroll Student in Course 6. Drop Student from Course 7. Check if a Student is Normal 8. Show Last Student Added 0. Back Choose an option: 1 </pre>	<pre> --- Course Menu --- 1. Add Course 2. Remove Course 3. List All Courses 4. Show Students of a Course 5. Check if a Course is Full 6. Show Last Course Added 0. Back Choose an option: 1 </pre>
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## Functions to Implement

Function	output
<pre>addStudent(int studentID)</pre> <p>Adds a new student to the system (linked list).</p>	<pre> Choose an option: 1 Enter new Student ID: 12  The student with the id 12 has added successfully. </pre>
<pre>addCourse(int courseID)</pre> <p>Adds a new course to the system (linked list).</p>	<pre> Enter new Course ID: 24  The course with the id 24 has added successfully. </pre>
<pre>removeStudent(int studentID)</pre> <p>Removes a student from the system.</p>	<pre> Enter Student ID to remove: 1  The student with the id 1 has been removed successfully. </pre>

<pre>removeCourse(int courseId)</pre> <p>Removes a course from the system.</p>	<pre>Enter Course ID to remove: 1</pre> <pre>The course with the id 1 has been removed successfully.</pre>
<pre>getLastStudentAdded()</pre> <p>Returns the ID of the last student added.</p>	<pre>Choose an option: 8</pre> <pre>The id of last student added to system is: 12</pre>
<pre>getLastCourseAdded()</pre> <p>Returns the ID of the last course added.</p>	<pre>Choose an option: 6</pre> <pre>The id of last course added to system is: 24</pre>
<pre>enrollStudent(int studentID, int courseId)</pre> <p>Enrolls a student in a course (updates both lists).</p>	<pre>Choose an option: 5</pre> <pre>Enter Student ID to enroll: 7</pre> <pre>Enter Course ID: 2</pre> <pre>The student with id 7 has been added to the course with id 2 successfully.</pre>
<pre>removeEnrollment(int studentID, int courseId)</pre> <p>Removes a student's enrollment from a course.</p>	<pre>Choose an option: 6</pre> <pre>Enter Student ID to drop: 7</pre> <pre>Enter Course ID: 2</pre> <pre>The student with id 7 has been removed from the course with id 2 successfully.</pre>
<pre>listCoursesByStudent(int studentID)</pre> <p>Displays all courses a student is enrolled in.</p>	<pre>Choose an option: 3</pre> <pre>-- The list of all students in the system are:</pre> <pre>Student's id: 2</pre> <pre>Student's id: 7</pre> <pre>Student's id: 12</pre> <pre>Student's id: 101</pre> <pre>Student's id: 102</pre> <pre>Student's id: 103</pre> <pre>Student's id: 104</pre> <pre>Student's id: 105</pre> <pre>Student's id: 106</pre> <pre>Student's id: 107</pre> <pre>Student's id: 108</pre> <pre>Student's id: 109</pre> <pre>Student's id: 110</pre> <pre>-- Total of 13 students. --</pre>

<pre>listStudentsByCourse(int courseID)</pre> <p>Displays all students enrolled in a course.</p>	<pre>Choose an option: 3 -- The list of all courses in the system are: Course's id: 31 Course's id: 32 Course's id: 33 Course's id: 34 Course's id: 35 Course's id: 36 Course's id: 37 Course's id: 38 Course's id: 39 Course's id: 40 Course's id: 24 Course's id: 2 -- Total of 12 courses. --</pre>	
<pre>sortStudentsByID(int courseID)</pre> <p>Sorts the list of students in ascending order by ID.</p>	<pre>-- The list of all courses in the system are: Course's id: 0 Course's id: 31 Course's id: 32 Course's id: 33 Course's id: 34 Course's id: 35 Course's id: 36 Course's id: 37 Course's id: 38 Course's id: 39 Course's id: 40 Course's id: 965 Course's id: 6542 Course's id: 54236 -- Total of 14 courses. --</pre>	
<pre>sortCoursesByID(int studentID)</pre> <p>Sorts the list of courses in ascending order by ID.</p>	<pre>-- The list of all courses in the system are: Course's id: 0 Course's id: 31 Course's id: 32 Course's id: 33 Course's id: 34 Course's id: 35 Course's id: 36 Course's id: 37 Course's id: 38 Course's id: 39 Course's id: 40 Course's id: 965 Course's id: 6542 Course's id: 54236 -- Total of 14 courses. --</pre>	

isfullCourse(int courseID)  Checks if a course if complete or not.	Enter Course ID: 1  The course with ID 1 is not full.
isnormalstudent(int courseID)  Checks if a student registers 2-7 courses or not.	Enter Student ID: 1  The student with id 1 is normal student.
Undo  Undo enrollStudent and removeEnrollment	undo  Undo done successfully
Redo  Redo the last action that happend	There no action to redo