

Test Results

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Automated Excel Grading System

Oasis Technologies

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Automated Excel Grading System

Test Results

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Test Results

I. System Test

1. Testing Plan Identifier

The Test Results document for this software project is a collection of all necessary testing requirements that must be met in order for the Automated Excel Grading System to be considered complete and functional. This shows all of the things that have been met successfully, and also the parts that are not working correctly.

2. Introduction

This is a document that contains the overview of the Test Results. This version of the document has outlined and reviewed the previously documented requirements along with a plan that tested these requirements in a way that ensured that each requirement is fully met and that the system as a whole is working in the desired way. The testing in this document encompasses all internal software components.

3. Test Items & Functional Requirements Inventory

This section of the document contains a list of requirements that will need to be tested to ensure that they are adequately met. This list of requirement items will need to be kept in mind during all testing to ensure that all requirements are understood and tested properly. It is composed first of general requirements for the system in terms of what external systems and software should be supported by the Automated Excel Grading System along with all security issues. It is then broken up into our four different user types and their functionality requirements.

The list below contains the Functional Requirements that must be met and tested fully:

External Systems/Software and Safety

- The Automated Excel Grading System is to be web based and must be viewable from any computer with internet access.

Yes No

- The system must work on the most popular platforms, which include Windows, Macintosh, and Linux and the default Operating Systems for Windows and Macintosh: Windows XP, Windows Vista, Mac OSX.

Yes No

- The system must work on the most widely used and popular web browsers and will be tested on the following web browsing programs:
 - Microsoft Internet Explorer 7.0
 - Mozilla Firefox 1.0.7
 - Safari 2.0.1

Yes No

- Ability to log into system securely from any computer.

Yes No

Course Administrator

- Login
 - The first time the Administrator logs into the system they will use the username and password given to them by the developers.

Yes No

We no longer use Usernames, we use E-mails addresses instead.

- Create Accounts
 - The Administrator will create the Lab Instructor and Lecture instructor accounts. When they create these accounts they will specify what user account is being created.

Yes No

- They will have the option to create student accounts if needed.

Yes No

- Edit Accounts
 - If any account needs to be changed for any reason the Course Administrator can do so, including changing a students lab section or lecture section.

Yes No

- Create Password for Student User
 - The Administrator creates the initial password so the Student user can log into the system for the first time.

Yes No N/A

We didn't have enough time to complete this function

- Delete Accounts
 - The Administrator can delete accounts from semester to semester with Student Users leaving the course and Lab and Lecture Instructors not teaching the course.

Yes No

- Upload Grading Key and Sample Files
 - The Administrator will upload one grading key per lab and pre-lab along with multiple sample files per lab and pre-lab.

Yes No N/A

We did this differently, We upload one key file for every sample file.

- The grading key specifies what sections of the lab files to grade.

Yes No

- View Reports

- Course Instructor can view students lab grades based on lab or lecture section.

Yes No

- Change Password

At any time the Course Administrator can change their password.

Yes No

Student User

- Login

- The first time the student logs into the system, he or she will create a username and use the specific password given to them in class by the lecture instructor.

Yes No N/A

We no longer use Usernames, we use E-mails addresses instead.

- Upload Labs and Pre-labs

- When the student wants to submit a file they will be able to in their student view after they log into the system. The submit button will bring them to a new screen where they will upload each individual file with a browse button that searches the directories on the computer their on.

Yes No

- Viewing Pre-Lab Error Reports

- The student will click on the view Pre-Lab Button on the student view page to view the report

Yes No

- Viewing Lab Grades, Files and Report

- The student can view their graded labs and see what sections they got wrong by clicking on the view Lab Button on the student view page.

Yes No

- They can only view these documents once the grades are approved and released by the Lab Instructor

Yes No

- Change Password
 - At any time the Student User can change their password.

Yes No

Lab Instructor

- Login
 - The first time the Lab Instructor logs into the system they will use the username and password created by the Course Administrator.

Yes No

We no longer use Usernames, we use E-mails addresses instead.

- Review Lab Grades from System
 - Override any mistakes that the system made after viewing the report generated by the system showing what the student got wrong.

Yes No

- Approve Grades For Student User's View

Yes No

- Viewing Student Grades
 - They will be able to view the lab grades based on what lab section they want including all their lab sections.

Yes No

- They can also view the grades based on lab number, including all labs.

Yes No

- Change Password
 - At any time the Lab Instructor can change their password.

Yes No

Lecture Instructor

- Login
 - The first time the Lecture Instructor logs into the system they will use the username and password created by the Course Administrator.

Yes No

We no longer use Usernames, we use E-mails addresses instead.

- Viewing Lab Grades
 - Once the Lab Instructor has checked to make sure the lab was graded correctly by the system the Lecture Instructor can view the lab grades.

Yes No

- They will be able to view the lab grades based on what lecture section they want including all their lecture sections.

Yes No

- They can also view the grades based on lab number, including all labs.

Yes No

- Change Password
 - At any time the Lecture Instructor can change their password.

Yes No

4. Non-Functional Requirements Inventory Testing

In addition to the Functional Requirements, we must also ensure that the Non-Functional Requirements are tested to the best of our ability. These requirements are not easily tested as they are qualitative in nature, unlike the Functional Requirements which are for the most part quantitative. The following is a list of issues that must be kept in mind during testing in order to ensure that the Non-Functional Requirements are met to the best of our ability.

As stated in the Functional Requirements, the Automated Excel Grading System should be supported by platforms Windows, Macintosh, and Linux on the operating systems Windows XP, Windows Vista, and Mac OSX on the internet browsers Microsoft Internet Explorer 7.0, Mozilla Firefox 10.4.7, and Safari 2.0.4. But these various platforms, operating systems, and internet browsers have a tendency to display the same software and programs in different ways. The Automated Excel Grading System should attempt to maintain consistency in design through these different platforms, operating systems, and especially internet browsers. If our users use different computers to use our system, they should not be confronted with a difficult time adapting to any differences between how the system is displayed on any computer. Differences in designs due to using different computers should be minimized as much as possible.

There should be a quick turn around time for Pre-Lab grades. Students should receive their graded Pre-Lab as close to immediately after submission as possible.

The system should be secure. Student's grade information should be viewable only by their Lab Instructor, Lecture Instructor, and the Course Administrator. All information provided by any user should not be displayed publicly and only accessible by the Course Administrator and the user themselves.

Because the Automated Excel Grading System is web based, it must be easily navigable by all users. Confusion about using any and all aspects of the system should be minimized as much as possible by creating a good user interface.

5. Non-Functional Requirements Inventory Testing Results:

- We tested our software on mainly on Windows. We were unable to test our software on Linux or Vista.
- We tested our software on the 3 types of web browsers specified in the non-functional requirements. Firefox, Safari, and Internet Explorer 7.0 are best for viewing our web page. Internet explorer 6 causes some style sheet errors. Nothing is unreasonable, just a few stylistic problems such as the footer being disconnected from the body.
- There are a few security issues. It is possible for students to view other students submitted files and also the Key Files and Sample Files. All a student need do is figure out the file hierarchy we used and they will be able to access these files. This can be fixed with a .htaccess file in each folder, but we didn't have time to research or implement it. Also what could be done is to simply move the files out of the public_html directory and altar the code to handle this.
- Our user interface is consistent and efficient save a few areas. There are some pages where errors are displayed on the same page where they were made and others display in a page that is just for the error message. There are also some pages that display errors in plain black text on a white page which breaks the consistency of our user interface.
- When deleting a student, instructor, or section there is no way to back track. Once you delete any of these things, they are gone forever. This is a problem when it comes to deleting instructors and sections because there are students associated with instructors and sections and instructors associated with sections. When deleting anything, it is best to try to edit the information first and use delete as a last resort and only using delete at the end of the semester when deleting everything. When deleting anything a javascript window pops up double checking the user's intentions to delete.

6. Exception Handling To Test

There are certain areas in the Automated Excel Grading system where errors will occur that is not the fault of our system. The system must be able to handle these exceptions.

If a user forgets their password, there needs to be a method of handling it without having to create a new account every time. If the user forgets his or her password, they need only click on the “Forgot Password” link found on the login screen which will send them to another page that will ask them to submit their email. The system should verify that the email entered is an email address of a username in the system. The system will then send an email to this address containing their username and password.

There are various page in the web based system where users will have to fill out a form. If a user fails to enter all necessary fields in a submission form, the page should reload with a message informing the user that all necessary fields must contain information and a red asterisk next to the fields that have been left empty but must be filled out.

6. Exception Handling Test Results

- If a user forgets their password there IS a page where they can submit their email and have their password sent to them. Due to conditions beyond our control, however, our system cannot send email to campus email addresses. There are messages on all create account screens advising the user to use non-Siena email addresses due to the fact that we cannot send them emails with their passwords in them.
- All forms have error messages in correct areas. Only certain fields are allowed to be left blank and we used drop down menus where at all possible to force the user to enter correct information. There are, however, fields such as Email Address where we do not validate that it is in fact an Email Address (in the format username@domain.ext).

7. Testing Approach

The method our team will use to test the Automated Excel Grading System will be first and foremost to keep in mind the Functional and Non-Functional Requirements as defined in this and other documents. The first formal test will be an exhaustive Unit Test (defined later in this document). The Unit Test will test every aspect of every web page in the system with detailed descriptions of each test. The tester(s) will go through each web page in the system checking each unit requirement off as passing or failing. The tester(s) will repeat this test on the various web browsers that have been stated should be supported in the Functional Requirements. Then a Regression Test (also defined later in this document) will be implemented to ensure that while each unit in the Unit Test is passed, it does not interfere with other units in the Unit Test. Our hope is that this will help to ensure that no errors are missed and can be fixed or at the very least reported on.

When errors occur or Unit Tests are failed, the team will coordinate to come up with a solution to the problem and then the Unit Test will be performed again, completely, to ensure that nothing else was changed in fixing the previous problem. The Regression Test will be implemented once we are satisfied that the Unit Test has been passed acceptably, with all failed units either fixed or reported on. If the Regression Test determines that there are issues of one feature breaking another feature, the team will again coordinate to fix the problem and implementing a fix. The Unit Test should then be re-implemented to ensure that while fixing the problem another problem was not caused and then re-implementing the Regression Test.

In order to test the Non-Functional Requirements, the tester(s) will have to use the system keeping in mind each specific Non-Functional Requirement and deciding on whether the system passes each one acceptably.

II. Unit Test

0. Unit Test Contents

| Pass/ Fail | Screen Number | Internal Tests | Name |
|---------------|------------------|-------------------|---|
| Pass | 1 | | Login Screen |
| Pass | | 1.1 | Load Page |
| Pass | | 1.2 | Inadequate Login Attempt |
| Pass | | 1.3 | Incorrect Login Attempt - Unregistered Account |
| Pass | | 1.4 | Incorrect Login Attempt - Incorrect Password |
| Pass | | 1.5 | Correct Student Login |
| Pass | | 1.6 | Correct Lab Instructor Login |
| Pass | | 1.7 | Correct Lecture Instructor Login |
| Pass | | 1.8 | Correct Course Administrator Login |
| Pass | 2 | | Register Screen |
| Pass | | 2.1 | - Register |
| Pass | | 2.2 | - First Name Entered |
| Pass | | 2.3 | - Last Name Entered |
| Pass | | 2.4 | - Password Entered |
| Pass | | 2.5 | - Password (Re-Type) Entered |
| Pass | | 2.6 | - Lecture Section Entered |
| Pass | | 2.7 | - Lab Section Entered |
| Pass | | 2.8 | - E-Mail Address Entered |
| Pass | | 2.9 | - Registration Attempt with Fields not Entered |
| Pass | | 2.10 | - Password and Password (Re-Type) do not match |
| Pass | | 2.11 | - E-mail Address and E-mail Address (Re-type) do not match |
| Pass | | 2.12 | - Successful Registration Attempt |
| Pass | 3 | | Forgot Password Screen |
| Pass | | 3.1 | - Forgot Password |
| Pass | | 3.2 | - User Enters E-Mail Address |
| Pass | | 3.3 | - User Submits Incorrect E-mail Address |
| Pass | | 3.4 | - User Submits Correct E-Mail Address |
| Pass | 4 | | Change Password |
| Pass | | 4.1 | - Change Password Load Page |
| Pass | | 4.2 | - Current Password Entered |
| Pass | | 4.3 | - New Password Entered |
| Pass | | 4.4 | - Re-Type New Password Entered |
| Pass | | 4.5 | Submitting Changes with User's Incorrect Password Entered In Current Password Box |
| Pass | | 4.6 | Submitting Changes with New Password and Re-Type New Password Mismatch |
| Pass | | 4.7 | Successful Submit Changes |

| Pass/ Fail | Screen Number | Intern l Tests | Name |
|---------------|------------------|-------------------|---|
| Pass | 5 | | Student Homepage |
| Pass | | 5.1 | _ Load Student Homepage |
| Pass | | 5.2 | _ View Labs |
| Pass | | 5.3 | _ View Pre-Labs |
| Pass | | 5.4 | _ Upload File |
| Pass | | 5.5 | _ Change Password |
| Pass | | 5.6 | Logout |
| Pass | 6 | | Student View Labs/Pre-Labs |
| Pass | | 6.1 | _ Generate Lab Table Grades |
| Pass | | 6.2 | _ Correct Labs Displayed in Table |
| Pass | | 6.3 | _ Correct Unsubmitted Labs Information Table |
| Pass | | 6.4 | _ Correct Submitted Pre-Labs Information in Table |
| Pass | | 6.5 | Correct Submitted, Ungraded Labs Information in Table |
| Pass | | 6.6 | Correct Graded Labs Information in Table |
| Pass | | 6.7 | Logout |
| Pass | 7 | | Lab Instructor Homepage |
| Pass | | 7.1 | _ Load Lab Instructor Homepage |
| Pass | | 7.2 | _ Lab Section Dropdown |
| Pass | | 7.3 | _ Lab Number Dropdown |
| Pass | | 7.4 | _ View |
| Pass | | 7.5 | _ Change Password |
| Pass | | 7.6 | Logout |
| Fail | 8 | | Lab Instructor View Errors |
| Pass | | 8.1 | _ View Errors Page Load |
| Pass | | 8.2 | _ Re-Entering Number in the You Received Box |
| Fail | | 8.3 | _ Approve New Grade |
| Pass | | 8.4 | _ Logout |
| Pass | 9 | | Lab Instructor View All |
| Pass | | 9.1 | _ View Lab Page Load |
| Pass | | 9.2 | _ View Submitted Labs |
| Pass | | 9.3 | _ View Errors |
| Pass | | 9.4 | _ Logout |
| Pass | 10 | | Lecture Instructor Homepage |
| Pass | | 10.1 | _ Lecture Instructor Homepage |
| Pass | | 10.2 | _ Lecture Section Dropdown |
| Pass | | 10.3 | _ Lab Number Dropdown |
| Pass | | 10.4 | _ View |
| Pass | | 10.5 | View All is Clicked |
| Pass | | 10.6 | Change Password |
| Pass | | 10.7 | Logout |
| Pass | 11 | | Lecture Instructor View All |
| Pass | | 11.1 | _ View Lab Page Load |
| Pass | | 11.2 | _ View Submitted Labs |
| Pass | | 11.3 | _ View Errors |
| Pass | | 11.4 | _ Logout |

| Pass/ Fail | Screen Number | Internal Tests | Name |
|---------------|------------------|-------------------|---|
| Pass | 12 | | Lecture Instructor View Labs |
| Pass | | 12.1 | _ View Lab Page Load |
| Pass | | 12.2 | _ View Submitted Labs |
| Pass | | 12.3 | _ View Errors |
| Pass | | 12.4 | _ Logout |
| Pass | 13 | | Course Administrator Homepage |
| Pass | | 13.1 | _ Course Administrator Load Page |
| Pass | | 13.2 | _ Lecture Section Dropdown |
| Pass | | 13.3 | _ Lab Number Dropdown |
| Pass | | 13.4 | _ View |
| Pass | | 13.5 | _ Search for a User in the Database |
| Pass | | 13.6 | _ Search for a User not in the Database |
| Pass | | 13.7 | _ View All Students |
| Pass | | 13.8 | _ View All Instructors |
| Pass | | 13.9 | _ Create Instructor Account |
| Pass | | 13.10 | _ Key Files |
| Pass | | 13.11 | _ Sections |
| Pass | | 13.12 | _ Admin Account |
| Pass | | 13.13 | Logout |
| Pass | 14 | | View All Students Course Administrator |
| Pass | | 14.1 | View All Students Page Load |
| Pass | | 14.2 | Delete All Students |
| Pass | | 14.3 | Edit Student Information |
| Pass | | 14.4 | Delete Student |
| Pass | | 14.5 | Delete Student, Confirmation Accept |
| Pass | | 14.6 | Delete Student, Confirmation Decline |
| Pass | | 14.7 | Delete All Students, Confirmation Accept |
| Pass | | 14.8 | Delete All Students, Confirmation Decline |
| Pass | | 14.9 | Logout |
| Pass | 15 | | View All Instructors Course Administrator |
| Pass | | 15.1 | View All Instructors Page Load |
| Pass | | 15.2 | Delete All Instructors |
| Pass | | 15.3 | Edit Instructor Information |
| Pass | | 15.4 | Delete Instructor |
| Pass | | 15.5 | Delete Instructor, Confirmation Accept |
| Pass | | 15.6 | Delete Instructor, Confirmation Decline |
| Pass | | 15.7 | Delete All Instructors, Confirmation Accept |
| Pass | | 15.8 | Delete All Instructors, Confirmation Decline |
| Pass | | 15.9 | Logout |
| Pass | 16 | | Create Instructor Course Administrator |
| Pass | | 16.1 | _ Create Instructor Load Page |
| Pass | | 16.2 | _ First Name Entered |
| Pass | | 16.3 | _ Last Name Entered |
| Pass | | 16.4 | _ Type of Instructor |
| Pass | | 16.5 | _ Password Entered |

| Pass/ Fail | Screen Number | Internal Tests | Name |
|---------------|------------------|-------------------|--|
| Pass | | 16.6 | _ Password (Re-Type) Entered |
| Pass | | 16.7 | _ View All Students |
| Pass | | 16.8 | _ E-Mail Address Entered |
| Pass | | 16.9 | Registration Attempt with Fields not Entered |
| Pass | | 16.10 | Password and Password (Re-Type) do not match |
| Pass | | 16.11 | _ Successful Registration Attempt |
| Pass | | 16.12 | _ Logout |
| Fail | 17 | | Upload Lab Key |
| Pass | | 17.1 | Upload Lab Keys Load Page |
| Pass | | 17.2 | Lab Number Entered |
| Pass | | 17.3 | Type of Key |
| Fail | | 17.4 | Due Date |
| Pass | | 17.5 | Sample File(s) Browse |
| Pass | | 17.6 | Grading Key Browse |
| Pass | | 17.7 | Submit Files Attempt with Fields Not Entered |
| Pass | | 17.8 | Submit Files Attempt with All Fields Entered |
| Pass | | 17.9 | Logout |
| Fail | 18 | | Sections |
| Pass | | 18.1 | _ Set Lab/Lecture Section Page Load |
| Pass | | 18.2 | _ Add New Section |
| Pass | | 18.3 | _ Edit Section |
| Fail | | 18.4 | _ Delete Section |
| Pass | | 18.6 | Logout |
| Pass | 19 | | Admin Account |
| Pass | | 19.1 | _ Admin Account Load Page |
| Pass | | 19.2 | _ Course Administrator Name |
| Pass | | 19.3 | _ Course Administrator E-Mail |
| Pass | | 19.4 | _ Change Password |
| Pass | | 19.5 | Change Administrator |
| Pass | | 19.6 | Logout |
| Fail | 20 | | Edit Student Information |
| Pass | | 20.1 | First Name Entered |
| Pass | | 20.2 | Last Name Entered |
| Pass | | 20.3 | Password Entered |
| Pass | | 20.4 | Lecture Section |
| Pass | | 20.5 | Lab Section |
| Fail | | 20.6 | E-Mail Address Entered |
| Pass | | 20.7 | Submit |
| Pass | | 20.8 | Submit, with Fields Missing |
| Pass | | 20.9 | Logout |
| Fail | 21 | | Edit Instructor Information |
| Pass | | 21.1 | First Name Entered |
| Pass | | 21.2 | Last Name Entered |
| Fail | | 21.3 | Type of Instructor |
| Pass | | 21.4 | Password Entered |

| Pass/ Fail | Screen Number | Internal Tests | Name |
|---------------|------------------|-------------------|---|
| Pass | | 21.5 | Password (Re-Type) Entered |
| Pass | | 21.6 | E-Mail Address Entered |
| Pass | | 21.7 | Registration Attempt with Fields not Entered |
| Pass | | 21.8 | Password and Password (Re-Type) do not match |
| Pass | | 21.9 | Successful Registration Attempt |
| Pass | | 21.10 | Logout |
| Pass | 22 | | Edit Section |
| Pass | | 22.1 | Edit Section Load Page |
| Pass | | 22.2 | First Name Entered |
| Pass | | 22.3 | Last Name Entered |
| Pass | | 22.4 | E-Mail Address Entered |
| Pass | | 22.5 | Section Number Entered |
| Pass | | 22.6 | Choose Section Type |
| Pass | | 22.7 | Semester Entered |
| Pass | | 22.8 | Successful Edit Attempt |
| Pass | | 22.9 | Logout |
| Pass | 23 | | Add New Lab and Lecture Section |
| Pass | | 23.1 | _ Add New and Lecture Section Page Load |
| Pass | | 23.2 | _ Section Number Entered |
| Pass | | 23.3 | _ Semester Entered |
| Pass | | 23.4 | _ Choose Section Type |
| Pass | | 23.5 | Submit |
| Pass | | 23.6 | Submit, with Fields Missing |
| Pass | | 23.7 | Logout |
| Pass | 24 | | Change Administrator |
| Pass | | 24.1 | Change Administrator Page Load |
| Pass | | 24.2 | First Name Entered |
| Pass | | 24.3 | Last Name Entered |
| Pass | | 24.4 | Password Entered |
| Pass | | 24.5 | Password (Re-Type) Entered |
| Pass | | 24.6 | E-Mail Address Entered |
| Pass | | 24.7 | Registration Attempt with Fields not Entered |
| Pass | | 24.8 | Password and Password (Re-Type) do not match |
| Pass | | 24.9 | Successful Registration Attempt |
| Pass | | 24.10 | Logout |
| Fail | 26 | | View Keys |
| Pass | | 26.1 | View Keys Load Page |
| Pass | | 26.2 | Upload Key Files |
| Pass | | 26.3 | Download Key Generator |
| Fail | | 26.4 | Delete All Key Files |
| Pass | | 26.5 | Display Key Files Uploaded |
| Pass | | 26.6 | Displaying the file |
| Pass | | 26.7 | Delete Key File |
| Pass | | 26.8 | Logout |

| Pass/ Fail | Screen Number | Internal Tests | Name |
|---------------|------------------|-------------------|---------------------------------------|
| Pass | 27 | | Upload File |
| Pass | | 27.1 | - Upload File Load Page |
| Pass | | 27.2 | - Determine if information is correct |
| Pass | | 27.3 | - Upload File Link |
| Pass | | 27.4 | - Upload File |
| Pass | | 27.5 | Upload without a file |
| Pass | | 27.6 | Logout |

1.0 Login Screen

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass / Fail |
|-----|--|--|-------------------|------------------|--|---|---|----------|-------------|
| 1.1 | Load Page | Page loads properly | Any other webpage | Index.htm | Automated Excel Grading System url in the Address bar of your internet browser | Load login screen. | Login screen displays all information properly in web browser | | P |
| 1.2 | Inadequate Login Attempt | Login button is clicked without any login information | Index.htm | invalidlogin.htm | No text in the Username Box or Password Box | Attempts to login to the System without any information entered | Error page loads telling user they did not supply a valid username or password. | | P |
| 1.3 | Incorrect Login Attempt - Unregistered Account | Login button is clicked with incorrect username | Index.htm | invalidlogin.htm | An unregistered Username and any text for the Password | Attempts to login to the System with false information | Error page loads telling user they did not supply a valid username or password. | | P |
| 1.4 | Incorrect Login Attempt - Incorrect Password | Login button is clicked with incorrect password | Index.htm | invalidlogin.htm | A registered Username and an incorrect Password | Attempts to login with a registered Username and an incorrect password | Error page loads telling user they did not supply a valid username or password. | | P |
| 1.5 | Correct Student Login | Login button is clicked with correct Student Username and password | Index.htm | home.php | A correct Student User's Username and it's corresponding Password | Attempts to login the Student user with a correct Username and Password | Student User homepage is generated. | | P |
| 1.6 | Correct Lab Instructor Login | Login button is clicked with correct Lab Instructor name & pw | Index.htm | home.php | A correct Lab Instructor User's Username and it's corresponding Password | Attempts to login the Lab Instructor with a correct Username and Password | Lab Instructor homepage is generated | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass /Fail |
|-----|------------------------------------|--|-------------------|------------------|--|--|--|----------|------------|
| 1.7 | Correct Lecture Instructor Login | Login button is clicked with correct Lecture Instructor username and password | Index.htm | home.php | A correct Lecture Instructor User's Username and it's corresponding Password | Attempts to login the Lecture Instructor with a correct Username and Password | Lecture Instructor homepage is generated | | P |
| 1.8 | Correct Course Administrator Login | Login button is clicked with correct Course Administrator username and password. | Index.htm | home.php | A correct Course Administrator User's Username and it's corresponding Password | Attempts to login the Course Administrator user with a correct Username and Password | Course Administrator homepage is generated | | P |

2. Register Screen

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/ Fail |
|-----|----------------------------|--|---------------------|---------------------|--------------------------|---|---|----------|---------------|
| 2.1 | Register | Register link is clicked | Index.htm | accountregister.php | Register link is clicked | Load Registration webpage | Registration screen is displayed for a new user to create an account | | P |
| 2.2 | First Name Entered | User enters their first name in the First Name box | accountregister.php | accountregister.php | User's First Name | Text is entered into First Name box | First Name entered by User is displayed in First Name box | | P |
| 2.3 | Last Name Entered | User enters their last name in the Last Name box | accountregister.php | accountregister.php | User's Last Name | Text is entered into Last Name box | Last Name entered by User is displayed in Last Name box | | P |
| 2.4 | Password Entered | User enters their desired password in the Password box | accountregister.php | accountregister.php | User's Password | Text is entered into Password box | Password entered by User is displayed in Password box | | P |
| 2.5 | Password (Re-Type) Entered | User enters their desired password in the Password (Re-Type) box | accountregister.php | accountregister.php | User's Password | Text is entered into Password (Re-Type) box | Password (Re-type) entered by User is displayed in Password (Re-Type) box | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/ Fail |
|-----|--|--|---------------------|---------------------|--|---|--|----------|------------|
| 2.6 | Lecture Section Entered | User enters the Lecture Section they are in. | accountregister.php | accountregister.php | User's Lecture Section | Text is entered into Lecture Section box | Lecture Section entered by User is displayed in Lecture Section box | | P |
| 2.7 | Lab Section Entered | User enters the Lab Section they are in. | accountregister.php | accountregister.php | User's Lab Section | Text is entered into Lab Section box | Lab Section entered by User is displayed in Lab Section box | | P |
| 2.8 | E-mail Address Entered | User enters the E-mail Address they want to use for the Automated Excel Grading System | accountregister.php | accountregister.php | User's E-mail Address | Text is entered into E-mail Address box | E-mail Address entered by User is displayed in E-mail Address box | | P |
| 2.9 | Registration Attempt with Fields not Entered | User attempts to register without entering all the required fields | accountregister.php | accountregister.php | Missing 1 or more of the 7 required fields | Attempt to register without entering all fields | Page is reloaded and a message is displayed stating that all fields need to be entered | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/ Fail |
|------|--|---|---------------------|------------------------|--|--|---|----------|------------|
| 2.10 | Password and Password (Re-Type) do not match | The user entered text in Password and Password (Re-Type) are not the same | accountregister.php | accountregister.php | All 7 required fields are entered, but the Password and Password (Re-Type) do not match | Attempts to register with all fields entered, but the Password and Password (Re-Type) do not match | Page is reloaded and a message is displayed stating that Password and Password (Re-Type) must be the same | | P |
| 2.11 | E-mail Address and E-mail Address (Re-type) do not match | The user entered text in E-mail Address and E-mail Address (Re-Type) are not the same | accountregister.php | accountregister.php | All 7 required fields are entered, but the E-mail Address text and E-mail Address (Re-Type) do not match | Attempts to register with all fields entered, but the E-mail Address and E-mail Address (Re-Type) do not match | Page is reloaded and a message is displayed stating that E-mail Address and E-mail Address (Re-Type) must be the same | | P |
| 2.12 | Successful Registration Attempt | User clicks Register and all fields are correctly entered | accountregister.php | successfulregister.php | All 7 fields are correctly entered | Attempt to register with all fields correctly entered | Page is displayed stating that the user has successfully been registered | | P |

3. Forgot Password Screen

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|---------------------------------------|--|--------------------|--------------------|---|---|--|-------------------|-----------|
| 3.1 | Forgot Password | Forgot Password link is clicked | Index.htm | forgotpassword.php | None | Load Forgot Password webpage | Forgot Password screen is displayed. | | P |
| 3.2 | User Enters E-mail Address | User enters their E-mail address in the E-Mail Address | forgotpassword.php | forgotpassword.php | User's E-mail Address | Test is entered into the E-mail Address box | E-mail Address entered by User is displayed in E-mail Address box | | P |
| 3.3 | User Submits Incorrect E-mail Address | User submits an incorrect E-mail Address in the E-Mail Address | forgotpassword.php | forgotpassword.php | An User's incorrect E-mail Address, then submit button is clicked | Attempts to send and incorrect E-mail to the database | Page is reloaded and displays a message stating that the E-mail Address does not exist in our database | could be improved | P |
| 3.4 | User Submits Correct E-Mail Address | User submits an correct E-mail Address in the E-Mail Address | forgotpassword.php | forgotpassword.php | An User's correct E-mail Address, then submit button is clicked | Attempts to send a correct E-mail to the database | Page is reloaded telling the user a password was sent to the E-mail address provided | | P |

4. Change Password

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/ Fail |
|-----|------------------------------|--|--------------------|--------------------|-------------------------------------|---|--|----------|---------------|
| 4.1 | Change Password Load Page | Change Password page is loaded | home.php | changepassword.php | none | Page is loaded and will display text boxes for changing the User's Password | Page displays text boxes for changing the User's Password | | P |
| 4.2 | Current Password Entered | User Enters their current password in the Current Password Box | changepassword.php | changepassword.php | The Current User's Current Password | Text is entered in the Current Password Box | The text that is entered by the user is displayed in the Current Password Box as asterisks | | P |
| 4.3 | New Password Entered | User Enters their New Password in the New Password Box | changepassword.php | changepassword.php | The Current User's New Password | Text Is entered in the New Password Box | The text that is entered by the user is displayed in the New Password Box as asterisks | | P |
| 4.4 | Re-Type New Password Entered | User Enters their New Password in the Re-Type New Password Box | changepassword.php | changepassword.php | The Current User's New Password | Text Is entered in the Re-Type New Password Box | The text that is entered by the user is displayed in the Re-Type New Password Box as asterisks | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|---|--|--------------------|--------------------|---------------------------------------|--|---|--|-----------|
| 4.5 | Submitting Changes with User's Incorrect Password Entered In Current Password Box | User submits their wrong password in the Current Password Box. | changepassword.php | changepassword.php | Clicking on the Submit Changes button | Attempts to change password with the User's incorrect Current Password | Page is reloaded and displays a message stating that the Current Password is wrong | | P |
| 4.6 | Submitting Changes with New Password and Re-Type New Password Mismatch | User submits a different password in the New Password box and the Re-Type New Password Box | changepassword.php | changepassword.php | Clicking on the Submit Changes button | Attempts to change password but New Password and Re-Type Password do not match | Page is reloaded and displays a message stating that the New Password and Re-Type Password do not match | | P |
| 4.7 | Successful Submit Changes | User Submits Changes in a correct manner | changepassword.php | changepassword.php | Clicking on the Submit Changes button | Attempts to change the password with all fields correctly entered | Page is re-generated stating that the User's Password has successfully been changed | shows actual password when typing(lecture and lab) | P |

5. Student Homepage

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|-----------------------|--|-------------------|-----------------------|-----------------------------|---|---|----------|-----------|
| 5.1 | Load Student Homepage | Student Homepage is loaded with students name at the top of the page | home.php | home.php | none | Determine that username is a student User | List information about how to navigate the page | | P |
| 5.2 | View Labs | Student clicks on the View Labs Link | home.php | studentview.php | Clicking View Labs Link | Program Finds all user's Labs and displays them | A new page with information about user's labs | | P |
| 5.3 | View Pre-Labs | Student clicks on the View Pre-Labs Link | home.php | studentviewprelab.php | Clicking View Pre-Labs Link | Program Finds all user's Pre-Labs and displays them | A new page with information about user's pre-labs | | P |
| 5.4 | Upload File | Student can upload their lab or prelab folders | uploadfile.php | uploadfile2.php | Clicking Upload File Link | Program loads a page for uploading files | A new page for selecting a lab to upload for | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|-----------------|---------------------------------|-------------------|--------------------|--|--|---|----------|-----------|
| 5.5 | Change Password | Change Password link is clicked | home.php | Changepassword.php | Clicking on the Change Password link in the left-hand menu | A new paged will be loaded with text box's for changing the current Student's Password | A new page is displayed with text boxes for changing the current Student's Password | | P |
| 5.6 | Logout | Logout link is clicked | home.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

6. Student View Labs/Pre-Labs

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|---|---|--|--|-------|--|---|----------|-----------|
| 6.1 | Generate Lab Grades Table | Table containing this students Lab grades is generated when page is displayed | studentview.php or studentviewprelab.php | studentview.php or studentviewprelab.php | none | Generate a table of this students Lab grades from the database | Table of students Lab grades displayed in correct format with all grades and information displayed | | P |
| 6.2 | Correct Labs Displayed in Table | Table contains correct Labs | studentview.php or studentviewprelab.php | studentview.php or studentviewprelab.php | none | Determine what Labs need to be displayed Display these Labs and their information in table | Lab's with key associated for both Lab and Pre-Lab are displayed | | P |
| 6.3 | Correct Unsubmitted Labs Information in Table | Table contains correct information about unsubmitted Labs | studentview.php or studentviewprelab.php | studentview.php or studentviewprelab.php | none | Determine which Labs and Pre-Labs are ready for submission but have not yet been submitted Display these Labs and Pre-Labs correctly in table | Unsubmitted Labs and Pre-Labs with key associated display empty rows and Submit link for both Lab and Pre-Lab | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|---|---|--|--|-------------------------------------|--|--|----------|-----------|
| 6.4 | Correct Submitted Pre-Labs Information in Table | Table contains correct information about submitted Pre-Labs | studentview.php or studentviewprelab.php | studentview.php or studentviewprelab.php | none | Determine which Pre-Labs have been submitted Display these Pre-Labs correctly in table | Pre-Labs that have been submitted display Submission Date Display View Error Report link | | P |
| 6.5 | Correct Submitted, Ungraded Labs Information in Table | Table contains correct information about Submitted, Ungraded Labs | studentview.php or studentviewprelab.php | studentview.php or studentviewprelab.php | none | Determine which Labs have been submitted, but not yet graded Display correct information about these Labs | Submitted Labs displayed with Submission Date Submit Lab link is now gone | | P |
| 6.6 | Correct Graded Labs Information in Table | Table contains correct information about Graded Labs | studentview.php or studentviewprelab.php | studentview.php or studentviewprelab.php | none | Determine which Labs have been graded Display correct information about these Labs | Graded Labs displayed with Lab Grades and View Error Report link Labs that were not submitted, but graded, will receive a 0 grade | | P |
| 6.7 | Logout | Logout link is clicked | studentview.php or studentviewprelab.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

7. Lab Instructor Homepage

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|----------------------|---|-------------------|------------------|--|--|---|----------|-----------|
| 7.1 | Load Page | Page loads properly | index.php | home.php | A correct Lab Instructor's Username and Password | Determine that Username is a Lab Instructor User Generate the Lab Instructor homepage | Homepage screen displays Lab instructor homepage and lab Instructor's name appears at the top of the screen | | P |
| 7.2 | Lab Section Dropdown | Choose Lab Section dropdown menu displays | home.php | home.php | User clicks on the Lab Section dropdown menu | Choice selected will be displayed when the drop down disappears | A dropdown menu with all current Lab Sections along with an "All Lab Sections" item is displayed for choosing Lab Section to view | | P |
| 7.3 | Lab Number Dropdown | Choose Lab Number dropdown menu displays | home.php | home.php | User clicks on the Lab Number dropdown menu | Choice selected will be displayed when the drop down disappears | A dropdown menu with all viewable Lab Numbers along with an "All Labs" item is displayed for choosing Lab Number to view | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|-----------------|---------------------------------|-------------------|--------------------|--|---|--|----------|-----------|
| 7.4 | View | View Button is clicked | home.php | lab_view.php | Item in Lab Section dropdown is selected and Item in Lab Number dropdown is selected | Determine the Lab Section and Lab Number criteria Generate Lab Instructor View Labs page | Lab Instructor View Labs page is displayed | | P |
| 7.5 | Change Password | Change Password link is clicked | home.php | Changepassword.php | Clicking on the Change Password link in the left-hand menu | A new paged will be loaded with text box's for changing the current Instructor's Password | A new page is displayed with text boxes for changing the current Instructor's Password | | P |
| 7.6 | Logout | Logout link is clicked | home.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

8. Lab Instructor View Errors

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|--|--|-------------------|------------------|---|--|---|----------|-----------|
| 8.1 | View Errors Page Load | Page is loaded for the Lab Instructor to view the errors of a particular students lab | labviewall.php | labreport.php | none | Program finds a students lab in the database and returns the errors of the lab | The page is displayed and shows what errors were picked up by the program. There are also text boxes associated with each error for the lab instructor to change the grade, and an approve button | | P |
| 8.2 | Re-Entering Number in the You Received Box | Number that is entered by the user rewrites previous number in the "You Received" text box | labreport.php | labreport.php | A number, 0 or greater but less than or the same as the total points of the error | Number entered overwrites previous data | New number shows up in the "You Received" Box | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|-------------------|--|-------------------|------------------|-------------------------------------|---|--|----------|-----------|
| 8.3 | Approve New Grade | New numbers are updated for the errors | labreport.php | labreport.php | Clicking Approve Button | The program updates the database rewriting the points given for errors with the new numbers | A message displayed saying the grades were submitted, if the user used an incorrect number than a message tells them to enter a correct number | | Fail |
| 8.4 | Logout | Logout link is clicked | labreport.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

9. Lab Instructor View All

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|--------------------|---|-------------------|-------------------|--|---|---|----------|-----------|
| 9.1 | View Lab Page Load | Page is loaded for the Lab Instructor to view all Students lab files | home.php | viewall.php | none | Page is loaded and displays all of the Instructor's Lab sections and lab numbers | The page is displayed and shows the lab sections and lab numbers selected. | | P |
| 9.2 | View Submitted Lab | Lab Instructor can download and view a particular student's lab files | viewall.php | students lab file | User clicks on the view submitted lab button | Clicking on the View Submitted Lab Button will download the excel file to the User's computer | The Excel File will be downloaded and will be able to be viewed by the Lab Instructor | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-----|-------------|--|-------------------|------------------|---------------------------------------|--|---|----------|-----------|
| 9.3 | View Errors | Lecture Instructor can view the errors made by the student on the lab grade. | viewall.php | view_errors.php | User clicks on the View Errors Button | A new page will be displayed listing what the student got correct and what the student got wrong. Errors will be listed in red and correct will be listed in black | A new page is displayed showing what the student got correct and what the student got wrong. Errors are listed in red and correct are listed in black | | P |
| 9.4 | Logout | Logout link is clicked | viewall.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

10. Lecture Instructor Homepage

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|------------------------------|---|-------------------|------------------|--|--|---|----------|-----------|
| 10.1 | Lecture Instructor Load Page | Lecture Instructor Homepage loads properly | index.htm | home.php | A correct Lecture Instructor Username and Password | Determine that username is a Lecture Instructor User Generate the Lecture Instructor homepage | Homepage screen displays Lecture Instructor homepage and Lecture Instructor's name appears at the top of the screen | | P |
| 10.2 | Lecture Section Dropdown | Choose Lecture Section dropdown menu displays | home.php | home.php | User clicks on the Lecture Section dropdown box | Based on the Lecture Instructor, the dropdown will display the current sections the user teaches along with an option view all | A dropdown menu with all current Lecture Sections along with an "All Lecture Sections" item is displayed for choosing Lab Section to view | | P |
| 10.3 | Lab Number Dropdown | Choose Lab Number dropdown menu displays | home.php | home.php | User clicks on the Lab Number dropdown box | A dropdown will display all the labs completed up to that point in time along with an option to view all | A dropdown menu with all viewable Lab Numbers along with an "All Labs" item is displayed for choosing Lab Number to view | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|---------------------|---------------------------------|-------------------|--------------------|--|---|---|----------|-----------|
| 10.4 | View | View Button is clicked | home.php | lec_view.php | Item in Lecture Section dropdown is selected and Item in Lab Number dropdown is selected | Determine the Lecture Section and Lab Number criteria Generate Lecture Instructor View Labs page | Lecture Instructor View Labs page is displayed | | P |
| 10.5 | View all is clicked | View All Link is clicked | home.php | lec_view.php | Clicking on the View All link in the left-hand menu | Link will display all of the Lecture Instructor's current Lecture Sections and their corresponding labs | A new page is displayed with all of the Lecture Instructor's current Lecture Section Students and their grade on labs | | P |
| 10.6 | Change Password | Change Password link is clicked | home.php | Changepassword.php | Clicking on the Change Password link in the left-hand menu | A new paged will be loaded with text box's for changing the current Lecture Instructor's Password | A new page is displayed with text boxes for changing the current Lecture Instructor's Password | | P |
| 10.7 | Logout | Logout link is clicked | home.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

11. Lecture Instructor View All

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--------------------|--|-------------------|-------------------|--|--|--|----------|-----------|
| 11.1 | View Lab Page Load | Page is loaded for the Lecture Instructors to view all Students lab files | home.php | viewall.php | none | Page is loaded and displays all of the Instructor's lecture sections and lab numbers | The page is displayed and shows the lecture sections and lab numbers selected. | | P |
| 11.2 | View Submitted Lab | Lecture Instructor can download and view a particular student's lab files | viewall.php | students lab file | User clicks on the view submitted lab button | Clicking on the View Submitted Lab Button will download the excel file to the User's computer | The Excel File will be downloaded and will be able to be viewed by the Lecture Instructor | | P |
| 11.3 | View Errors | Lecture Instructor can view the errors made by the student on the lab grade. | viewall.php | view_errors.php | User clicks on the View Errors Button | A new page will be displayed listing what the student got correct and what the student got wrong. Errors will be listed in red and correct will be listed in black | A dropdown menu with all viewable Lab Numbers along with an "All Labs" item is displayed for choosing Lab Number to view | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------------|-------------|------------------------|--------------------------|-------------------------|-------------------------------------|---|---|-----------------|------------------|
| 11.4 | Logout | Logout link is clicked | viewall.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

12. Lecture Instructor View Labs

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--------------------|---|-------------------|-------------------|--|---|---|-----------------------------|-----------|
| 12.1 | View Lab Page Load | Page is loaded for the Lecture Instructors to view Students lab files | home.php | lec_view.php | none | Page is loaded and displays the selected lecture sections and lab numbers | The page is displayed and shows the lecture sections and lab numbers selected. | | P |
| 12.2 | View Submitted Lab | Lecture Instructor can download and view a particular student's lab files | lec_view.php | students lab file | User clicks on the view submitted lab button | Clicking on the View Submitted Lab Button will download the excel file to the User's computer | The Excel File will be downloaded and will be able to be viewed by the Lecture Instructor | can see any submitted files | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|-------------|--|-------------------|------------------|---------------------------------------|--|--|-----------------------------|-----------|
| 12.3 | View Errors | Lecture Instructor can view the errors made by the student on the lab grade. | lec_view.php | view_errors.php | User clicks on the View Errors Button | A new page will be displayed listing what the student got correct and what the student got wrong. Errors will be listed in red and correct will be listed in black | A dropdown menu with all viewable Lab Numbers along with an "All Labs" item is displayed for choosing Lab Number to view | can see any submitted files | P |
| 12.4 | Logout | Logout link is clicked | lec_view.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

13. Course Administrator Homepage

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--------------------------------|---|-------------------|------------------|--|---|--|--|-----------|
| 13.1 | Course Administrator Load Page | Course Administrator Homepage loads properly | index.htm | home.php | A correct Course Administrator Username and Password | Determine that username is a Course Administrator User Generate the Course Administrator homepage | Homepage screen displays Course Administrator homepage and Course Administrator's name appears at the top of the screen | | P |
| 13.2 | Lecture Section Dropdown | Choose Lecture Section dropdown menu displays | home.php | home.php | User clicks on the Lecture Section dropdown box | Dropdown will display all the lab sections and lecture sections along with a view all sections option | A dropdown menu with all current lecture and lab sections along with a view all sections option is displayed | | P |
| 13.3 | Lab Number Dropdown | Choose Lab Number dropdown menu displays | home.php | home.php | User clicks on the Lab Number dropdown box | A dropdown will display all the labs completed up to that point in time along with an option to view all | A dropdown menu with all viewable Lab Numbers along with a view all labs option is displayed for choosing Lab Number to view | | P |
| 13.4 | View | View Button is clicked | home.php | instuc_view.php | Item in Lecture Section dropdown is selected and Item in Lab Number dropdown is selected | Determine the Lecture Section and Lab Number criteria Generate Course Administrator View Labs page | Course Administrator View Labs page is displayed | when view is clicked without selecting a section and number it says "no files" | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|---------------------------------------|---|-------------------|--------------------|---|---|---|----------|-----------|
| 13.6 | Search For a User not in the Database | Course Administrator can search for a specific user | home.php | search_results.php | A User's name in the search box then clicking search | Determine if the text entered in the Search Box, is part of a User's name in the database | Display a message stating that the results were not found in the database | | n/a |
| 13.7 | View All Students | View All Students Link is clicked | home.php | | Clicking on the View All Students link in the left-hand menu | Link will display all of the Students that are currently registered users | A new page is displayed with all of the Students that are currently registered users | | P |
| 13.8 | View All Instructors | View All Instructors Link is clicked | home.php | | Clicking on the View All Instructors link in the left-hand menu | Link will display all of the Instructors that are currently registered users | A new page is displayed with all of the Instructors that are currently registered users | | P |
| 13.9 | Create Instructor Account | Create Instructor Account Link is Clicked | home.php | createaccount.php | Clicking on the Create Account link in the left-hand menu | A new page will be loaded with text box's for creating an Instructor Account | A new page is displayed with text boxes for creating an Instructor Account | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-------|---------------|-------------------------------|-------------------|------------------|---|---|---|----------|-----------|
| 13.10 | Key Files | Key Files Link in Clicked | home.php | viewkeys.php | Clicking on the Upload Lab Key link in the left-hand menu | A new page will be loaded with boxes for uploading a Lab Key | A new page is displayed with boxes for uploading a Lab Key | | P |
| 13.11 | Sections | Set Sections Link is clicked | home.php | setsections.php | Clicking on the Sections link in the left-hand menu | A new page will be loaded with options for setting the Lab/Lecture Sections | A new page is displayed with options for setting Lab/Lecture Sections | | P |
| 13.12 | Admin Account | Admin Account Link is clicked | home.php | adminaccount.php | Clicking on the Admin Account link in the left-hand menu | A new page will be loaded with options for the Administrator Account | A new page is displayed with options for the Administrator Account | | P |
| 13.13 | Logout | Logout link is clicked | home.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

14. View All Students Course Administrator

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|-----------------------------|---|---------------------|-----------------------|---|---|---|----------|-----------|
| 14.1 | View All Students Page Load | Page is loaded for the Course Administrator to view all of the students | home.php | viewallstudents.php | none | Page will be displayed with all the of the registered student users | All registered student users will be listed | | P |
| 14.2 | Delete All Sudent | Course Administrator can delete all students from the database if they want | viewallstudents.php | deleteallstudents.php | Clicking the Delete All Students button | Clicking on the Delete All Students button will bring up a confirmation page stating "Are you sure you want to delete all of the students?" | A page is displayed with a confirmation statement about deleting all the students | | P |
| 14.3 | Edit Student Information | Course Administrator can edit a students information | viewallstudents.php | editstudent.php | Clicking the Edit Button | A new page will be displayed with text boxes for editing a students information | A new page is displayed with text boxes for editing students information | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|---------------------------------------|--|---------------------|---------------------|---|---|--|-----------------|-----------|
| 14.4 | Delete Student | Course Administrator can delete a particular student | viewallstudents.php | deletestudent.php | Clicking the Delete button on the same line as the student's name | Clicking on the Delete button will bring up a confirmation page stating "Are you sure you want to delete this student?" | A page is displayed with a confirmation statement about deleting the student | | P |
| 14.5 | Delete Student, Confirmation accept | Course Admin Confirms to Delete the Student | deletestudent.php | deletestudent.php | Clicking Yes after the confirmation message | Student and everything associated with the student will be removed from the database | A page is displayed saying that the student was deleted from the database | no confirmation | n/a |
| 14.6 | Delete Students, Confirmation decline | Course Admin Declines to delete the student | deletestudent.php | viewallstudents.php | Clicking No after the confirmation message | Page will be redirected back to the view all students page | Student remains in the database and the View all Students page is displayed | no confirmation | n/a |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|---|--|----------------------|----------------------|---|---|--|-----------------|-----------|
| 14.7 | Delete All Students, Confirmation accept | Course Admin Confirms to Delete all the Students | deleteallstudent.php | deleteallstudent.php | Clicking Yes after the confirmation message | All Students and everything associated with the student will be removed from the database | A page is displayed saying that the student was deleted from the database | no confirmation | n/a |
| 14.8 | Delete All Students, Confirmation decline | Course Admin Declines to delete all the students | deleteallstudent.php | viewallstudents.php | Clicking No after the confirmation message | Page will be redirected back to the view all students page | All Students remains in the database and the View all Students page is displayed | no confirmation | n/a |
| 14.9 | Logout | Logout link is clicked | viewallstudents.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

15. View All Instructors Course Administrator

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--------------------------------|---|------------------------|--------------------------|--|---|--|----------|-----------|
| 15.1 | View All Instructors Page Load | Page is loaded for the Course Administrator to view all of the students | home.php | viewallinstructors.php | none | Page will be displayed with all the of the instructors | All Instructors users will be listed | | P |
| 15.2 | Delete All Instructors | Course Administrator can delete all Instructors from the database | viewallinstructors.php | deleteallinstructors.php | Clicking the Delete All Instructors button | Clicking on the Delete All Instructors button will bring up a confirmation page stating "Are you sure you want to delete all of the instructors?" | A page is displayed with a confirmation statement about deleting all the instructors | | P |
| 15.3 | Edit Instructor Information | Course Administrator can edit a Instructor's information | viewallinstructors.php | editinstructor.php | Clicking the Edit Button | A new page will be displayed with text boxes for editing an instructor's information | A new page is displayed with text boxes for editing instructor's information | | P |
| 15.4 | Delete Instructor | Course Administrator can delete a particular Instructor | viewallinstructors.php | deleteinstructor.php | Clicking the Delete button on the same line as the instructor's name | Clicking on the Delete button will bring up a confirmation page stating "Are you sure you want to delete this instructor?" | A page is displayed with a confirmation statement about deleting the instructor | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--|---|--------------------------|--------------------------|---|---|---|-----------------|-----------|
| 15.5 | Delete Instructor, Confirmation accept | Course Admin Confirms to Delete the Instructor | deleteinstructor.php | deleteinstructor.php | Clicking Yes after the confirmation message | Instructor will be removed from the database | A page is displayed saying that the instructor was deleted from the database | no confirmation | n/a |
| 15.6 | Delete Instructor, Confirmation decline | Course Admin Declines to delete the instructor | deleteinstructor.php | viewallinstructors.php | Clicking No after the confirmation message | Page will be redirected back to the view all instructors page | Instructor remains in the database and the View all Students page is displayed | no confirmation | n/a |
| 15.7 | Delete All Students, Confirmation accept | Course Admin Confirms to Delete all the Instructors | deleteallinstructors.php | deleteallinstructors.php | Clicking Yes after the confirmation message | All Instructors will be removed from the database | A page is displayed saying that the student was deleted from the database | no confirmation | n/a |
| 15.8 | Delete All Instructors, Confirmation decline | Course Admin Declines to delete all the instructors | deleteallinstructors.php | viewallinstructors.php | Clicking No after the confirmation message | Page will be redirected back to the view all instructors page | All Instructors remains in the database and the View all Students page is displayed | no confirmation | n/a |
| 15.9 | Logout | Logout link is clicked | viewallinstructors.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

16. Create Instructor-Course Administrator

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|-----------------------------|--|-------------------------------|-------------------|--|--|--|----------|-----------|
| 16.1 | Create Instructor Load Page | Create Instructor link is clicked | Any Course Administrator Page | createaccount.php | Create Instructor link is clicked | Load Create Instructor webpage | Create Instructor screen is displayed for a Course Administrator to create an Instructor account | | P |
| 16.2 | First Name Entered | Admin enters the Instructor's first name in the First Name box | createaccount.php | createaccount.php | Instructor's First Name | Text is entered into First Name box | First Name entered by Admin is displayed in First Name box | | P |
| 16.3 | Last Name Entered | Admin enters the Instructor's last name in the Last Name box | createaccount.php | createaccount.php | Instructor's Last Name | Text is entered into Last Name box | Last Name entered by Admin is displayed in Last Name box | | P |
| 16.4 | Type of Instructor | Admin selects Type of Instructor from the drop down menu | createaccount.php | createaccount.php | Selecting a choice from dropdown. Choices are: Lab Instructor, Lecture Instructor, or Both | Choice selected will be displayed when the drop down diappears | The choice made by the admin is displayed on the line when the drop down diappears | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--|--|-------------------|-------------------|--|---|--|----------|-----------|
| 16.5 | Password Entered | Admin enters their desired password for the new Instructor in the Password box | createaccount.php | createaccount.php | Admin's Password for new Instructor | Text is entered into Password box | Password for new Instructor entered by Admin is displayed in Password box | | P |
| 16.6 | Password (Re-Type) Entered | Admin enters their desired password for the new Instructor in the Password (Re-Type) box | createaccount.php | createaccount.php | Admin's Password for new Instructor | Text is entered into Password (Re-Type) box | Password (Re-type) entered by Admin is displayed in Password (Re-Type) box | | P |
| 16.7 | E-mail Address Entered | Admin enters the E-mail Address of the new Instructor being created | createaccount.php | createaccount.php | New Instructor's E-mail Address | Text is entered into E-mail Address box | E-mail Address entered by Admin is displayed in E-mail Address box | | P |
| 16.8 | Registration Attempt with Fields not Entered | Admin attempts to register new Instructor without entering all the required fields | createaccount.php | createaccount.php | Missing 1 or more of the 6 required fields | Attempt to register without entering all fields | Page is reloaded and a message is displayed stating that all fields need to be entered | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-------|--|--|-------------------|-------------------|---|--|---|----------|-----------|
| 16.9 | Password and Password (Re-Type) do not match | The Admin entered text in Password and Password (Re-Type) are not the same | createaccount.php | createaccount.php | All 6 required fields are entered, but the Password and Password (Re-Type) do not match | Attempts to register with all fields entered, but the Password and Password (Re-Type) do not match | Page is reloaded and a message is displayed stating that Password and Password (Re-Type) must be the same | | P |
| 16.10 | Successful Registration Attempt | Admin clicks Register and all fields are correctly entered | createaccount.php | createaccount.php | All 6 fields are correctly entered | Attempt to register with all fields correctly entered | Page is displayed stating that the Admin has successfully created a new Instructor | | P |
| 16.11 | Logout | Logout link is clicked | createaccount.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

17. Upload Lab Keys

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|---------------------------|---|-------------------|------------------|---|---|--|--|-----------|
| 17.1 | Upload Lab Keys Load Page | Page is loaded for the Course Administrator to upload a lab key | uploadkey.php | uploadkey.php | none | Page will be displayed with information about uploading a lab key | Three text boxes for entering text and four buttons | | P |
| 17.2 | Lab Number Entered | Admin enters the lab number of the key being uploaded | uploadkey.php | uploadkey.php | The lab number being uploaded | Text is entered into Lab Number box | Lab number entered by Admin is displayed in Lab Number box | | P |
| 17.3 | Type of Key | Drop-down to choose type of key | uploadkey.php | uploadkey.php | Choosing Lab or Pre Lab from drop-down | Choice from drop-down will be displayed on the line | Choice is displayed on the line | | P |
| 17.4 | Due Date | Selecting the date, month, and year | uploadkey.php | uploadkey.php | Choosing the date, month, and year from the three drop-down menus | The input will be displayed on the due date line | The due date will appear on the line | You can select any date, even dates that don't exist (ex. Feb. 31) | Fail |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--|--|-------------------|------------------|--|---|--|----------|-----------|
| 17.5 | Sample File(s) Browse | Admin clicks on the Browse button and looks for the sample file(s) associated with the lab key | uploadkey.php | uploadkey.php | Clicking on the Browse button and selecting the sample file(s) associated with the lab key | The sample file(s) selected by the user will be uploaded to the database when the user eventually clicks "submit files" | The path of the file being uploaded will appear in the sample file(s) text box | | P |
| 17.6 | Grading Key Browse | Admin clicks on the Browse button and looks for the grading key associated with the lab key | uploadkey.php | uploadkey.php | Clicking on the Browse button and selecting the grading key associated with the lab key | The Grading key selected by the user will be uploaded to the database when the user eventually clicks "submit files" | The path of the file being uploaded will appear in the Grading key text box | | P |
| 17.7 | Submit Files Attempt with Fields not Entered | User attempts to submit files without entering all the required fields | uploadkey.php | uploadkey.php | Missing 1 or more of the 4 required fields | Attempt to submit files without entering all fields | Page is reloaded and a message is displayed stating that all fields need to be entered | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--------------------------------------|--------------------------------|-------------------|------------------|--|---|---|---|-----------|
| 17.8 | Submit Files with All Fields entered | Submit Files button is clicked | uploadkey.php | uploadkey.php | Clicking submit Files button with all fields entered | Submits Files with the associated lab number to the database | Page is reloaded and a message is displayed stating that the files were submitted correctly | must have a different name for the file than files already uploaded, or it says it was already uploaded | P |
| 17.9 | Logout | Logout link is clicked | uploadkey.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

18. Sections

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--------------------|---|-------------------|--------------------|--|--|--|----------|-----------|
| 18.1 | Sections Page Load | Page is loaded for the Course Administrator to set the correct lab and lecture sections | home.php | setsections.php | none | Page will be displayed with information about setting the lab and lecture sections | A table with the section number, instructor name, section type, and semester, as well as buttons for editing and deleting sections | | P |
| 18.2 | Add New Section | Page is loaded for the Admin to add a new section | setsections.php | setsectionsnew.php | Clicking on the Add New Section Button | Displaying a new page with information for adding a new section | A new page with text fields for entering information about a new section | | P |
| 18.3 | Edit Section | Page is loaded for the Admin to edit an existing section | setsections.php | editsections.php | Clicking on the Edit button | Displaying a new page with information for editing an existing section | A new page with text fields for editing information about an existing section | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|----------------|--|-------------------|-------------------|-------------------------------------|---|---|--|-----------|
| 18.4 | Delete Section | Page is loaded for the Admin to delete an existing section | setsections.php | deletesection.php | Clicking on the Delete button | Load a page confirming that you want to delete the section | Page is loaded that asked if you want to delete the section | No confirmation, just deletes section from table | Fail |
| 18.6 | Logout | Logout link is clicked | setsections.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

19. Admin Account

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|-----------------------------|---|-------------------|------------------|-------|--|---|----------|-----------|
| 19.1 | Admin Account Load Page | Page is loaded for the Course Administrator to edit their information | adminaccount.php | adminaccount.php | none | Page will be displayed with information about editing the Course Administrator | The name and e-mail of the Course Administrator along with two buttons to edit the Course Administrator; Change Password and Change Account | | P |
| 19.2 | Course Administrator Name | Page displays the Course Administrator's name next to the text "Name: " | adminaccount.php | adminaccount.php | none | The program will grab the name of the Course Administrator | The name of the Course Administrator appears on the page | | P |
| 19.3 | Course Administrator E-Mail | Page displays the Course Administrator's E-Mail next to the text "E-Mail: " | adminaccount.php | adminaccount.php | none | The program will grab the E-Mail of the Course Administrator | The E-Mail of the Course Administrator appears on the page | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|----------------------|--|-------------------|---------------------|---|---|---|----------|-----------|
| 19.4 | Change Password | Course Administrator clicks change password | adminaccount.php | changeadminpass.php | Clicking on the Change Password button | The program redirects to change administrator password page | Change Administrator Password page displayed | | P |
| 19.5 | Change Administrator | Course Administrator clicks Change Administrator | adminaccount.php | changeadmin.php | Clicking on the Change Administrator button | The program redirects to Change Administrator page | Change Administrator page displayed | | P |
| 19.6 | Logout | Logout link is clicked | adminaccount.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

20. Edit Student Information

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--------------------|---|-------------------|------------------|----------------------------------|---|--|----------|-----------|
| 20.1 | First Name Entered | Admin enters the Student's first name in the First Name box | editstudent.php | editstudent.php | Student's First Name | Text is entered into First Name box | First Name entered by Admin is displayed in First Name box | | P |
| 20.2 | Last Name Entered | Admin enters the Student's last name in the Last Name box | editstudent.php | editstudent.php | Student's Last Name | Text is entered into Last Name box | Last Name entered by Admin is displayed in Last Name box | | P |
| 20.3 | Password Entered | Admin enters the password for the Student in the Password box | editstudent.php | editstudent.php | Student's Password | Text is entered into Password box | Student Password entered by Admin is displayed in Password box | | P |
| 20.4 | Lecture Section | Admin enters the students lecture section | editstudent.php | editstudent.php | Student's Lecture Section number | a number is entered in the lecture section text box | The number typed by the admin is displayed in the lecture section text box | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|-----------------------------|--|-------------------|------------------|-------------------------------------|--|--|---|-----------|
| 20.5 | Lab Section | Admin enters the students lab section | editstudent.php | editstudent.php | Student's Lab Section number | a number is entered in the lab section text box | The number typed by the admin is displayed in the lab section text box | | P |
| 20.6 | E-mail Address Entered | Admin enters the E-mail Address of the new Instructor being created | editstudent.php | editstudent.php | New Instructor's E-mail Address | Text is entered into E-mail Address box | E-mail Address entered by Admin is displayed in E-mail Address box | cannot change e-mail | Fail |
| 20.7 | Submit | Submit button is clicked | editstudent.php | editstudent.php | Clicking submit button | The database is updated with the new information for the student | A page is displayed stating that the changes were made successfully | Page is not displayed, changes take place automatically | P |
| 20.8 | Submit, with fields missing | Submit button is clicked with one or more of the 7 required fields empty | editstudent.php | editstudent.php | Clicking submit button | Program determines that one of the fields in missing information | A page is displayed stating that all fields must be filled in | | P |
| 20.9 | Logout | Logout link is clicked | editstudent.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

21. Edit Instructor Information

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--------------------|--|--------------------|--------------------|--|---|---|---|-----------|
| 21.1 | First Name Entered | Admin enters the Instructor's first name in the First Name box | editinstructor.php | editinstructor.php | Instructor's First Name | Text is entered into First Name box | First Name entered by Admin is displayed in First Name box | | P |
| 21.2 | Last Name Entered | Admin enters the Instructor's last name in the Last Name box | editinstructor.php | editinstructor.php | Instructor's Last Name | Text is entered into Last Name box | Last Name entered by Admin is displayed in Last Name box | | P |
| 21.3 | Type of Instructor | Admin selects Type of Instructor from the drop down menu | editinstructor.php | editinstructor.php | Selecting a choice from dropdown. Choices are: Lab Instructor, Lecture Instructor, or Both | Choice selected will be displayed when the drop down disappears | The choice made by the admin is displayed on the line when the drop down disappears | No box for selecting the type of instructor | Fail |
| 21.4 | Password Entered | Admin enters their desired password for the new Instructor in the Password box | editinstructor.php | editinstructor.php | Admin's Password for new Instructor | Text is entered into Password box | Password for new Instructor entered by Admin is displayed in Password box | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--|--|--------------------|--------------------|---|--|---|------------------------------|-----------|
| 21.5 | Password (Re-Type) Entered | Admin enters their desired password for the new Instructor in the Password (Re-Type) box | editinstructor.php | editinstructor.php | Admin's Password for new Instructor | Text is entered into Password (Re-Type) box | Password (Re-type) entered by Admin is displayed in Password (Re-Type) box | | P |
| 21.6 | E-mail Address Entered | Admin enters the E-mail Address of the new Instructor being created | editinstructor.php | editinstructor.php | New Instructor's E-mail Address | Text is entered into E-mail Address box | E-mail Address entered by Admin is displayed in E-mail Address box | cannot change a user's email | n/a |
| 21.7 | Registration Attempt with Fields not Entered | Admin attempts to register new Instructor without entering all the required fields | editinstructor.php | editinstructor.php | Missing 1 or more of the 6 required fields | Attempt to register without entering all fields | Page is reloaded and a message is displayed stating that all fields need to be entered | | P |
| 21.8 | Password and Password (Re-Type) do not match | The Admin entered text in Password and Password (Re-Type) are not the same | editinstructor.php | editinstructor.php | All 6 required fields are entered, but the Password and Password (Re-Type) do not match | Attempts to register with all fields entered, but the Password and Password (Re-Type) do not match | Page is reloaded and a message is displayed stating that Password and Password (Re-Type) must be the same | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-------|---------------------------------|--|--------------------|--------------------|-------------------------------------|---|--|----------|-----------|
| 21.9 | Successful Registration Attempt | Admin clicks Register and all fields are correctly entered | editinstructor.php | editinstructor.php | All 6 fields are correctly entered | Attempt to register with all fields correctly entered | Page is displayed stating that the Admin has successfully created a new Instructor | | P |
| 21.10 | Logout | Logout link is clicked | editinstructor.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

22. Edit Section

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|------------------------|---|-------------------|------------------|-----------------------------|---|--|------------|-----------|
| 22.1 | Edit Section Load Page | Page is loaded for the Course Administrator to edit the lab section | editsection.php | editsection.php | none | Page will be displayed with information about editing the lab and lecture section | Five text boxes for entering text and a drop-down for the section type | | P |
| 22.2 | First Name Entered | Admin enters the Instructor's first name in the First Name box | editsection.php | editsection.php | Instructor's First Name | Text is entered into First Name box | First Name entered by Admin is displayed in First Name box | not needed | n/a |
| 22.3 | Last Name Entered | Admin enters the Instructor's last name in the Last Name box | editsection.php | editsection.php | Instructor's Last Name | Text is entered into Last Name box | Last Name entered by Admin is displayed in Last Name box | not needed | n/a |
| 22.4 | E-mail Address Entered | Admin enters the E-mail Address of the sections Instructor | editsection.php | editsection.php | Instructor's E-mail Address | Text is entered into E-mail Address box | E-mail Address entered by Admin is displayed in E-mail Address box | not needed | n/a |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|-------------------------|--|-------------------|------------------|-------------------------------------|---|--|----------------------------------|-----------|
| 22.5 | Section Number Entered | Admin enters the section number | editsection.php | editsection.php | Number of the Section being edited | Text is entered into Section number box | Section Number entered by Admin is displayed in Section Number box | cannot change | n/a |
| 22.6 | Choose Section Type | Admin Chooses what type of section to edit | editsection.php | editsection.php | Either Lab or Lecture Section | Show chosen type at the top of the drop-down | Chosen type is shown at the top of the drop-down | | P |
| 22.7 | Semester Entered | Admin enters the semester | editsection.php | editsection.php | Semester being edited | Text is entered into Semester box | Semester entered by Admin is displayed in Semester box | not needed | n/a |
| 22.8 | Successful Edit Attempt | Admin clicks Edit and all fields are correctly entered | editsection.php | editsection.php | All 6 fields are correctly entered | Attempt to Edit with all fields correctly entered | Page is displayed stating that the Admin has successfully edited the section | no display saying it was changed | P |
| 22.9 | Logout | Logout link is clicked | editsection.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

23. Add New Lab and Lecture Section

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|---|---|--------------------|--------------------|-------------------------------------|--|--|---|-----------|
| 23.1 | Add New Lab And Lecture Section Page Load | Page is loaded for the Course Administrator to add a new lab or lecture section | setsectionsnew.php | setsectionsnew.php | none | Page will be displayed with text boxes and drop-downs for adding a new section | four text boxes for entering text and a drop-down for the section type | | P |
| 23.2 | Section Number Entered | Admin enters the section number | setsectionsnew.php | setsectionsnew.php | Number of the Section being created | Text is entered into Section number box | Section Number entered by Admin is displayed in Section Number box | | P |
| 23.3 | Choose Section Type | Admin Chooses what type of section to create | setsectionsnew.php | setsectionsnew.php | Either Lab or Lecture Section | Show chosen type at the top of the drop-down | Chosen type is shown at the top of the drop-down | | P |
| 23.4 | Submit | Submit button is clicked | setsectionsnew.php | setsectionsnew.php | Clicking submit button | A new item is added to the database table for sections | The program redirects back to setsection.php with the updated sections | Lab and Lecture Sections can't have the same number | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/ Fail |
|------|-----------------------------|--|--------------------|--------------------|-------------------------------------|--|---|----------|---------------|
| 23.5 | Submit, with fields missing | Submit button is clicked with one or more of the 4 required fields empty | setsectionsnew.php | setsectionsnew.php | Clicking submit button | Program determines that one of the fields in missing information | A page is displayed stating that all fields must be filled in | | P |
| 23.6 | Logout | Logout link is clicked | setsections.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

24. Change Administrator

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|--------------------------------|---|-------------------|------------------|--------------------------------|--|---|----------|-----------|
| 24.1 | Change Administrator Page Load | Page is loaded for the Course Administrator change the Course Administrator | adminaccount.php | changeadmin.php | none | Page will be displayed with text boxes for creating a new Course Administrator | five text boxes for entering text for a new Course Administrator | | P |
| 24.2 | First Name Entered | Admin enters the new Administrator's first name in the First Name box | changeadmin.php | changeadmin.php | New Administrator's First Name | Text is entered into First Name box | First Name entered by Admin is displayed in First Name box | | P |
| 24.3 | Last Name Entered | Admin enters the new Administrator's last name in the Last Name box | changeadmin.php | changeadmin.php | New Administrator's Last Name | Text is entered into Last Name box | Last Name entered by Admin is displayed in Last Name box | | P |
| 24.4 | Password Entered | Admin enters the new Administrator's password | changeadmin.php | changeadmin.php | New Administrator's Password | Text is entered into Password box | Password entered by User is displayed in Password box | | P |
| 24.5 | Password (Re-Type) Entered | Admin enters the new Administrator's password | changeadmin.php | changeadmin.php | New Administrator's Password | Text is entered into Password (Re-Type) box | Password (Re-type) entered by User is displayed in Password (Re-Type) box | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|-------|--|---|-------------------|------------------|---|--|---|----------|-----------|
| 24.6 | E-mail Address Entered | Admin enters the E-mail Address of the new Administrator | changeadmin.php | changeadmin.php | New Administrator's E-mail Address | Text is entered into E-mail Address box | E-mail Address entered by Admin is displayed in E-mail Address box | | P |
| 24.7 | Registration Attempt with Fields not Entered | User attempts to register without entering all the required fields | changeadmin.php | changeadmin.php | Missing 1 or more of the 5 required fields | Attempt to register without entering all fields | Page is reloaded and a message is displayed stating that all fields need to be entered | | P |
| 24.8 | Password and Password (Re-Type) do not match | The user entered text in Password and Password (Re-Type) are not the same | changeadmin.php | changeadmin.php | All 5 required fields are entered, but the Password and Password (Re-Type) do not match | Attempts to register with all fields entered, but the Password and Password (Re-Type) do not match | Page is reloaded and a message is displayed stating that Password and Password (Re-Type) must be the same | | P |
| 24.9 | Successful Registration Attempt | User clicks Register and all fields are correctly entered | changeadmin.php | changeadmin.php | All 7 fields are correctly entered | Attempt to register with all fields correctly entered | Page is displayed stating that the user has successfully been registered | | P |
| 24.10 | Logout | Logout link is clicked | changeadmin.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

25. Change Administrator Password

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/ Fail |
|------|------------------------------|--|---------------------|---------------------|-------------------------------------|---|--|----------|---------------|
| 25.1 | Change Password Load Page | Change Password page is loaded | adminaccount.php | changeadminpass.php | none | Page is loaded and will display text boxes for changing the User's Password | Page displays text boxes for changing the User's Password | | P |
| 25.2 | Current Password Entered | User Enters their current password in the Current Password Box | changeadminpass.php | changeadminpass.php | The Current User's Current Password | Text is entered in the Current Password Box | The text that is entered by the user is displayed in the Current Password Box as asterisks | | P |
| 25.3 | New Password Entered | User Enters their New Password in the New Password Box | changeadminpass.php | changeadminpass.php | The Current User's New Password | Text Is entered in the New Password Box | The text that is entered by the user is displayed in the New Password Box as asterisks | | P |
| 25.4 | Re-Type New Password Entered | User Enters their New Password in the Re-Type New Password Box | changeadminpass.php | changeadminpass.php | The Current User's New Password | Text Is entered in the Re-Type New Password Box | The text that is entered by the user is displayed in the Re-Type New Password Box as asterisks | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|---|--|---------------------|---------------------|---------------------------------------|--|---|----------|-----------|
| 25.5 | Submitting Changes with User's Incorrect Password Entered In Current Password Box | User submits their wrong password in the Current Password Box. | changeadminpass.php | changeadminpass.php | Clicking on the Submit Changes button | Attempts to change password with the User's incorrect Current Password | Page is reloaded and displays a message stating that the Current Password is wrong | | P |
| 25.6 | Submitting Changes with New Password and Re-Type New Password Mismatch | User submits a different password in the New Password box and the Re-Type New Password Box | changeadminpass.php | changeadminpass.php | Clicking on the Submit Changes button | Attempts to change password but New Password and Re-Type Password do not match | Page is reloaded and displays a message stating that the New Password and Re-Type Password do not match | | P |
| 25.7 | Successful Submit Changes | User Submits Changes in a correct manner | changeadminpass.php | changeadminpass.php | Clicking on the Submit Changes button | Attempts to change the password with all fields correctly entered | Page is re-generated stating that the User's Password has successfully been changed | | P |
| 25.8 | Logout | Logout link is clicked | changeadminpass.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

26. View Keys

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|----------------------------|---|-------------------|--|--|--|--|--|-----------|
| 26.1 | View Keys Load Page | Page is loaded for the Course Administrator to view lab keys and upload a key | viewkeys.php | viewkeys.php | none | Page will be displayed with information about uploading a lab key | Three text boxes for entering text and four buttons | | P |
| 26.2 | Upload Key Files | Clicking the Upload Key Files Button | viewkeys.php | uploadkey.php | Clicking the Upload Key Files Button | Load the uploadkey.php page | Lab number entered by Admin is displayed in Lab Number box | | P |
| 26.3 | Download Key Generator | Drop-down to choose type of key | viewkeys.php | A pop-up window asking to save or open | Clicking the Download Key Generator Button | Link will ask to save to disk or open. Opening it up will give instructions on how to create the Key Files | Choice is displayed on the line | | P |
| 26.4 | Delete All Key Files | Clicking the Delete All Key Files Button | viewkeys.php | viewkeys.php | Clicking the Delete All Key Files Button | The input will be displayed on the due date line | The due date will appear on the line | You can select any date, even dates that don't exist (ex. Feb. 31) | Fail |
| 26.5 | Display Key Files Uploaded | Key Files uploaded are displayed in a table | viewkeys.php | viewkeys.php | none | All uploaded Files will be displayed in a table | The lab number, filename, lab type, due date | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|---------------------|---------------------------------------|-------------------|------------------|---|---|---|----------|-----------|
| 26.6 | Displaying the file | Clicking the link to the file | viewkeys.php | the actual file | Clicking the link to the file | Clicking the link will open the file either in excel or in the browser window | The actual file | | P |
| 26.7 | Delete Key File | Deleting the Key File from the system | viewkeys.php | viewkeys.php | Clicking delete next to the Key File you want to delete | The File will be removed from the database and from the table | The File will disappear from the table | | P |
| 26.8 | Logout | Logout link is clicked | viewkeys.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

27. Upload File

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------|-------------------------------------|--|-------------------|------------------|--------------------------------|---|--|----------|-----------|
| 27.1 | Upload File Load Page | Page is loaded that displays information about grades | uploadfile2.php | uploadfile2.php | none | Determine the status of a lab or pre lab being uploaded or not | List the Filename, Due Date, File Type and Status | | P |
| 27.2 | Determine if information is correct | Make sure the Filename, Due Date, File Type and Status are correct | uploadfile2.php | uploadfile2.php | none | Make sure the Filename, Due Date, File Type and Status are correct | Make sure the Filename, Due Date, File Type and Status are correct | | P |
| 27.3 | Upload File Link | Student clicks on the Upload File Link | uploadfile2.php | savefile.php | Clicking the Upload File | Program loads a page for uploading files | A new page for uploading files | | P |
| 27.4 | Upload File | Student browses for a file and clicks upload | savefile.php | uploadfile2.php | Clicking Browse, then upload | Determine if the File uploaded is the correct one by comparing the name | brings to uploadfile2.php page. The status changes from "not-uploaded" to "Uploaded". The Upload File link also disappears | | P |
| 27.5 | Upload without a file | Student clicks upload without a file | savefile.php | writefile.php | Clicking Upload without a file | Program tries to upload nothing | Brings user to a page that says "incorrect file name" | | P |

| Num | Name | Description | State Before Test | State After Test | Input | Steps to be Executed | Expected Output | Comments | Pass/Fail |
|------------|-------------|------------------------|--------------------------|-------------------------|-------------------------------------|---|---|-----------------|------------------|
| 27.6 | Logout | Logout link is clicked | savefile.php | index.php | Clicking Logout in the bottom right | Logs the current user out of the Automated Excel Grading System | Brings the browser back to the initial login screen | | P |

III. Integration Test

Integration Testing

Pass/Fail Comments

- | | |
|---|---|
| 1. Can a user log-in once their profile is created? | P |
| 2. Can a user log-in once they change their password? | P |
| 3. When a user is deleted can they still log in? | P |
| 4. When a student user is created are they added to the view all students page? | P |
| 5. When a instructor user is created are they added to the view all instructors page? | P |
| 6. When a lab or prelab is submitted by a student is graded right away? | P |
| 7. When a student user is deleted are they removed from the view all students page? | P |
| 8. When a instructor user is deleted are they removed from the view all instructors page? | P |
| 9. When a instructor creates a new section is it added to the lab/lec sections page? | P |
| 10. When a instructor creates a new section is it removed from the lab/lec sections page? | P |

Appendices

I. Glossary of Terms

Cell: The smallest component of a Microsoft Excel workbook. Location is designated by its sheet, row, and column in the workbook.

Comments: Data stored in a Microsoft Excel workbook that pertains to a particular cell but is invisible unless user chooses to view the comment on a cell.

Gantt Chart: A popular type of bar chart that illustrates a project schedule including start and finish dates, tasks, and events that are to occur to complete the project

HTML: Hypertext Markup Language (HTML) is programming language used in the creation of Web pages.

Java: A programming language used for developing object oriented programs.

JavaScript: Javascript is a scripting language developed by Netscape that can interact with HTML source code, enabling Web authors to spice up their sites with dynamic content.

MySQL: An open source relational database management system (RDBMS) that uses Structured Query Language (SQL), the most popular language for adding, accessing, and processing data in a database.

PHP: PHP Hypertext Preprocessor is a widely-used, open-source, general-purpose scripting language that is especially suited for web development.

Sheet: Component of a workbook. Workbooks are composed of single or multiple sheets, each of which containing a spreadsheet. It should be noted that sheets within workbooks may access each others contents.

Structure Diagrams: graphical representation of the structure of the Automated Excel Grading System

Student User/Account: The most basic user of this software. Will be able to create their own accounts and use them to upload lab's and pre-lab's and also view their grades

Use Case Narrative: The basic functionality that the system will have for each of the users

Workbook: The type of files that Microsoft Excel uses which will be submitted to the Automated Excel Grading System for grading. Has file extension “.xls”

WriteableSheet: Denoted by the Automated Excel Grading System as a sheet that can has permissions such that the system may alter its contents.

xls: File extension for Workbook. See “Workbook.”