On the Exam Line

Test Plan

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#1: Case: Login (Administrator | User)
1. **Functional:**
   A. Log-In Page 001, Log-In Successful, Severity 1
   B. Enter a correct username and password combination. Click log-in
   C. It should take the user to the admin/user page.
      i. Ensure that you logged in correctly by verifying the user name displayed on the top right corner of the page (only for users)

2. **Equivalence Class:**
   A. Log-In Page 002, Log-In Failure, Severity 1
   B. Enter an incorrect username and password combination. Click log-in.
   C. It takes the user to the incorrect log-in page and then redirects back to the log-in page.

3. **Boundary Value:**
   A. Log-In Page 003, Empty Username Field, Severity 2
   B. Leave the username field blank and enter the correct password.
   C. It takes the user to the incorrect log-in page and then redirects back to the log-in page.

   A. Log-In Page 004, Empty Password Field, Severity 2
   B. Leave the password field blank and enter the correct username.
   C. It takes the user to the incorrect log-in page and then redirects back to the log-in page.

#2: Case: Add New User
1. **Functional:**
   A. Add New User Page 001, Add New User Successful, Severity 1
   B. Click the "Add New User" button.
      i. This should take you to the user information page.
      ii. Enter user information with a unique username.
      iii. Do not leave any of the fields blank or unselected.
   C. The following things should happen:
      i. User information should appear in database in the "users" table.
      ii. It should refresh the page and show an empty user information page.

2. **Equivalence Class:**
   A. Add New User Page 002, Add New User Successful, Severity 1

B. Click the "Add New User" button.
- iii. This should take you to the user information page.
- iv. Enter user information with a unique username.
- v. Do not leave any of the fields blank or unselected.

C. The following things should happen:
- vi. User information should appear in database in the "users" table.
- vii. It should refresh the page and show an empty user information page.

A. Add New User Page 003, Add New User Not Successful, Severity 2

B. Click the "Add New User" button.
- viii. This should take you to the user information page.
- ix. Enter user information with an existing username.

C. The following things should happen:
- i. User information should not appear in database in the "users" table.
- ii. It should show an error page saying that the user already exists.
- iii. It should redirect to an empty user information page after 2 seconds of the error page.

3. **Boundary Value:**

A. Add New User Page 004, Add New User Username Empty, Severity 2

B. Click the "Add New User" button.
- i. This should take you to the user information page.
- ii. Enter user information, leaving the username blank.

C. The following things should happen:
- i. User information should *not* appear in the database.
- ii. It will redirect to an error page.
- iii. After 2 seconds, it will redirect again to an empty user information page.

A. Add New User Page 005, Add New User Password Empty, Severity 2

B. Click the "Add New User" button.
- i. This should take you to the user information page.
- ii. Enter user information, leaving the password blank.

C. The following things should happen:
- i. User information should *not* appear in the database.
- ii. It will redirect to an error page.
- iii. After 2 seconds, it will redirect again to an empty user information page.

A. Add New User Page 005, Add New User Password Empty, Severity 2

B. Click the "Add New User" button.
- iv. This should take you to the user information page.
- v. Enter user information, leaving the real name blank.

C. The following things should happen:
- vi. User information should *not* appear in the database.
- vii. It will redirect to an error page.

      viii.   After 2 seconds, it will redirect again to an empty user information page.

#3: Case: Modify existing user
  1. **Functional:**
      D. Modify User 001, Modify User, Severity 2
      E. Select the "Modify User" option. Select the user to be modified then enter correct new information with a unique username.
      F. The following things should happen:
         i. The user details are modified in the database in the "users" table.
        ii. Redirects to the select user page.

  2. **Equivalence Class:**
      G. Modify User 002, Modify User - Existing Username, Severity 2
      H. Select the "Modify User" option. Select the user to be modified then enter new information with an already existing username.
      I. The following things should happen:
         i. Username is *not* updated in the database.
        ii. It will redirect to an error page.
        iii. After 2 seconds, it will redirect again to the select user page.

  3. **Boundary Value:**
      A. Modify User Page 004, Modify User - Empty Field(s), Severity 2
      B. Click the "Modify User" button.
        iv. This should take you to the user information page.
        v. Enter user information, leaving one or more fields blank.
      C. The following things should happen:
        vi. Variables with empty fields should remain the same.
        vii. Remaining values should be updated.
        viii. It should redirect back to the select user page.

#4: Case: Delete existing user
  1. **Functional:**
      A. Delete User 001, Delete User, Severity 1
      B. Select the "Delete User" option.
        iv. It should redirect to user selection page.
        v. Select the user to be deleted.
      C. The following things should happen:
        vi. The user's account details should be deleted from the database, along with any tests they have taken.
        vii. Redirects to the select user page.

2. **Equivalence Class**
   A. Delete User 002, Delete User, Severity 1
   B. Select the "Delete User" option.
      i. It should redirect to user selection page.
      ii. Select the user to be deleted.
   C. The following things should happen:
      i. Only the "selected" user's account details should be deleted from the database, along with any tests they have taken. No other user or their details should be deleted or modified.

3. **Boundary Value:**
   A. Delete User 003, Delete User No Existing User, Severity 3
   B. Select the "Delete User" option.
      i. It should redirect to user selection page.
   C. The following things should happen:
      i. No user options should appear.

#5: Case: Add new Exam
1. **Functional:**
   A. Add New Exam Page 001, Add New Exam Successful, Severity 1
   B. Click the "Add New Exam" button.
      i. This should take you to the exam information page.
      ii. Enter the exam information with a unique chapter name and test name combination. Enter a valid number of questions and a valid time limit. Click submit.
      iii. It should redirect to the insert questions page.
      iv. Enter questions, options, and correct answers. Do not leave any fields empty.
   C. The following things should happen:
      i. Exam information should appear in database in the "form" table.
      ii. The exam information page should show an equivalent number of empty question fields for the number of questions selected.
      iii. Questions, options, and their correct answers should also appear in the database, in a table whose name will be the exam name.
      iv. It should refresh the page and show an empty exam information page.

2. **Equivalence Class:**
   A. Add New Exam Page 002, Unique chapter name and test name combination - successful, Severity 1
   B. Click the "Add New Exam" button.
      i. This should take you to the exam information page.
      ii. Enter the exam information with a unique chapter name and test name combination (if a chapter name and/or test name already exist but the

combination does not, it will still successfully create a new exam). Enter a natural number for number of questions and a valid time limit. Click submit.

iii. It should redirect to the insert questions page.

iv. Enter questions, options, and correct answers. Do not leave any fields empty.

C. The following things should happen:

i. Exam information should appear in database in the "form" table.

ii. The exam information page should show an equivalent number of empty question fields for the number of questions selected.

iii. Questions, options, and their correct answers should also appear in the database, in a table whose name will be the exam name.

iv. It should refresh the page and show an empty exam information page.

A. Add New Exam Page 003, Existing Chapter Name and Test Name Combination, Severity 2

B. Click the "Add New Exam" button.

i. This should take you to the exam information page.

ii. Enter an existing chapter name and test name combination. Do not leave any fields empty.

C. The following things should happen:

iv. No changes are made in the database.

v. It should show an error page saying that the chapter name and test name combination already exists.

vi. It should redirect to an empty exam information page after 2 seconds of the error page.

3. **Boundary Value:**

A. Add New Exam Page 004, Add New Exam Empty Fields, Severity 2

B. Click the "Add New Exam" button.

ix. This should take you to the user information page.

x. Enter user information, leaving the chapter and/or the test name blank.

C. The following things should happen:

xi. Exam information should *not* appear in the database.

xii. It will redirect to an error page.

xiii. After 2 seconds, it will redirect again to an empty exam information page.

A. Add New Exam Page 005, Add New Exam Invalid Number of Questions, Severity 2

B. Click the "Add New Exam" button.

ix. This should take you to the exam information page.

x. Enter exam information, leaving no field blank. Set the number of questions in the exam to a number less than or equal to 0 and/or a decimal number.

C. The following things should happen:

xi. Exam information should *not* appear in the database.

xii. It will redirect to an error page.

xiii. After 2 seconds, it will redirect again to an empty exam information page.

A. Add New Exam Page 006, Add New Exam Invalid Time Limit, Severity 2
B. Click the "Add New Exam" button.
   i. This should take you to the exam information page.
   ii. Enter user information, leaving no field blank. Set the time limit to anything but a natural number. (Natural number = whole number greater than or equal to 0)
C. The following things should happen:
   i. Exam information should *not* appear in the database.
   ii. It will redirect to an error page.
   iii. After 2 seconds, it will redirect again to an empty exam information page.

#6: Case: Clone an Exam

1. **Functional:**
   A. Clone Exam 001, Clone Exam, Severity 3
   B. Select the "Clone Exam" option.
      i. It should redirect to the select exam page.
      ii. Select the exam to be cloned.
      iii. It should redirect to the new exam page.
      iv. Enter a unique chapter and test name combination.
   C. The following things should happen:
      viii. A new test with the entered name is created in the database and inserted to the form table.
      ix. It should redirect to the select exam page.

2. **Equivalence Class:**
   A. Clone Exam 002, Unique Chapter Name and Test Name Combination - Successful, Severity 1
   B. Click the "Clone Exam" button.
      v. It should redirect to the select exam page.
      vi. Select the exam to be cloned.
      vii. It should redirect to the new exam page.
      viii. Enter an existing chapter name and test name combination.
   C. The following things should happen:
      i. A new test with the entered name is created in the database and is inserted to the form table.
      ii. It should redirect to the select exam page.

   A. Clone Exam 003, Existing Chapter Name and Test Name Combination, Severity 2
   B. Click the "Clone Exam" button.
      i. It should redirect to the select exam page.
      ii. Select the exam to be cloned.
      iii. It should redirect to the new exam page.

iv. Enter the exam information with a unique chapter name and test name combination (If a chapter name and/or test name already exist but the combination does not. It will still successfully create a new exam).
- C. The following things should happen:
    i. No changes in database.
    ii. It will redirect to an error page
    iii. It will redirect again to the select exam page.

3. **Boundary Value:**
   - A. Clone Exam 004, Clone Exam Empty Fields, Severity 2
   - B. Click the "Clone Exam" button.
      - xiv. It should redirect to the select exam page.
      - xv. Select the exam to be cloned.
      - xvi. It should redirect to the new exam page
      - xvii. Enter the exam information, leaving the chapter name and/or the test name empty.
   - C. The following things should happen:
      - xviii. Exam information should *not* appear in the database.
      - xix. It will redirect to an error page.
      - xx. After 2 seconds, it will redirect again to an empty exam information page.

#7: Case: Modify Existing Exam
   1. **Functional:**
      - A. Modify Exam 001, Modify Exam, Severity 1
      - B. Select the "Modify Exam" option. Select the exam to be modified then select the appropriate option and make the required changes.
      - C. The following things should happen:
         - i. The "modify options" page should show up.
         - ii. The selected options page should show up.
         - iii. The changes should be stored in the database.
         - iv. No other information pertaining to anything else should be affected by these changes.

   2. **Equivalence Class:**
      - A. Modify Exam 002, All Modifications, Severity 1
      - B. Select the "Modify Exam" option. Select the exam to be modified then make the appropriate modifications available without making any "mistakes" in any of them.
         - i. Change the test name.
         - ii. Modify existing questions.
         - iii. Change the number of questions.
         - iv. Delete specific questions.
         - v. Change the time limit.
      - C. The following things should happen:

       i.   The new name of the exam should be stored and every occurrence of it throughout the database should be changed.

      ii.   The new questions, options, and answer keys should be stored.

    iii.   The new number of questions should be stored and any modifications to the existing questions should also be stored.

    iv.   The questions to be deleted should not exist in the database.

     v.   The new time limit should be stored.

    vi.   No other information from other tests should have changed.

3. **Boundary Value:**
   A. Modify Exam 003, No Modifications, Severity 2
   B. Select the "Modify Exam" option. Select the exam to be modified then go back to the select exam page.
   C. The following things should happen:
      i. No changes should be made in the database.

   A. Modify Exam 004, All Modifications, Severity 1
   B. Select the "Modify Exam" option. Select the exam to be modified then make all of the modifications available without making any "mistakes" in any of them.
      vii. Change the test name.
      viii. Modify existing questions.
      ix. Change the number of questions.
      x. Delete specific questions.
      xi. Change the time limit
   C. The following things should happen:
      xii. The new name of the exam should be stored and every occurrence of it throughout the database should be changed.
      xiii. The new questions, options, and answer keys should be stored.
      xiv. The new number of questions should be stored and any modifications to the existing questions should also be stored.
      xv. The questions to be deleted should not be there in the database.
      xvi. The new time limit should be stored.
      xvii. No other information from other tests should have changed.

   A. Modify Exam 004, Some Modifications, Severity 1
   B. Select the "Modify Exam" option. Select the exam to be modified then make all of the modifications available by making "mistakes" in all of them.
      xviii. Change the test name.
         1. Leave the field for the new name blank or enter an existing name.
      xix. Modify existing questions.
         1. Leave the space for the questions, answers, and/or options blank.
      xx. Change the number of questions.
         1. Enter any value that is not a natural number.
      xxi. Change the time limit.
         1. Enter any value that is not a natural number.

C. The following things should happen:
    xxii. For incorrect exam name:
        1. The error page should show up and redirect to the "modify options" page after 2 seconds.
        2. No changes to the exam name should be made in the database.
    xxiii. For blank questions:
        1. The new questions page should keep refreshing until valid input is entered.
    xxiv. For incorrect number of questions:
        1. The page should refresh with blank fields.
        2. This will keep happening until correct input is entered.
    xxv. For changing the time limit:
        1. The page should refresh with blank fields.
        2. This will keep happening as long as correct input is entered.
    xxvi. No information from other tests should have changed.

#8: Case: Delete Exam
1. **Functional:**
    A. Delete Exam 001, Delete Exam, Severity 1
    B. Select the "Delete Exam" option. Select the exam to be deleted and click the delete button.
    C. All the exams will be displayed as a list of radio buttons. The selected exam should be deleted from the database and all entries relating to the selected exam should be deleted too.

2. **Equivalence Class:**
    A. Delete Exam 002, Delete Exam, Severity 1
    B. Select the "Delete Exam" option. Select the exam to be deleted and click the delete button.
    C. All the exams will be displayed as a list of radio buttons. The selected exam should be deleted from the database and all entries relating to the selected exam should be deleted too.

3. **Boundary Value:**
    A. Delete Exam 003, Delete Exam No Exam Selected, Severity 2
    B. Select the "Delete Exam" option. Click the delete button without selecting an exam.
    C. Nothing should happen.

#9: Case: Grade Free Response Questions
1. **Functional:**
    A. Grade Questions 001, Grade Questions, Severity 1

B. The user steps are as follows:
    i. Select the user whose exam is needed to be graded.
    ii. Select the test to be graded.
    iii. Give the grades for the exam.
C. The following thing should happen with each step:
    i. The names of the users should appear as a list of radio buttons.
    ii. The names of the completed tests will be displayed as a list of radio buttons.
    iii. The essay questions for the selected test, answer key for the questions, and the user's answers for those questions should appear.
    iv. There will be space to enter the grade of each of the questions, and the maximum grade for each question.
    v. The final scores for all the questions will be stored in the database and the final grades will be calculated and also stored in the database.
    vi. No changes should be made to the other entries in the corresponding or any other table in the database.

2. **Equivalence Class:**
    A. Grade Questions 002, Grade Questions, Severity 1
    B. The user steps are as follows:
        i. Select the user whose exam is needed to be graded.
        ii. Select the test to be graded.
        iii. Give the grades for the exam.
    C. The following thing should happen with each step:
        i. The names of the users should appear as a list of radio buttons.
        ii. The names of the completed tests will be displayed as a list of radio buttons.
        iii. The essay questions for the selected test, answer key for the questions, and the user's answers for those questions should appear.
        iv. There will be space to enter the grade of each of the questions, and the maximum grade for each question.
        v. If only some of the scores are entered, the page should refresh after storing the entered grades in the database so that the other questions can be graded too.
        vi. The final scores for all the questions will be stored in the database and the final grades will be calculated and also stored in the database.
        vii. No changes should be made to the other entries in the corresponding or any other table in the database.

3. **Boundary Case:**
    A. Grade Questions 003, All Questions Graded, Severity 1
    B. The user steps are as follows:
        i. Select the user whose exam is needed to be graded.

     ii.   Select the test to be graded.

     iii.   Give the grades for the exam.

C.   The following thing should happen with each step:

     i.   The names of the users should appear as a list of radio buttons.

     ii.   The names of the completed tests will be displayed as a list of radio buttons.

     iii.   The essay questions for the selected test, answer key for the questions, and the user's answers for those questions should appear.

     iv.   There will be space to enter the grade of each of the questions, and the maximum grade for each question.

     v.   The final scores for all the questions will be stored in the database and the final grades will be calculated and also stored in the database.

     vi.   No changes should be made to the other entries in the corresponding or any other table in the database.

A.   Grade Questions 004, Grade Questions No Questions Graded, Severity 1

B.   The user steps are as follows:

     vii.   Select the user whose exam is needed to be graded.

     viii. Select the test to be graded.

     ix.   Don't grade any of the questions and click submit.

C.   The following thing should happen with each step:

     x.   The names of the users should appear as a list of radio buttons.

     xi.   The names of the completed tests will be displayed as a list of radio buttons.

     xii.   The essay questions for the selected test, answer key for the questions, and the user's answers for those questions should appear.

     xiii. There will be space to enter the grade of each of the questions, and the maximum grade for each question.

     xiv. None of the scores should be stored in the database.

     xv.   No changes should be made to the other entries in the corresponding or any other table in the database.

#10: Case: Review Test Scores

1. **Functional:**

   A.   Review Score 001, Review Score, Severity 1

   B.   Select the "Review Client Performances" option.

   C.   All the client names, tests the client has taken, and their grades are displayed in a table.

2. **Equivalence Class:**

   D.   Review Score 002, Review Score, Severity 1

   E.   Select the "Review Client Performances" option.

F. All the client names, tests the client has taken and their grades are displayed in a table.

3. **Boundary Value:**
   A. Review Score 003, Review Score No Existing Scores, Severity 3
   B. Select the "Review Client Performances" option when there are no tests and/or grades.
   C. It should display an empty table with just the column headers.

#11: Case: Review Answers

4. **Functional:**
   A. Review Answers 001, Review Answers, Severity 2
   B. The user steps are as follows:
      i. Select "Review Client Answers".
      ii. Select the user.
      iii. Select the exam.
      iv. Click "ok".
   C. All the questions, all the selected options, all the correct options, and the user's answers are displayed.

5. **Equivalence Class:**
   A. Review Answers 002, Review Answers, Severity 2
   B. The user steps are as follows:
      i. Select "Review client answers"
      ii. Select the user.
      iii. Select the exam.
      iv. Click "ok".
   C. All the questions, all the selected options, all the correct options and the user's answers are displayed.

6. **Boundary Value:**
   A. Review Answers 003, Review Answers No Existing Answers, Severity 3
   B. The user steps are as follows:
      i. Select "Review Client Answers".
   C. It should not show any user or exam options to select.

#12: Case: Test Statistics

7. **Functional:**
   A. Test Statistics 001, Test Statistics, Severity 2
   B. Select the "Test Statistics" option. Select one of the tests that are displayed and click "ok".
   C. Pictographic representation of all statistics is displayed.

8. **Equivalence Class:**
   A. Test Statistics 002, Test Statistics, Severity 2
   B. Select the "Test Statistics" option. Select one of the tests that are displayed and click "ok".
   C. Pictographic representation of all statistics is displayed.

1. **Boundary Value:**
   A. Test Statistics 003, Test Statistics No Existing Stats, Severity 3
   B. Select the "Test Statistics" option.
   C. No test options should be displayed.

#13: Case: Take a test

9. **Functional:**
   A. Take Test 001, Take Test, Severity 1
   B. The user steps are as follows:
      i. Select the "Take Test" option.
      ii. Select chapter.
      iii. Click "OK".
      iv. User enters responses to the questions.
      v. User clicks "submit" if they finish the test before the time runs out. The test ends automatically when the time runs out.
      vi. Click "OK".
   C. The following things should happen:
      i. The responses are stored in the database.
      ii. The multiple-choice questions are graded.
      iii. The grades for the multiple-choice questions are displayed.

10. **Equivalence Class:**
    A. Take Test 002, Take Test, Severity 1
    B. The user steps are as follows:
       i. Select the "Take Test" option.
       ii. Select the chapter you want to take the test for.
       iii. Click "OK".
       iv. User enters responses to the questions.
       v. User clicks "submit" if he finishes the test before the time runs out. The test ends automatically when the time runs out.
       vi. Click "OK".
    C. The following things should happen:
       i. The responses are stored in the database.
       ii. The multiple-choice questions are graded.
       iii. The grades for the multiple-choice questions are displayed.

2. **Boundary Value:**
   A. Take Test 003, Take Test No Existing Test, Severity 3
   B. The user steps are as follows:
      i. Select the "Take Test" option.
   C. The following things should happen.
      i. No chapter options should appear.

#14: Case: Review Test

11. **Functional:**
    A. Review Test 001, Review Test, Severity 2
    B. The user steps are as follows:
       i. Select the "Review Test" option.
       ii. Select the test you want to review.
       iii. Click "OK".
    C. The final test score, all the questions, the answers, the user selected/entered answers and the answer key are displayed.
12. **Equivalence Class:**
    A. Review Test 002, Review Test, Severity 2
    B. The user steps are as follows:
       i. Select the "Review Test" option.
       ii. Select the test you want to review.
       iii. Click "OK".
    C. The final test score, all the questions, the answers, the user selected/entered answers and the answer key are displayed.

3. **Boundary Value:**
   A. Review Test 003, Review Test No Existing Test, Severity 3
   B. The user steps are as follows:
      i. Select the "Review Test" option.
   C. No test options should appear.