



MULTIPLE-CHOICE TEST MANAGEMENT APPLICATION

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Version 1.2

PROG 6212 – POE

Multiple Choice Test Management Application

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VARSITY COLLEGE WESTVILLE 18/11/19

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Help Files

User Instructions

*****APPLICATION RUN INSTRUCTIONS*****

1. To run the application use the project folder "MultipleChoiceTestManagementApp".
2. Extract the "18002054 PROG6212 POE" to the desktop and run the application through the extracted folder.
3. The data access layer DLL resides in a separate project in this folder so do not remove either project from this folder when running the app.
4. The database can be found in the debug folder in the base app as a DB file called TestApplicationDb.db

*****LOG IN INSTRUCTIONS*****

7. You can sign in as a student with the following details or register a new student user -

Username : 18002054

Password : 12345

8. You can sign in as a lecturer with the following details or register a new lecturer user -

Username: 40001000

Password: 12345

Demo Video

9. A demonstration video has been provided in case of any issues (voice over narration is provided)- "18002054 POE Task 2 Demo Video".

[Stand Alone Docs¥18002054 POE Task 2 Demo Video.mp4](#)

User Manual – University Test Management Application

This step by step user manual is designed to assist the user when using the application. This will ensure a user can get to work using the applications functionality fast.

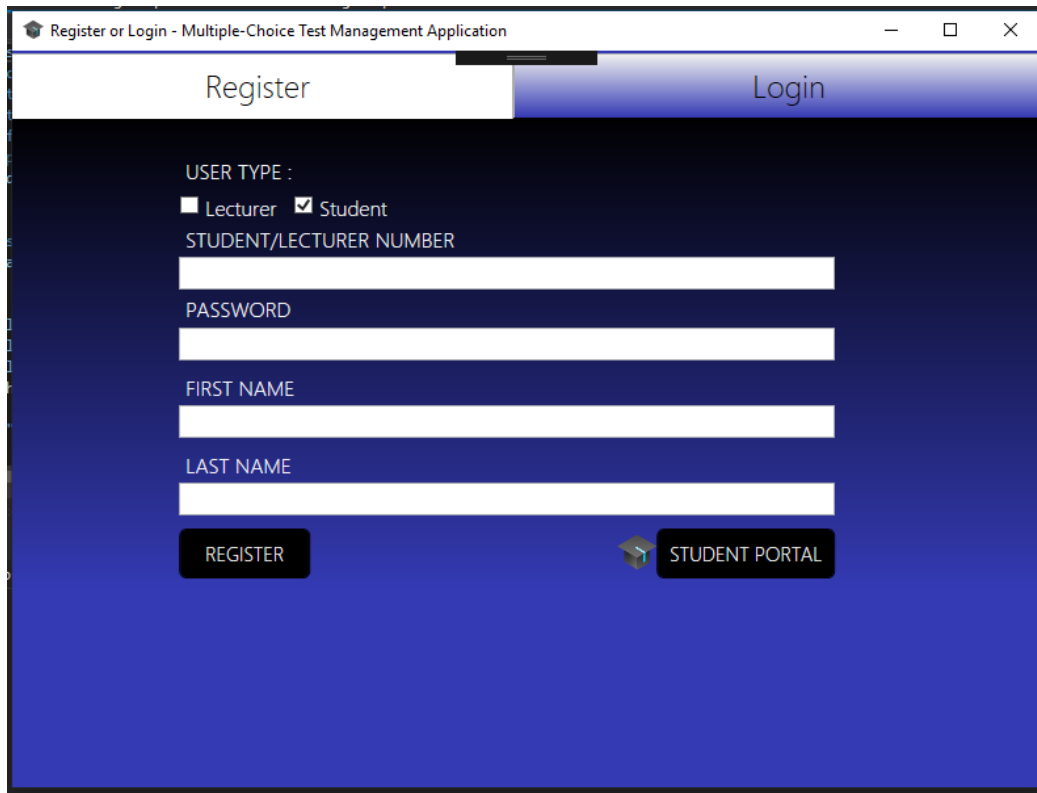
SPLASHS SCREEN



When a user first runs the application, they are presented with a splash screen that introduces the title of the application, the developer name, development year and current build version of the application.

LOGIN OR REGISTER SCREEN

REGISTER STUDENT/LECTURER



The screenshot shows a web application window titled "Register or Login - Multiple-Choice Test Management Application". The window has two tabs: "Register" (active) and "Login". The "Register" tab contains the following form elements:

- USER TYPE :** Two radio buttons are present: "Lecturer" (unchecked) and "Student" (checked).
- STUDENT/LECTURER NUMBER**: A text input field.
- PASSWORD**: A text input field.
- FIRST NAME**: A text input field.
- LAST NAME**: A text input field.
- REGISTER**: A button.
- STUDENT PORTAL**: A button with a small icon of a building.

After the splash screen the user is met with a **registration screen**. This allows the user to **register an account** with the system as either a **student** or a **lecturer** depending on their role at the university.

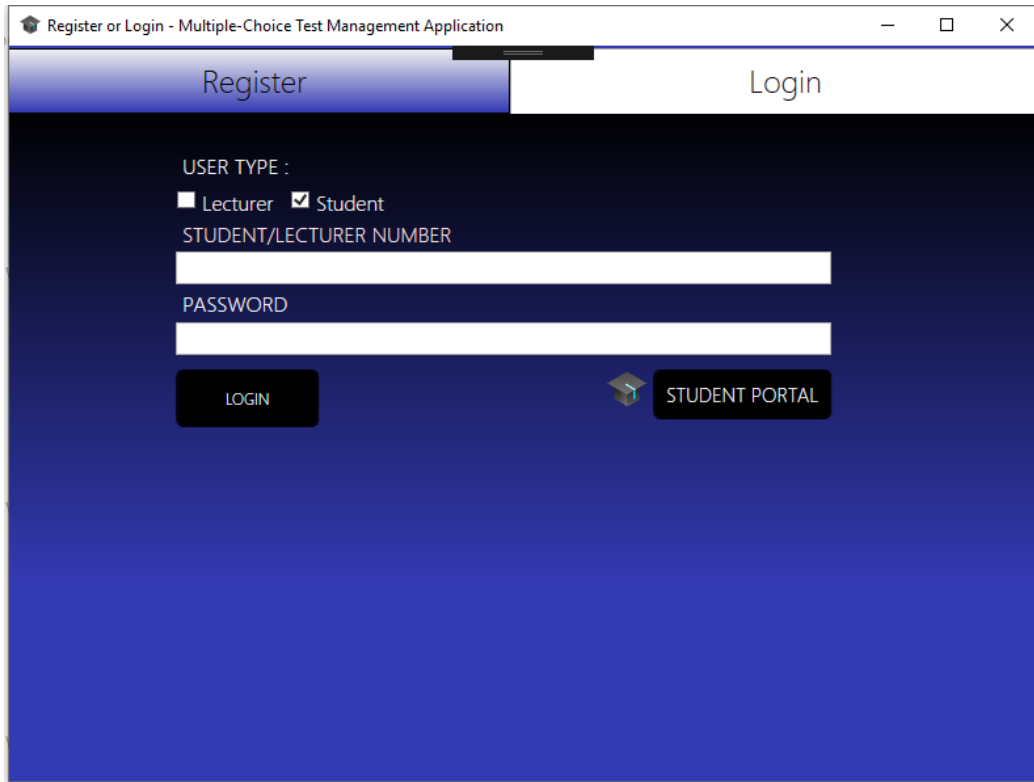
The **student checkbox** is checked by default as student users will be using the system more regularly than lecturer users.

The user is required to **check** either the **Lecturer** or **Student checkbox** based on their role and then fill in the following fields and click the **register button** in order to complete registration:

- **Lecturer Number/Student number field**
 - this input must be the users assigned lecturer/Student ID number. An error will be thrown if they do not provide a number.
 - This field is also limited to 8 digits (Hypothetical ID limit of the university the application is being used at). The user will use the value they input in this field to log in later.
- **Password field**
 - A user must supply a password for their application account. This can either be a combination of numbers and letters, or just numbers or letters.
 - The user is required to enter a password longer than 5 characters and is limited to 50 characters.
 - First Name/Last Name fields – User is required to fill in their first name and surname for the purpose of easy identification during lecturer class list viewing.

If the **username already exists** within the application database, the application will display an **error message** stating that the user already exists and that they need to provide a **different** ID number. If registration is successful, a pop up will be displayed stating the login was successful. After the user clicks okay to clear the message, they will then be directed to the **Login tab**.

LOGIN STUDENT/LECTURER



Register or Login - Multiple-Choice Test Management Application

Register Login


USER TYPE :

☐ Lecturer ☒ Student

STUDENT/LECTURER NUMBER

PASSWORD

LOGIN

 STUDENT PORTAL

The login screen allows a lecturer or student user to login to the account they created during registration.

The user must perform the following steps to complete a successful login

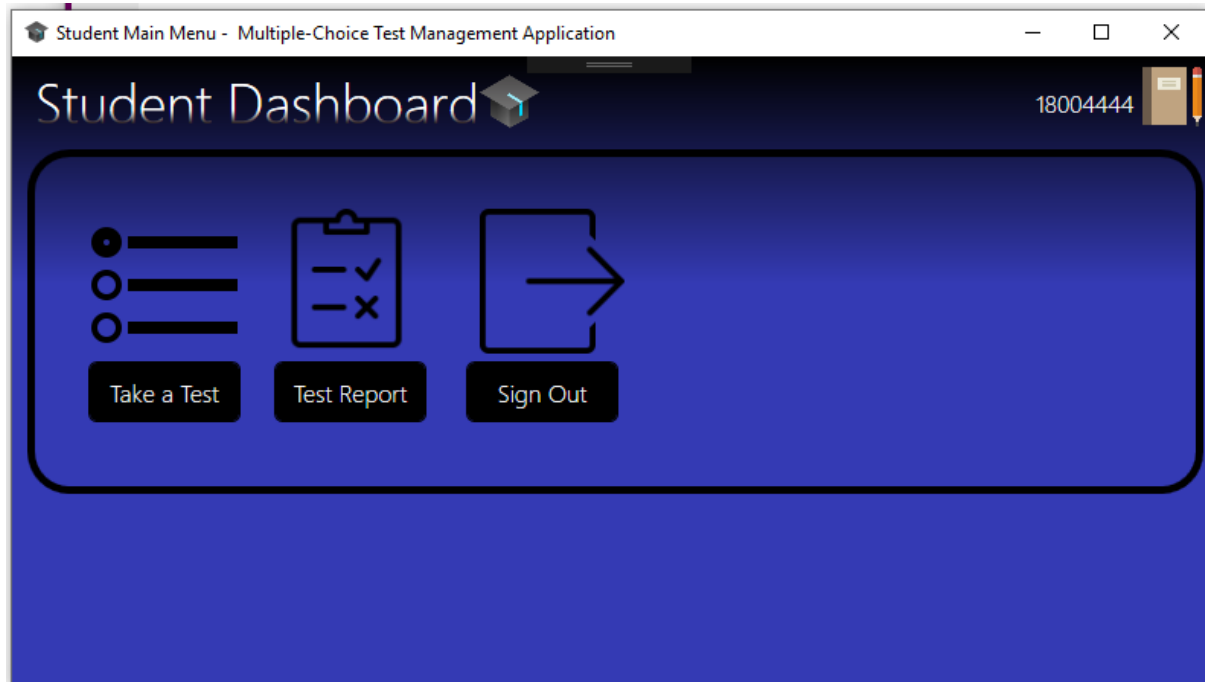
1. First, the user should click on the check box that represents their role at the university – **student check box** if they are a student or **lecturer check box** if they are a lecturer.
2. The user should fill in the student or lecturer ID number they registered with in the text field under the “STUDENT/LECTURER NUMBER” label.
3. The user should fill in the password they registered in the text field under the “PASSWORD” label.
4. Once the check box, and fields are filled, the user can click the “LOGIN” button.

5. If all credentials provided are valid then a dialog box will display letting the user know that the login was a success. If a username or password was not spelled correctly, an error dialog will be displayed until the credentials provided by the user are valid when clicking the “Login” button.
6. After Login success the user will be directed to their relevant main menu - The student dashboard or lecturer dashboard.

ACCESS THE STUDENT PORTAL(Web Application)

A student user can access the student online portal web application by clicking the “STUDENT PORTAL” button by the logo.

STUDENT DASHBOARD SCREEN



The student dashboard is what is displayed to a student user once they log in. This screen is the navigation hub of the application for the student user. Here a user has the following choice of functionality by clicking any three of the buttons shown in the above application image.

- **Take a Test Button** – This allows the student user to perform multiple-choice tests set by a lecturer and view their result and the memorandum on test completion. This button will be disabled if all tests have been completed.
- **Test Report Button** – This allows a student user to view their system test result history and which system tests they have not completed.
- **Sign Out Button** – This allows the student user to sign out of their account which will return them to the login screen.

TAKE A TEST SCREEN

Take a Test - Multiple-Choice Test Management Application

Main Menu TEST NAME --Please Select-- Begin Test Submit Test

Please choose a test

QUESTION 1

ANSWER OPTIONS

A

B

C

D

YOUR ANSWER

--Please Select--

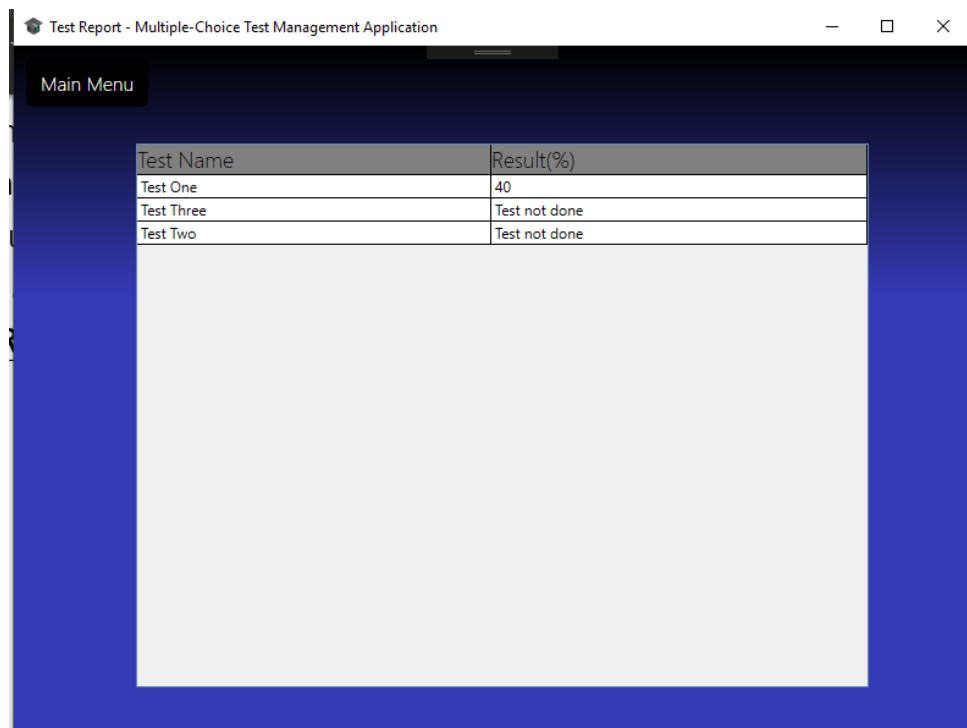
Previous Next

To successfully take a multiple-choice test set by a lecturer a student user should perform the actions described below in the order they are presented here:

1. **Select a Test** - The first step is to select a test to do from the drop-down menu next to the TEST NAME label at the top of the screen. As tests are completed by the user the list will decrease until there are no more tests to perform. Once selected, the user must click the “Begin Test” Button to finalise their selection. The app will proceed to display the first question of the chosen test to the user.
2. **Pick an Answer** - The first question will be displayed under the question number label. The possible answers are displayed under the Answer Options label. To answer the question the user must choose the letter that corresponds with their answer choice from the drop-down menu under the label Your Answer.
3. **Proceed to the Next Question** - Once an answer has been selected from the drop-down menu the user can then click the next button to proceed to the next question.
4. **Repeat to Complete** - Steps 2 and 3 should be repeated till the next button is disabled and the question number matches the question total.

- 5. Reviewing and Editing Answers** – Before clicking the submit test button the user can use the previous and next buttons to navigate through their answers to double check them for any mistakes. If a mistake is found it can be changed through selecting the drop-down menu again under the label Your Answer.
- 6. Submit Test** – Once the student is happy with their answers, they can click the submit test button to submit the test.
- 7. View Memorandum** – After the user submits the test, a memorandum and the test result are displayed to the user. Below the Answer Options the user can view their answer in comparison to the correct answer. If the answer and the chosen answer both display in green, then it means the user answered the question right. If the users answer is displayed in red, then they got that question wrong. The memo can be navigated using the next and previous buttons. Under the answer comparison the user can view their test result.
- 8. To Main Menu** – Once the user is done viewing the memorandum, they can then click the main menu button to return them to the main menu. To do another test the user can click on the Take a Test button once again on the Student Dashboard.

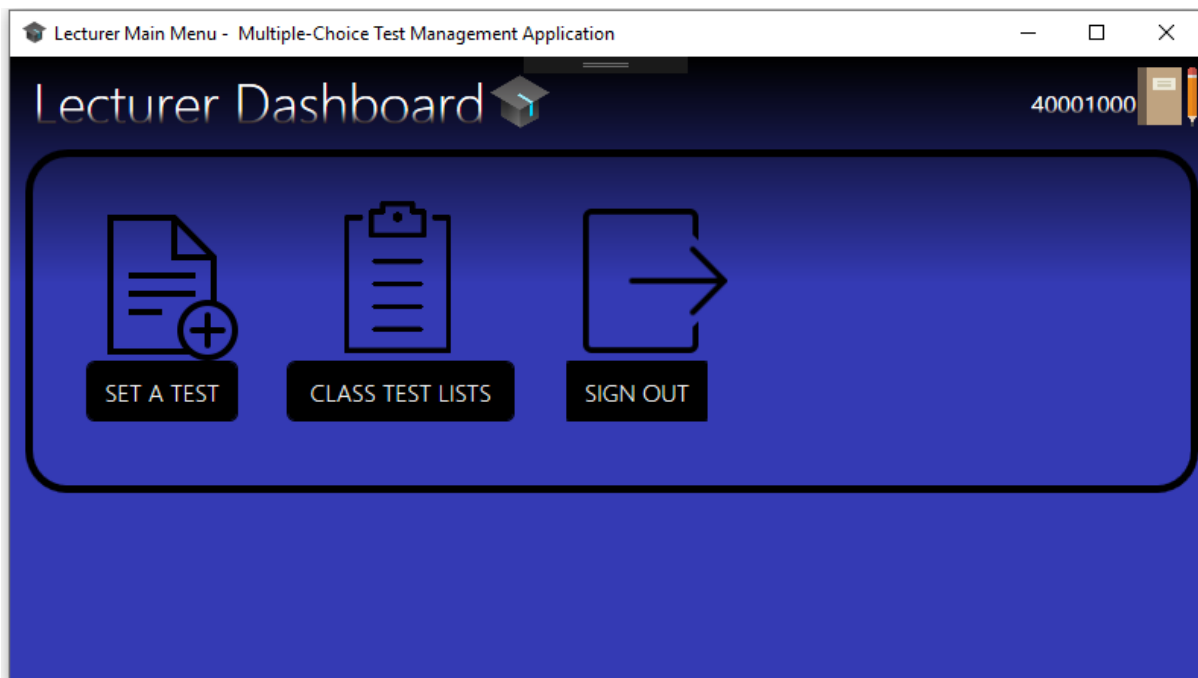
TEST REPORT SCREEN



Test Name	Result(%)
Test One	40
Test Three	Test not done
Test Two	Test not done

This screen allows the user to **view their results** for all current tests within the system in a **grid view**. The **Result** column will display “**Test not done**” next to the **Test name** in that row for every incomplete test. Once the user is finished viewing their results, the **main menu button** can be clicked to return to the main menu.

LECTURER DASHBOARD SCREEN



The Lecturer dashboard is what is displayed to a student user once they log in. This screen is the navigation hub of the application for the lecturer user. Here a user has the following choice of functionality by clicking any three of the buttons shown in the above application image.

- **Set a Test Button** - Allows a lecturer user to set a new multiple-choice test for a student user to take. The lecturer can set as many questions as they desire. Answers options are limited to 4.
- **Class Test Lists Button** - Allows a lecturer user to select a test out of a list of tests that have been set. The lecturer user can view which student users have completed the test selected as well as their results.
- **Sign Out Button** – This allows the lecturer user to sign out of their account which will return them to the login screen.

SET A TEST SCREEN

To successfully create a multiple-choice test for student users to do, the following steps will need to be taken by the lecturer user and performed in the order they appear here:

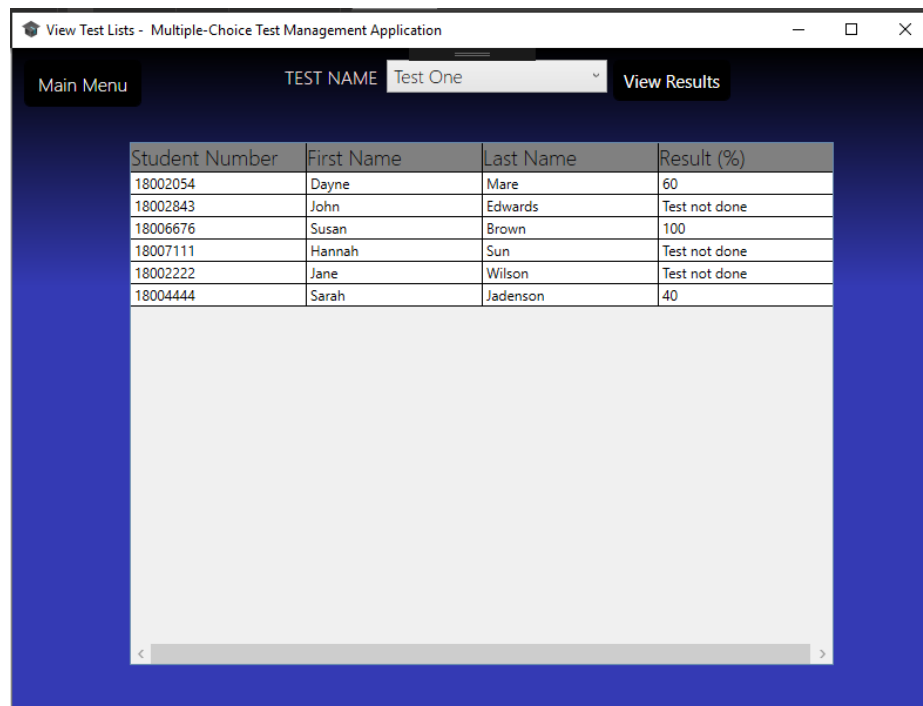
1. **Set Test Name** – The first step for the user is to input a name for the test. The field under the Test Name label should be filled in and the Set Button clicked to set the name for the new multiple-choice test.
2. **Fill in Q&A** – the following should be done to complete this step:
 - a. The field under the question number label is where the user needs to provide the question and should be filled in.
 - b. The 4 text fields on the right side of the screen is where the user needs to fill in the possible answers.
 - c. Finally, the correct answer for the question should be selected from the drop-down menu.
3. **Saving the Question** – Once all the fields specified in step three have been completed, the Save Question button should be clicked to save the new question.

4. **Add new Question or Submit Test** – Once the user saves a question, they can either choose to add a new question via the Add New Question button or submit all previously saved questions which will comprise the new test.
5. **Repeat till Complete** – The user can repeat Steps 2, 3 and add a new question till the user feels the test is complete.
6. **Editing Questions** – Once the lecturer user has added all their desired questions, they can then use the Previous and Next Buttons to navigate through the questions added to the test to perform any final edits. The lecturer user should click the Save Question button before clicking next or previous buttons to ensure updates to questions are saved.
7. **Submit the Test** – Once the lecturer user is happy with the test they have created they can then click the Submit Test button to save the new test. Once saved the user will be directed back to the Lecturer Dashboard Screen.

Other Functions

- **Clear All Button** – Empties all text fields
- **Main Menu Button** – directs the user back to the Lecturer Dashboard Screen.

CLASS TEST LISTS SCREEN

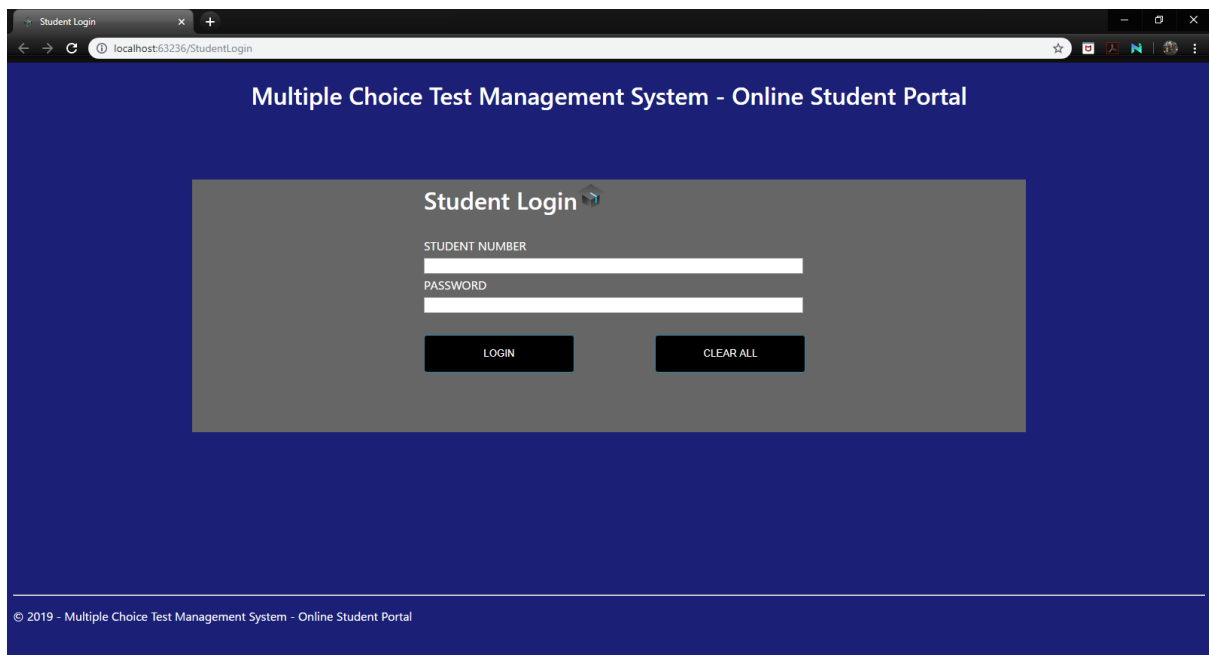


Student Number	First Name	Last Name	Result (%)
18002054	Dayne	Mare	60
18002843	John	Edwards	Test not done
18006676	Susan	Brown	100
18007111	Hannah	Sun	Test not done
18002222	Jane	Wilson	Test not done
18004444	Sarah	Jadenson	40

This screen allows the lecturer user to view class lists of students based on a test. The class list shows the results for each student and shows students who have not completed tests yet. To view a class list for a test the user must first select a test name from the drop-down menu and then click the View Results button. This will then display the desired class list of the test chosen in the grid view. When the user is finished viewing the desired class test list, they can return to the main menu by clicking the Main Menu button.

Online Student Portal (Web App)

STUDENT LOGIN SCREEN



Multiple Choice Test Management System - Online Student Portal

Student Login

STUDENT NUMBER

PASSWORD

LOGIN CLEAR ALL

© 2019 - Multiple Choice Test Management System - Online Student Portal

The student user can use the Student Portal button present in the Login or Register Screen Online Student Portals Student Login Screen.

The Student login web app page allows a student user to login to their account online.

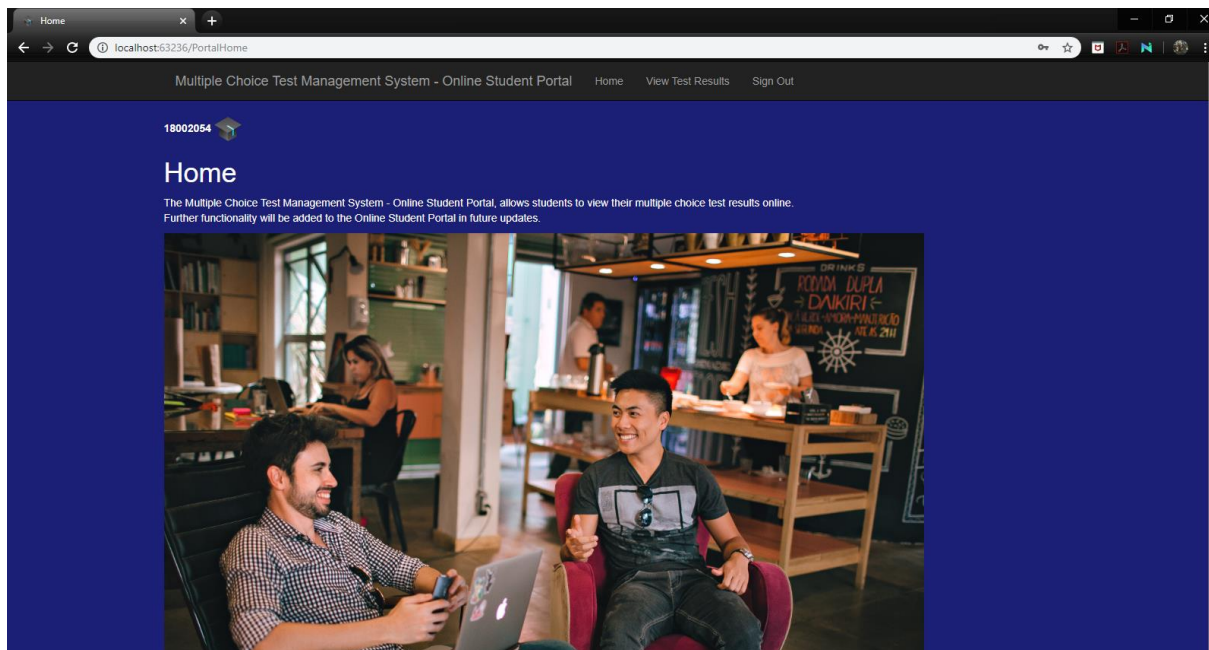
The student user must perform the following steps to complete a successful login to the web app.

1. First, the student user should fill in the student number they registered with in the text field under the “STUDENT NUMBER” label.
2. The user should fill in the password they registered in the text field under the “PASSWORD” label.
3. The user can then click the “LOGIN” button.

Other Functions

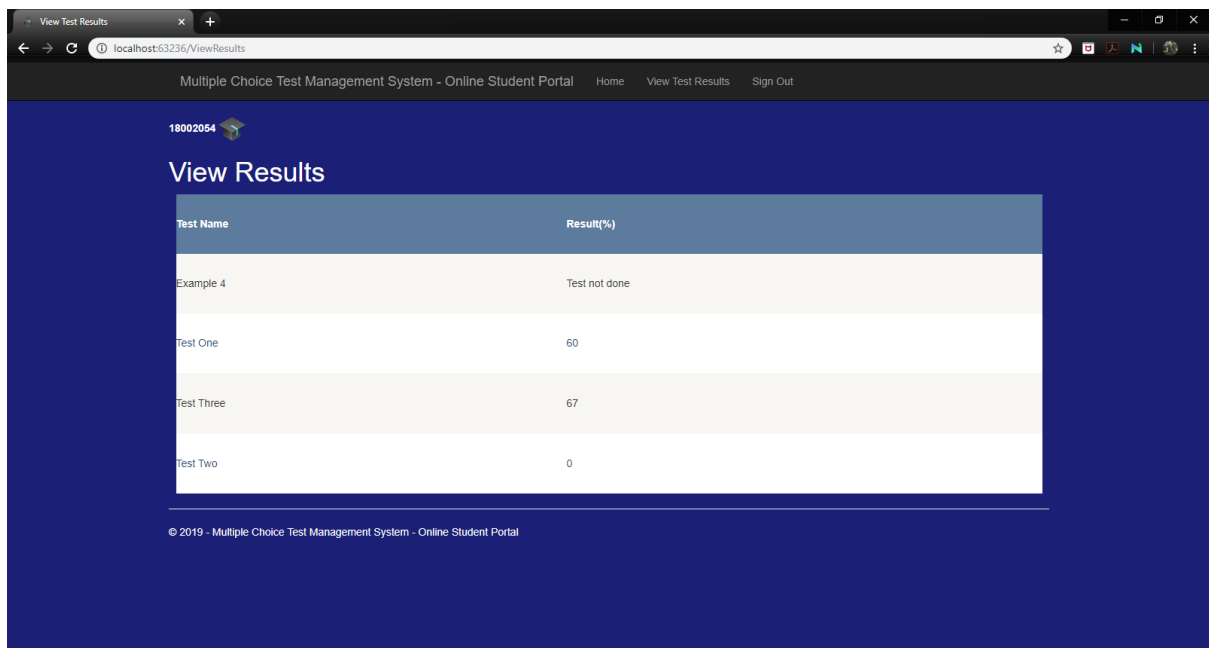
- **Clear All Button** – Empties all text fields

PORTAL HOME SCREEN



The Student Online Portal Home gives the user a brief description of the web app. The user can use the navbar at the top of the screen to navigate to either sign out or view their test results online.

VIEW TEST RESULTS SCREEN



Test Name	Result(%)
Example 4	Test not done
Test One	60
Test Three	67
Test Two	0

The user can view their past test results and tests they have not done online using the View Test Results tab which displays these results in a grid view.

Application Task Specifications

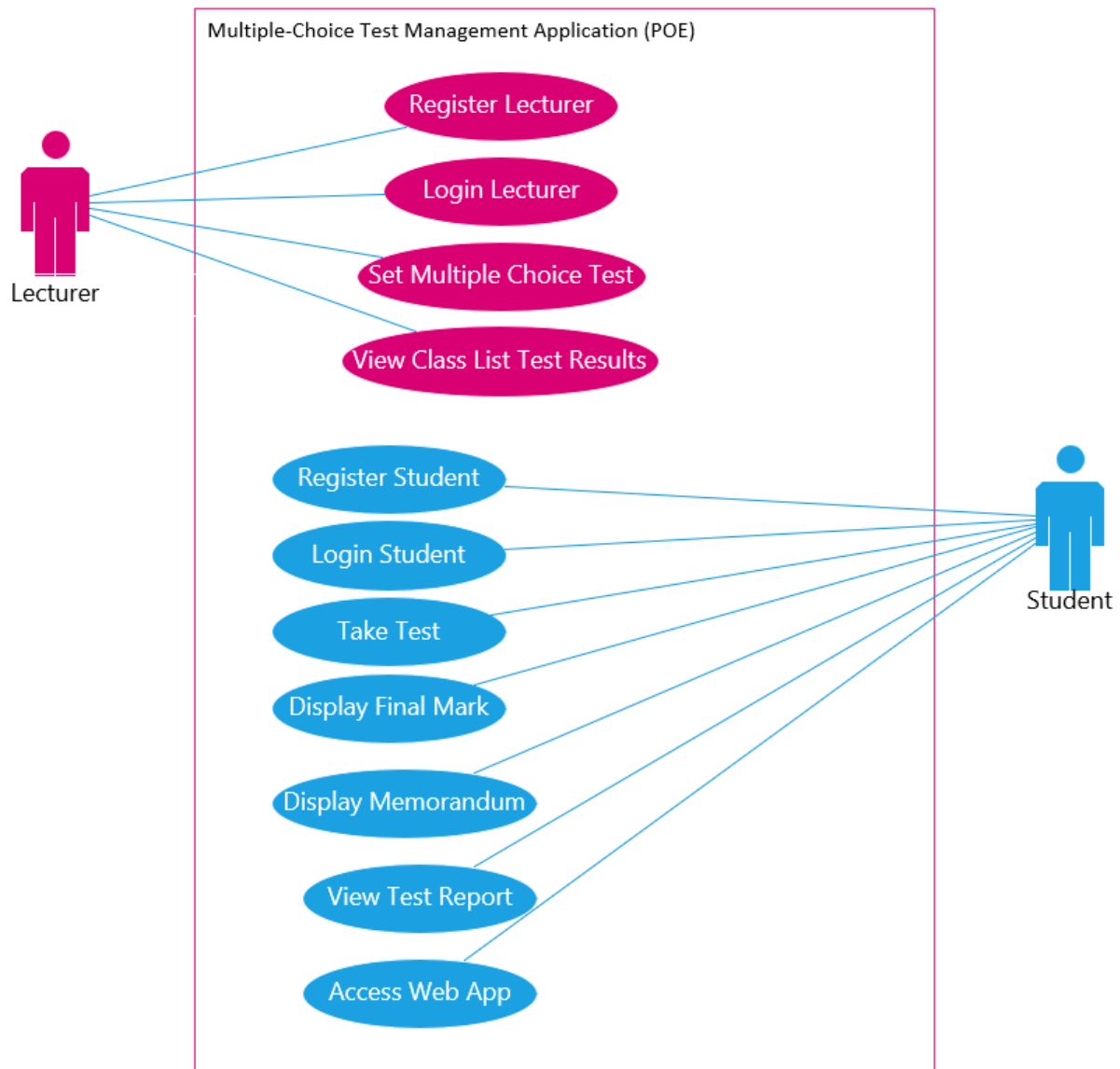
Multiple Choice Test Management Application	
Task	Brief Description
Register Lecturer	A lecturer user provides their assigned university lecturer number, a unique password, their first name, and last name to register a new lecturer account with the system.
Register Student	A student user provides their assigned university student number, a unique password, their first name, and last name to register a new student account with the system.
Login Lecturer	A lecturer user provides the password and lecturer number they registered with the system to access their unique system account.
Login Student	A student user provides the password and lecturer number they registered with the system to access their unique system account.
Access Student Portal Web App	The Student Portal Web Application can be accessed through a button click.
Take a Test (Student User)	Allows a student user to select and take a multiple-choice test set by a lecturer user. A memorandum is displayed to the student user on completion of the test.
Test Report (Student User)	Allows a student user to view their system test result history and which system tests they have not completed.

Sign Out (Student User)	Allows a student user to sign out of their account and returns them to the login/register window.
Set a Test (Lecturer User)	Allows a lecturer user to set a new multiple-choice test for a student user to take. The lecturer can set as many questions as they desire. Answers options are limited to 4.
View Class Test List (Lecturer User)	Allows a lecturer user to select a test out of a list of tests that have been set. The lecturer user can view which student users have completed the test selected as well as their results.
Sign Out (Lecturer User)	Allows a lecturer user to sign out of their account and returns them to the login/register window.
Multiple Choice Test Management Application	
Student Login	Allows a student registered with the Multiple-Choice Test Application to login to their account.
Home Page	Briefly describes what the web application does.
View Test Results Page	Allows a student user to view their Multiple-Choice Test Application test results and notifies them which tests they have not completed.
Sign Out	Allows the student user to sign out of the web application.

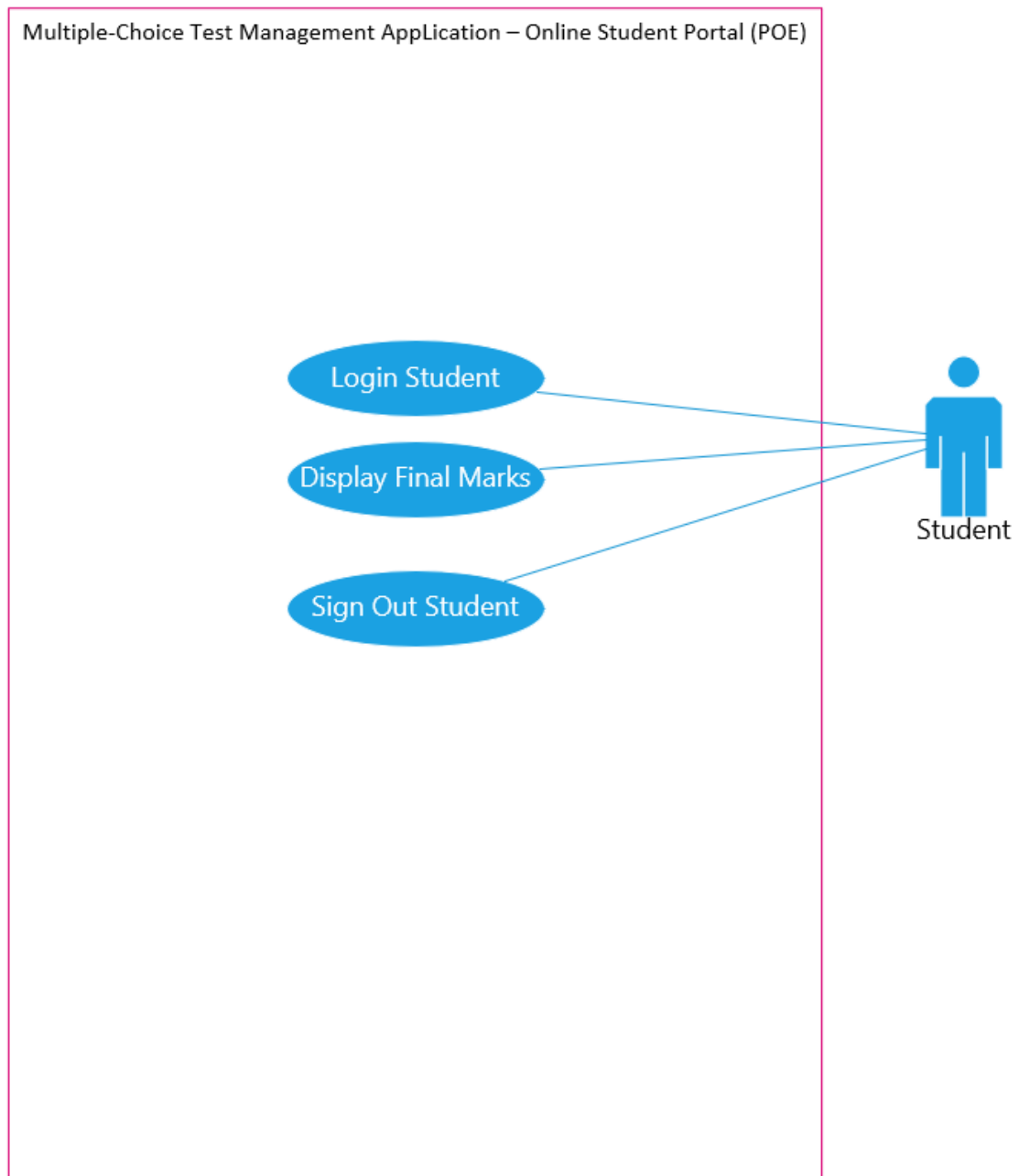
Design Documentation Diagrams

UML Use Case Diagrams

Multiple Choice Test Management Application:

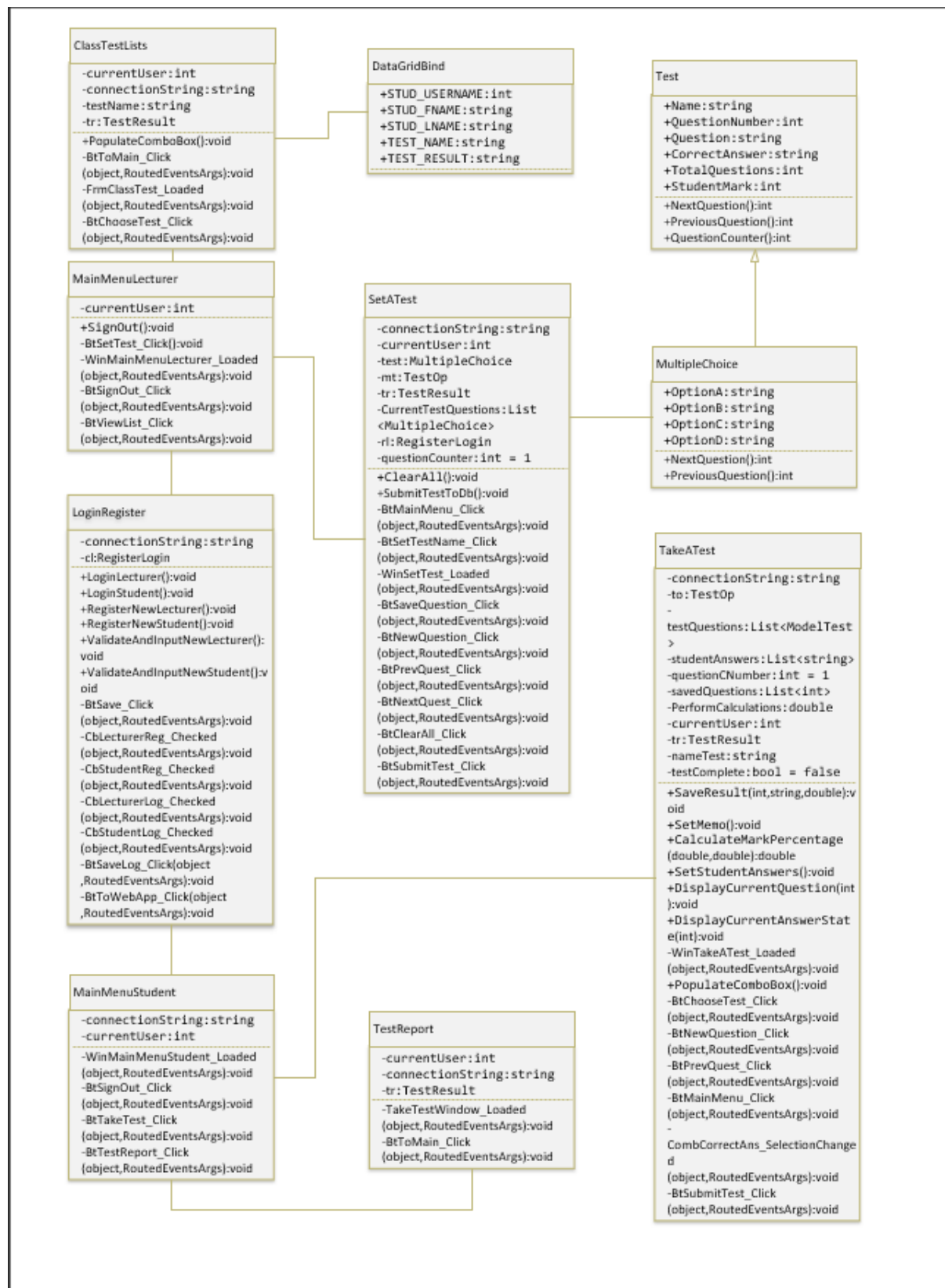


Multiple Choice Test Management Application – Online Student Portal:



UML Class Diagrams

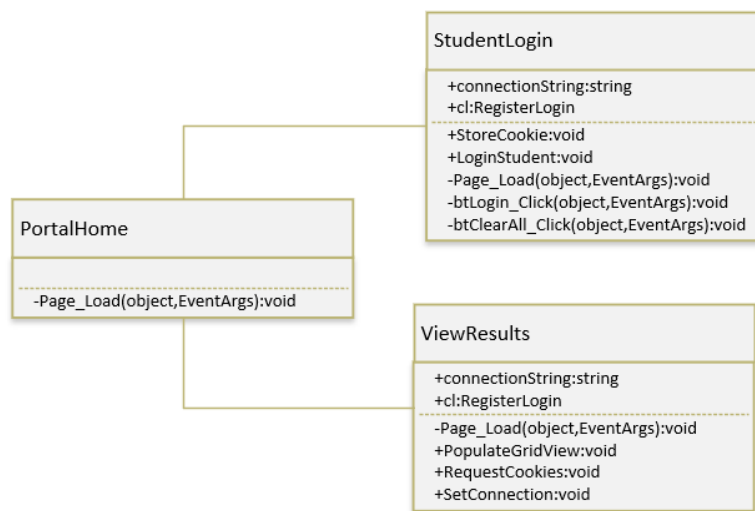
Multiple Choice Test Management Application:



Data Access Layer:



Multiple Choice Test Management Application – Online Student Portal (web app)



Improvements

- Fixed a bug where the application crashed due to clicking the next button when the test only had 1 question. The next button was always enabled on page load and did not consider tests of 1 question in length. **Fix:** Coded a check to see if the test is not equal to 1 question. If not equal to 1 then the next button is enabled else, it remains disabled and the submit button is activated.
- Completed the unfinished documentation from Task 2