

Library Decimal Application

PROG7312

JORDAN MOLEFE 19330106

Overview

The aim when developing this documents was to provide users with guidance and insight on Library Decimal Application developed for the local library.

The application was built using C# and developed in the Visual Studio framework making use of WPF forms. The application can be run using Visual Studio 2017 or 2019. User data will be stored in the local SQL lite database using a Data Access Layer.

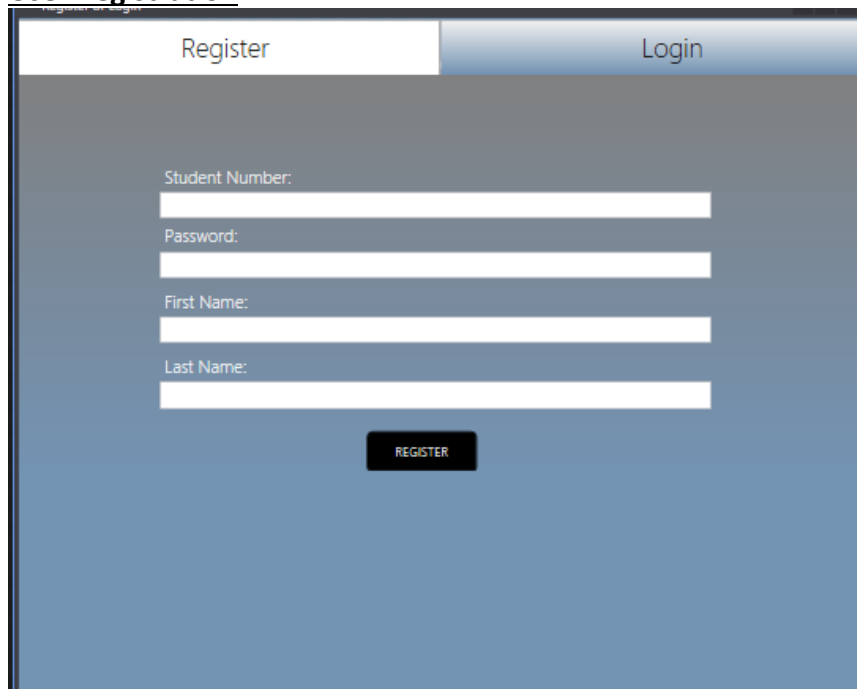
The main aim of the system is training students/library members on how to use the system while also making it a fun and engaging experience. Gamification features had to be incorporated into the system to make this possible. The training will carried out by the application as follows.

The application will provide training and do the following:

- **Student/Member Registration**
- **Student/Member Sign In**
- **Game – Replacing books**
- **Game – Identifying Areas**
- **Game – Finding Call Numbers**
- **Game – X – O (Ticktacktoe)**
- **Leader boards**
- **Sign Out**

User Manual

User Registration

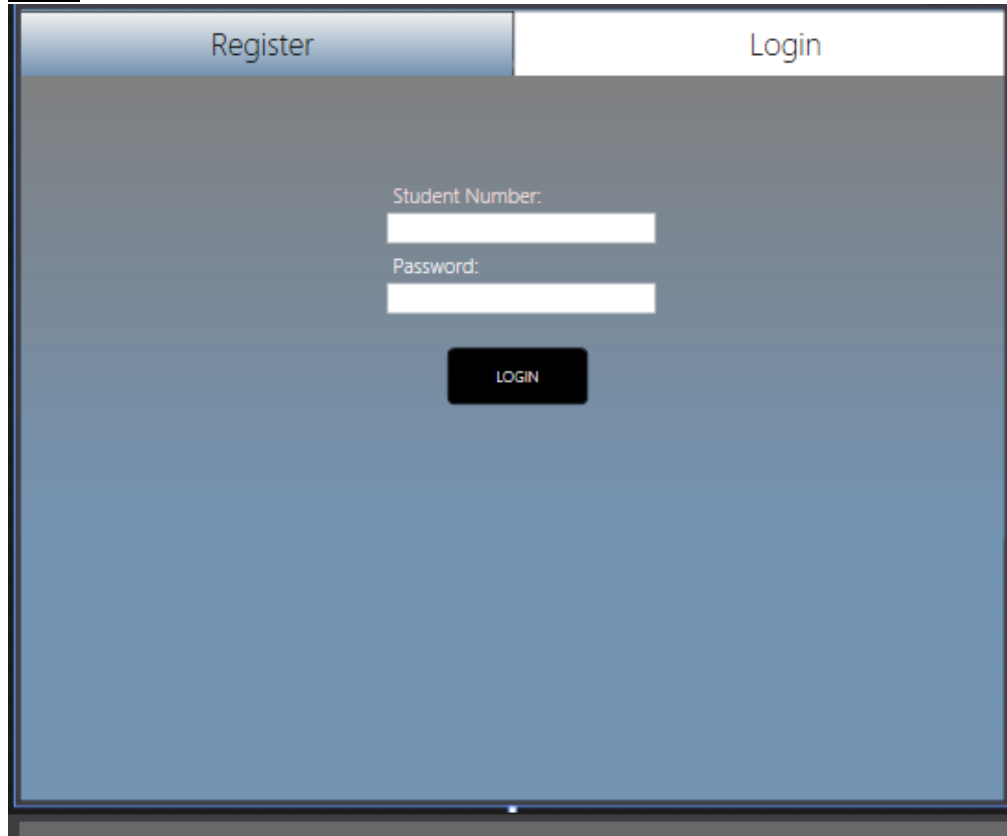


The screenshot shows a WPF window titled 'Register' and 'Login'. The 'Register' tab is active. The form contains four text input fields labeled 'Student Number:', 'Password:', 'First Name:', and 'Last Name:'. Below the fields is a black button with the text 'REGISTER' in white capital letters.

All Member/Student will be required to create an account with the application to track their learning and game progress.

Filling in all the field will be required from the user in order to create and an account successfully these include an 8-digit library card ID number (must be a number), a password to use to access the account (don't forget your password, max length is 50 characters), their first name(max length is 50 characters), and finally their last name (max length is 50 characters).Once all these fields have been filled the user can then click the REGISTER button to complete registration.

Login

The image shows a login form interface. At the top, there are two tabs: 'Register' and 'Login'. The 'Login' tab is currently selected. Below the tabs, the form has a light blue background. It contains two input fields: 'Student Number:' and 'Password:'. Below these fields is a black button with the text 'LOGIN' in white capital letters.

In order to gain access to the full functionality of the application the user will be required to enter the student card ID number and password given that they have registered their account. Once these fields have been filled correctly the user can click the LOGIN button and should now be presented the Main menu page.

Main Menu

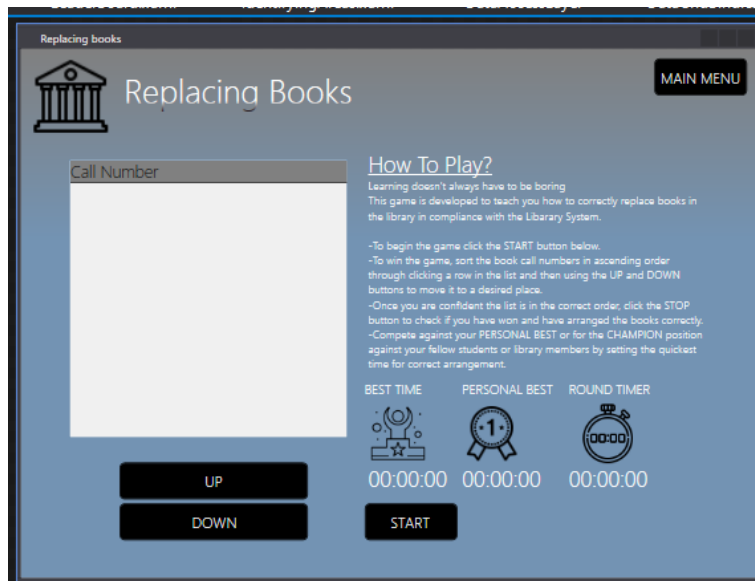


The main menu allows is the central navigation hub for the functionality of the application. Here the user has access to the following features :

- Replacing Books - a game mode that trains the user on how to replace books correctly on the library shelf in compliance with the DDC.
- Identifying Areas - a game mode that trains the user to memorize top level DDC categories and their corresponding call numbers.
- Finding Call Numbers - a game mode that trains the user to find their way around the hierarchy to find a specific book topic).
- Game - a game mode that the user can play X and O on either as one player or a 2 player.
- Leader boards – Allows the user to view the leader boards for each game mode to see how well they are doing in comparison to their fellow library members.
- Sign Out – When the user is finished using the application they can sign out of their account with this feature.

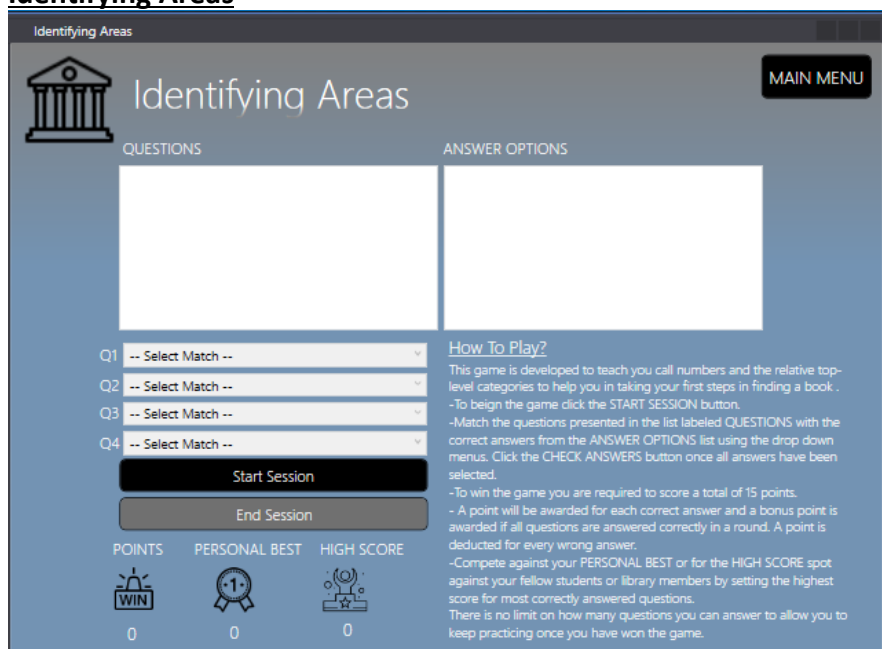
To use anyone of the listed features the user is required to click the button with the feature name on it.

Replacing Books



This feature is designed to teach the user how to correctly replace books in the library in compliance with the Library Decimal System. To start the game the user must press the START button. To win the game, the user must sort the book call numbers in ascending order through clicking a row in the list and then using the UP and DOWN buttons to move it to a desired index in the list. Once the user feels the list is in the correct order, they can click the STOP button to check if they have won. The user can compete against their PERSONAL BEST or for the CHAMPION position against their fellow library members by setting the quickest time for correct ordering.

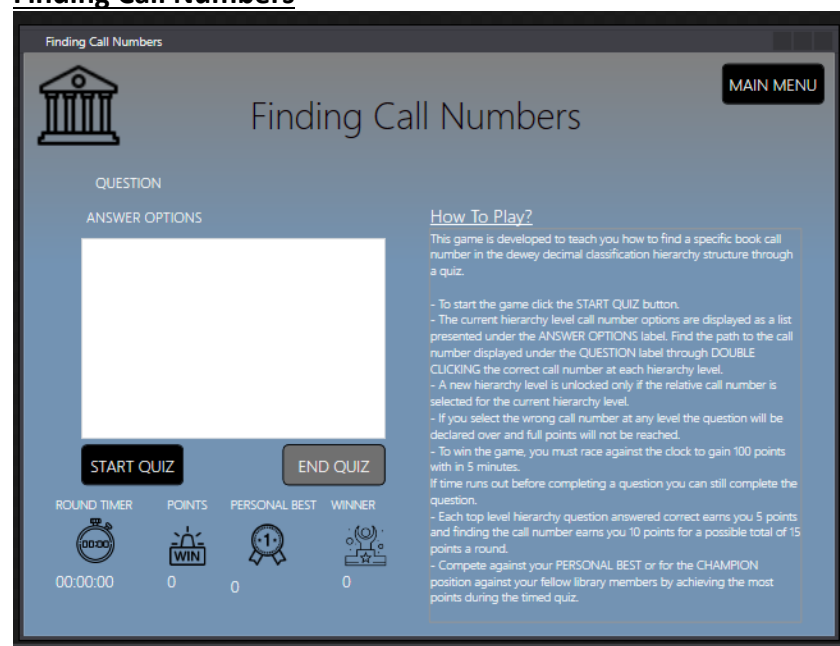
Identifying Areas



This game is designed to teach the user call numbers and the relative top-level categories to assist the user in taking their first steps in finding a library book . To start the game the user must click the START SESSION button. The user must match the questions presented in the list labelled QUESTIONS with the correct answers from the ANSWER OPTIONS list using the

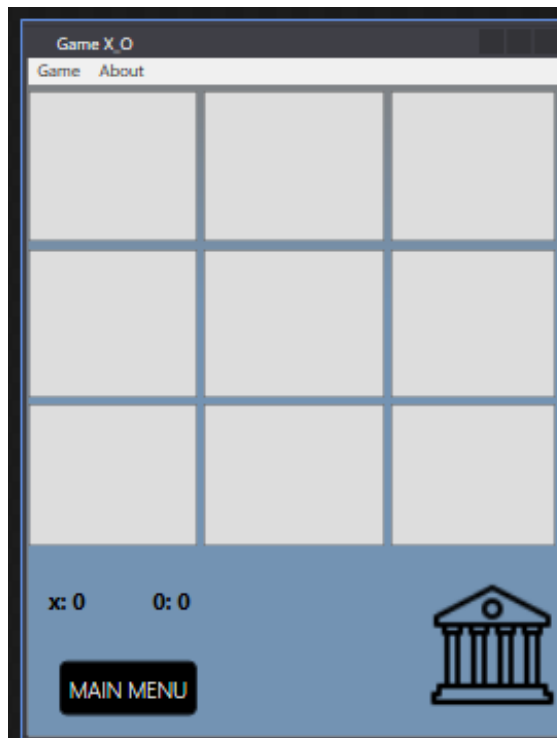
drop-down menus. The user must Click the CHECK ANSWERS button when all answers have been selected. To win the game the user is required to score a total of 15 points in a session. 1 point is awarded for each correct answer and a bonus point is awarded if all questions are answered correctly in a round. A point is deducted for every wrong answer. To end the current session the user can click the END SESSION button. The user can compete against their PERSONAL BEST or for the CHAMPION position against their fellow library members by setting the highest score for most correctly answered questions. There is no limit on how many questions the user can answer to allow them to keep practicing once they have won the game.

Finding Call Numbers



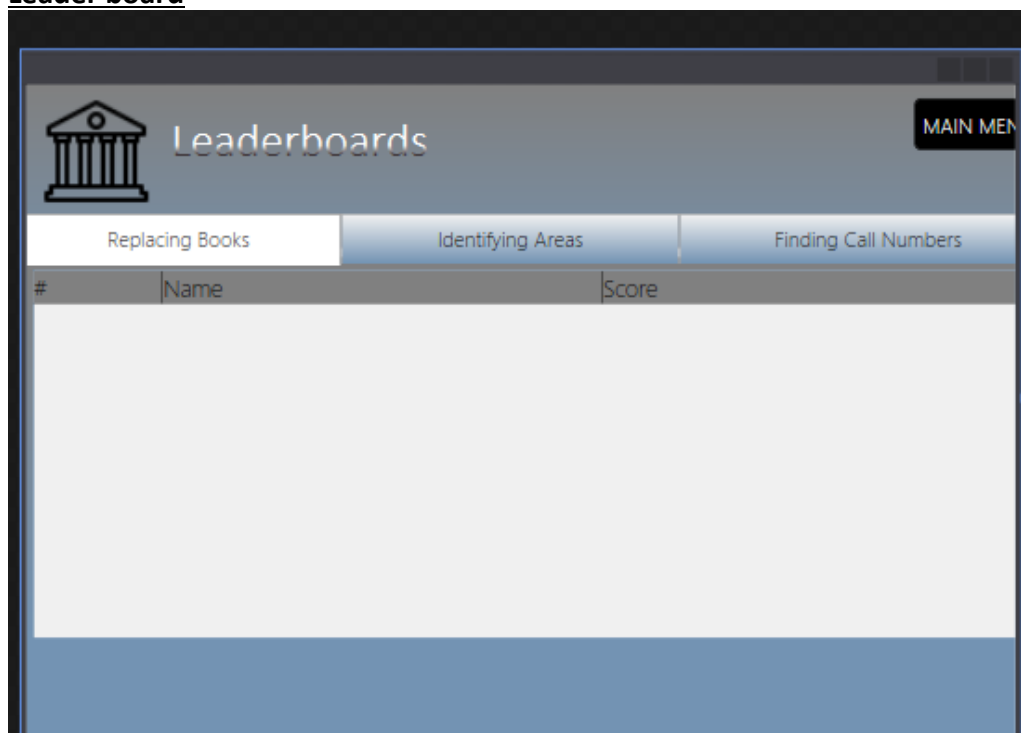
This game is developed to teach the user how to find a specific book call number in the Library Application classification hierarchy through a quiz. To start the game, the user must click the START QUIZ button. The current hierarchy level call number options are displayed as a list presented under the ANSWER OPTIONS label. Find the path to the call number displayed under the QUESTION label through DOUBLE CLICKING the correct call number at each hierarchy level. A new hierarchy level is unlocked only if the relative call number is selected for the current hierarchy level. If the user selects the wrong call number at any level the question will be declared over, and full points will not be achieved. To win the game, the user must race against the clock to earn 100 points within 5 minutes. If time runs out before completing a question the user can still complete the question. Each top-level hierarchy question answered correct earns the user 5 points and finding the call number earns the user 10 points for a possible total of 15 points a round. The user can compete against their PERSONAL BEST or for the WINNER position against their fellow library members by achieving the most points during the timed quiz.

Game



This is the screen which shows up when the user clicks on the Game button. This is a simple X and O's game which can either be a 2 player or a single player game. Users will need to click on the tiles to start the game and an X or an O will show up and that is what they will play as for the rest of the game. The score will be shown in the bottom left corner.

Leader board



This feature allows a user to click the tab of the corresponding game mode to view where they stand in the rankings compared to other library users on a leader board. Each row on

the leader board describes a user's current position, their full name and their best score for the relevant game mode.

