EIE2264 Mini-Project

Cover Page

Student name	Student ID
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Game Number A	Game 1	Game 2
2	Chinese	Country

Game Number B	Game Mode
0	Score

Additional Features done:

1.	All games and modes
2.	Cheat mode
3.	Practice mode
4.	Scoreboard
5.	Settings of the game
6.	Skip Question

Table of content

| Work Allocation Chart		
Work Item	CHEUNG Tin Ho Benjamin	FONG Cheuk Yin
Design Program Flow	✓	✓
C++ DLL program code writing	✓	
C# GUI design		✓
C# Program code writing	✓	✓
Testing and debugging	✓	✓
Search and create characters image		✓
Report writing	✓	✓

Work Schedule

We start working on our mini-project on 13th March 2020. In the first week, we discussed the basic flow of our program and distribute our work. In week two to four, we write the function for basic requirements. In week five, we debug for the function that we have created and think about the additional feature for the game. In week six to week eight, we implement extra mode and extra function. In the last week, we debug the extra function and write the report.

| Date	Content
15/03/2020 - 21/03/2020	Thinking about work allocation
22/03/2020 - 29/03/2020	Working on the login page
30/03/2020 - 05/04/2020	Working on Chinese game (score mode)
06/04/2020 - 13/04/2020	Working on Country game (score mode)
14/04/2020 - 21/04/2020	Debugging while think of extra function
22/04/2020 - 29/04/2020	Working on extra function
30/04/2020 - 06/05/2020	Making different setting for the game
07/05/2020 - 16/05/2020	Working on the report

Class description

Login Page

We created a label box for player to input their name which cannot be NULL or start with " "
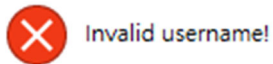
if we found the same name in the player list, the game will show the message "welcome" with the player's highest score, or else there will only be "welcome" as the player is recognized as a new player.
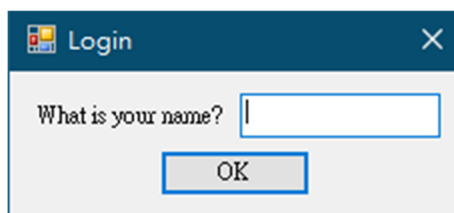
Home Menu

We created some combo box for player to select the game mode they wanted to play with and button for changing setting for "Difficulty for English game" which will select different question from the data base, "number or rounds" for player to select how many round they want to play with when they play with round game mode, "time allowed for each question in each level(Tier)" and "score gained for each round of game".


We then created a "High score" button which act as a leaderboard for player to check the list of players with their highest score arranged in descending order.
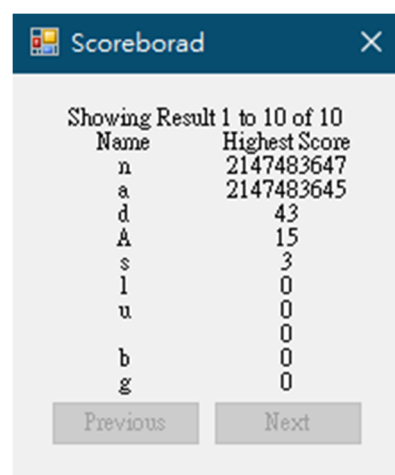
Player can also toggle on cheat mode (Yes a game with built in cheat is DEFINITELY made for kids) where then all the game that the player plays will have answer hover on the box. If cheat is toggled on, player can also edit their highest score in settings. A button called switch user will let the player go back to login page and the quit button will exit the program.
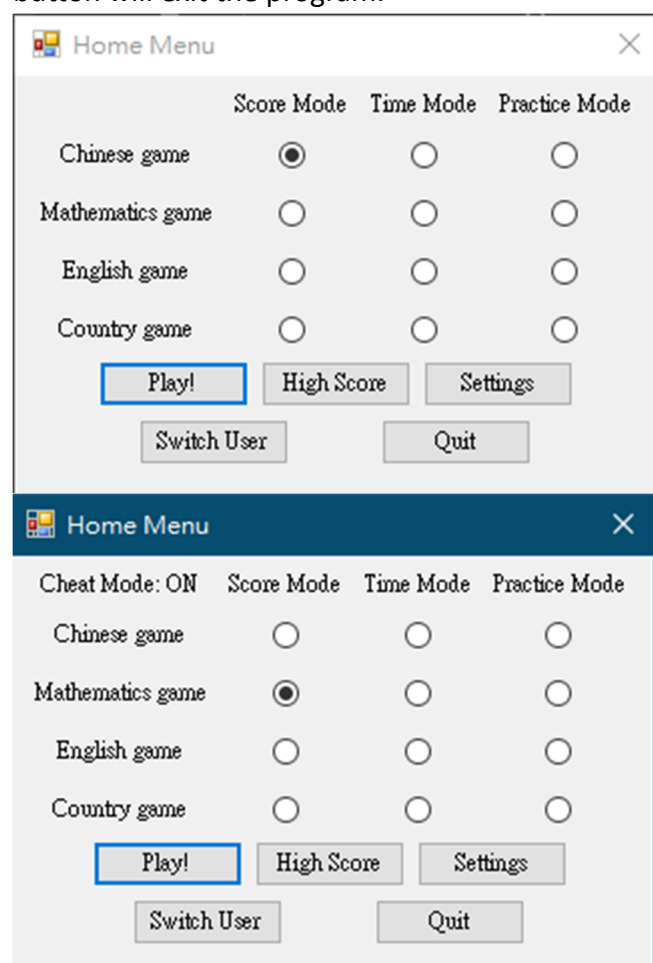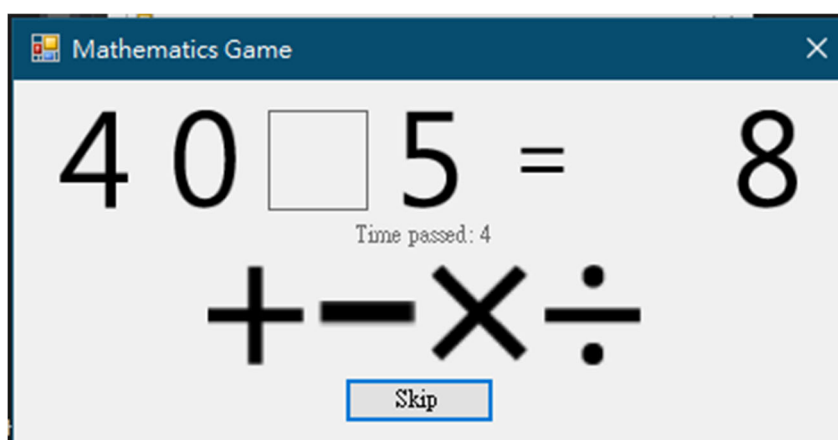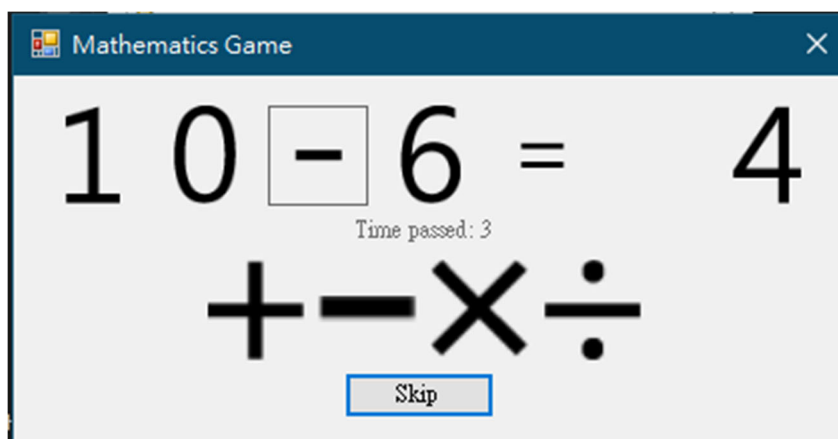
Chinese Game

First, we checked which game mode the player has selected and if Chinese game is selected the game will redirect the player to the Chinese game class which contain 4 boxes showing images of words and 4 words that can be selected that check the player if he/she dragged the correct words to the empty box to fill in the box.
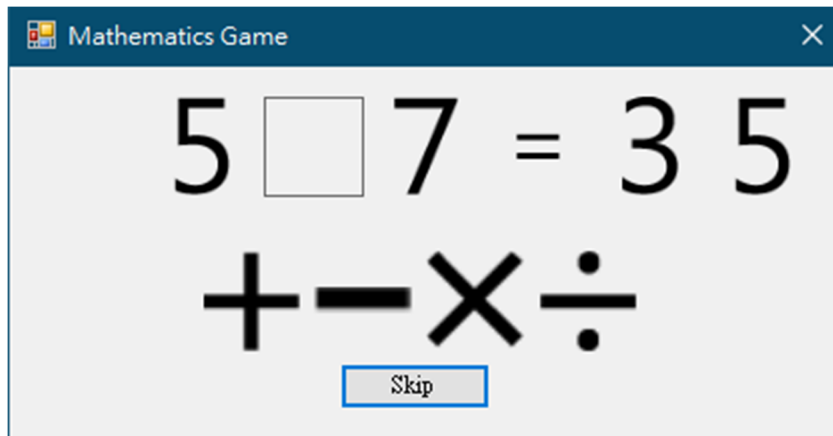
When player selected score mode, there is no time limit and player can also select if the answer can be corrected, if not, it will automatically jump to the next question no matter the player answer correctly or not, and of course there will be no score gained with wrong answer, player can play until the round that he previously selected is reached. While in Time mode, the player will keep playing similar to score mode but instead of playing until enough round, there will be a timer counting down, when there is no time left (timer: 0) the game ends. The last game mode is Practice mode, where there is no limit for how long the player can play. Skip button is provided in all game mode for player to skip question.
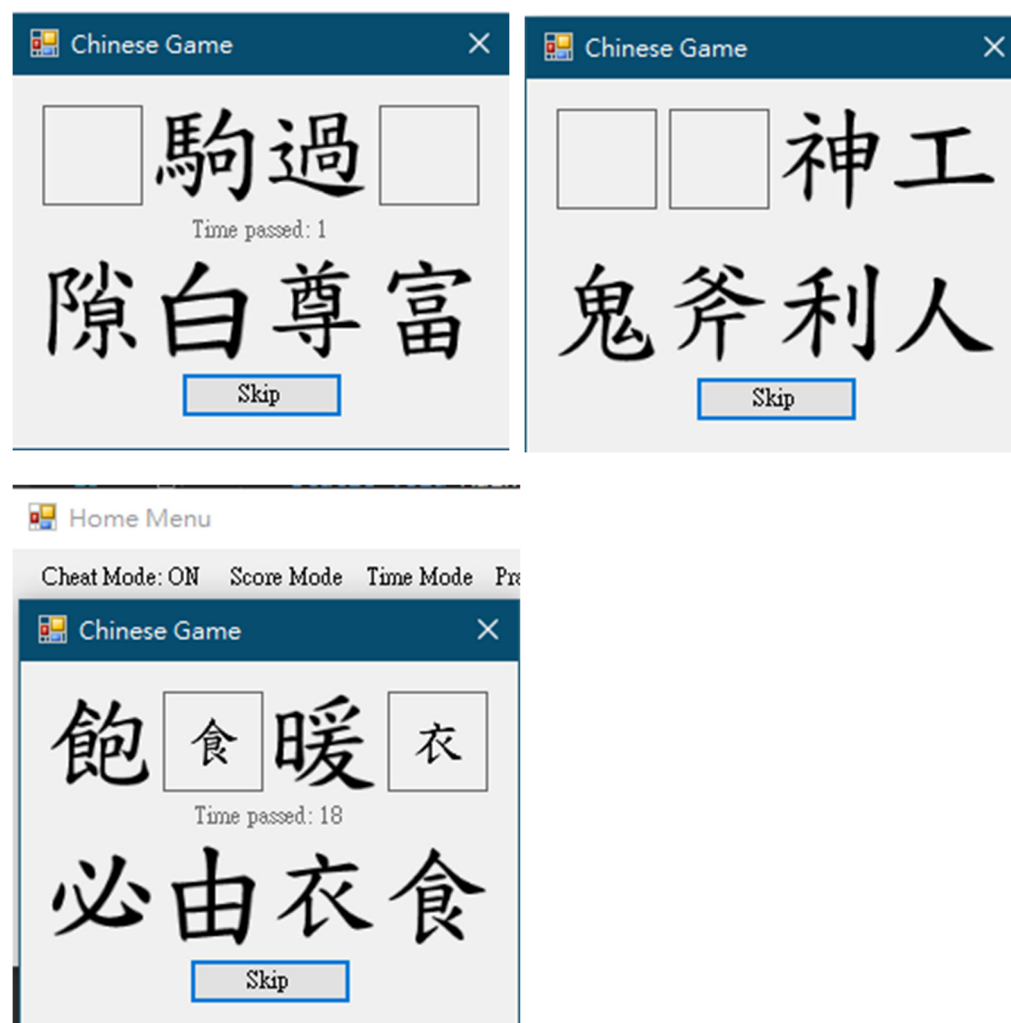
Math Game

First, we checked which game mode the player has selected and if Math game is selected the game will redirect the player to the Math game class which contain a real time generated equation and the player has to pick a correct operator
To complete the equation. The program will check if the equation make sense and automatically return false if case diving 0 appeared preventing error. There is also 3 different game mode to be selected, When player selected score mode, there is no time limit and player can also select if the answer can be corrected, if not, it will automatically jump to the next question no matter the player answer correctly or not, and of course there will be no score gained with wrong answer, player can play until the round that he previously selected is reached. While in Time mode, the player will keep playing similar to score mode but instead of playing until enough round, there will be a timer counting down, when there is no time left (timer: 0) or player answer incorrectly, the game ends. The last game mode is Practice mode, where there is no limit for how long the player can play. Skip button is provided in all game mode for player to skip question.
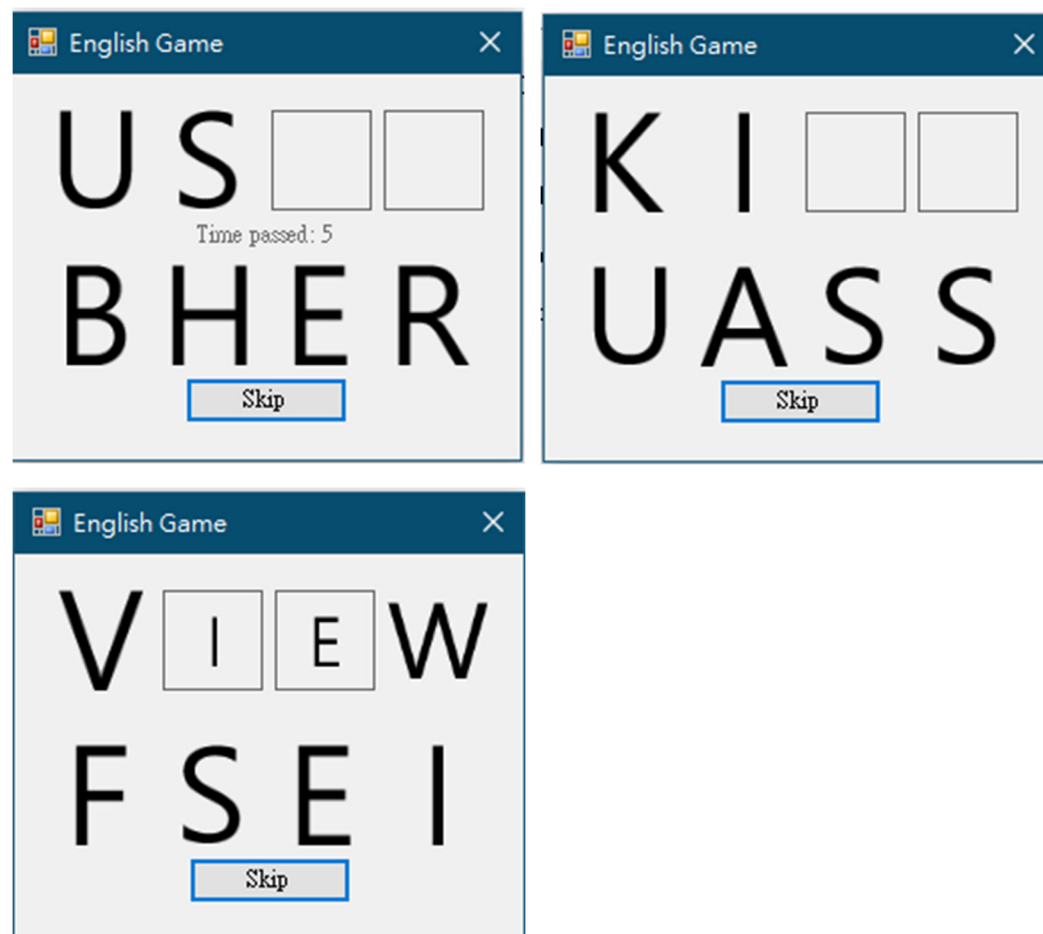
English Game

First, we checked which game mode the player has selected and if English is selected the game will redirect the player to the English game class which contain 4 boxes showing images of words and 4 words that can be selected that check the player if he/she dragged the correct words to the empty box to fill in the box.
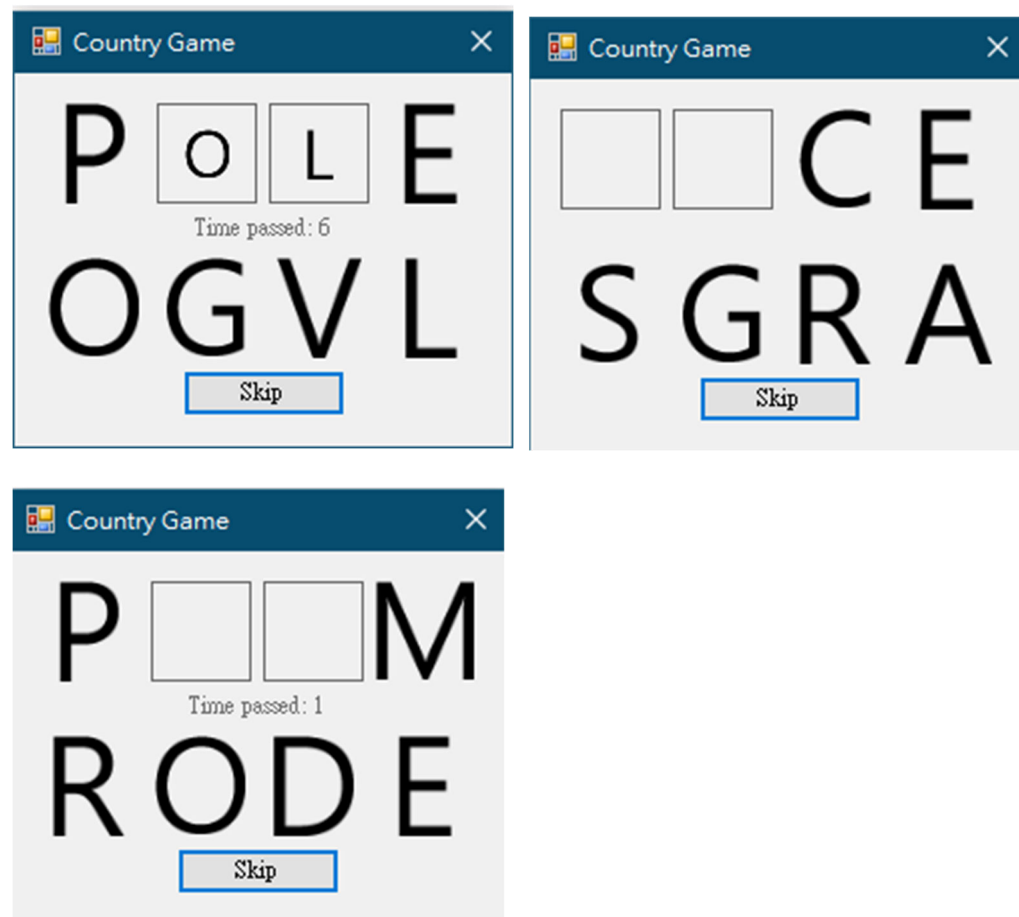
When player selected score mode, there is no time limit and player can also select if the answer can be corrected, if not, it will automatically jump to the next question no matter the player answer correctly or not, and of course there will be no score gained with wrong answer, player can play until the round that he previously selected is reached. While in Time mode, the player will keep playing similar to score mode but instead of playing until enough round, there will be a timer counting down, when there is no time left (timer: 0) or player answer incorrectly, the game ends. The last game mode is Practice mode, where there is no limit for how long the player can play. Skip button is provided in all game mode for player to skip question. In English mode, player can also select the difficulty which will make the game select question from different database.

Country Game

First, we checked which game mode the player has selected and if Country game is selected the game will redirect the player to the Country game class which contain 4 boxes showing images of words and 4 words that can be selected that check the player if he/she dragged the correct words to the empty box to fill in the box.

When player selected score mode, there is no time limit and player can also select if the answer can be corrected, if not, it will automatically jump to the next question no matter the player answer correctly or not, and of course there will be no score gained with wrong answer, player can play until the round that he previously selected is reached. While in Time mode, the player will keep playing similar to score mode but instead of playing until enough round, there will be a timer counting down, when there is no time left (timer: 0) or player answer incorrectly, the game ends. The last game mode is Practice mode, where there is no limit for how long the player can play. Skip button is provided in all game mode for player to skip question.

Collection

The collection class is used to store those common function for the game such as getting players' data from the txt file, getting question from data base for Chinese, English and Country game, calculating the answer for Math game. Also it checks the setting of the player such as which game mode did the player select and making the game actually works and playable by checking if the mouse is dragging the text picture to the box and then check if it is the correct box and also to check when to end the game.

Conclusion

In this project, we are happy that we get to combine both our C++ and C# skills to make a real game, there were actually more bug then we thought and many obstacles in front of us which we tried hard overcoming them. for example, we could never forget that one week we stayed up debugging the programming and swear to God that we should be a careful programmer trying to achieve a bug-free error-free program. We successful trained our logical thinking skill and developing skill to make a game from zero which we don't usually have opportunity to do so. In terms of further development, we would like to have a more beautiful GUI and better looking game graphics, also we would like to expend the question bank of the Chinese game and provide larger answer question for the Math game.

Reference

1. Chinese idioms:
   http://big5.chengyudaquan.org/
2. English word list:
   https://github.com/dwyl/english-words/blob/master/words_alpha.txt
3. Common English word list:
   https://github.com/first20hours/google-10000-english/blob/master/google-10000-english.txt
4. 3000 most common words in English
   https://www.ef-australia.com.au/english-resources/english-vocabulary/top-3000-words
5. Country name list:
   http://www.articlesdirectoryindia.com/download-list-all-countries-excel-format