

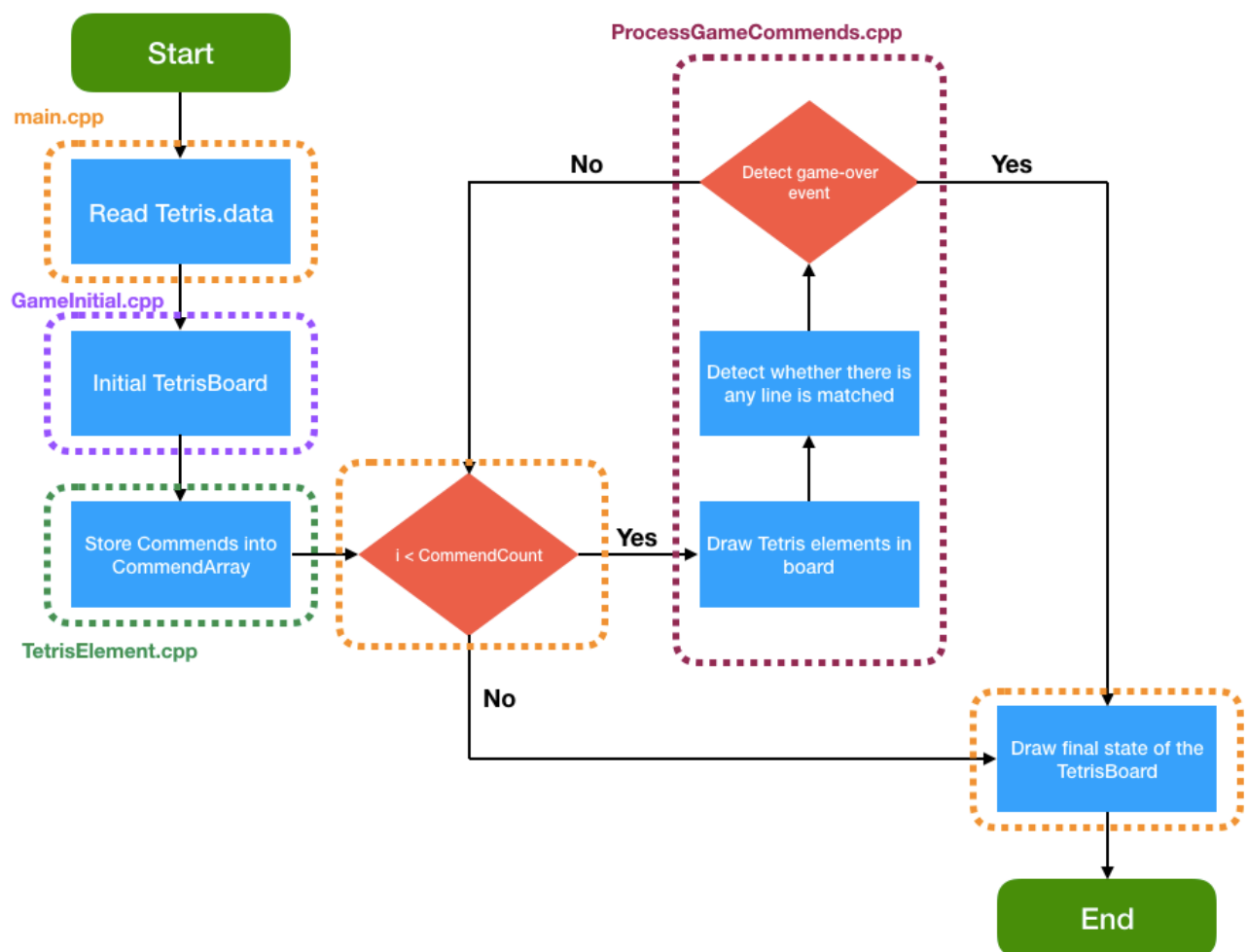
EECS 204002 Data Structures

Project #1: Tetris

Student: 林柏均
Student ID: 107062240

1. Project Description:

(a) Program Flow chart:



(b) Detailed Description:

I separated my program into four parts:

(1) **main.cpp**

This part is to access the information from the Tetris.data file and fill the data into the **CommendArray**, and then process the array from line 74~77.

(2) **GameInitial.cpp**

CreateTatrisBoard: Creating a board filled with 0 according to given row and column.

DrawCurrentStateBoard: Print out the current board by double pointer

(3) **ProcessGameCommends.cpp**

drawTatrisOnBoard: Add new Tetris blocks in the Tetris board.

detectGameOver: Detect current Tetris board is game over or not.

detectLineMatch: Check whether the column is filled with 1 only, if yes, delete it.

(4) **TatrisElement.cpp**

CreateElementArray: Convert decimal value in to array, and create a struct to store the array, row, column, start x_coordinate

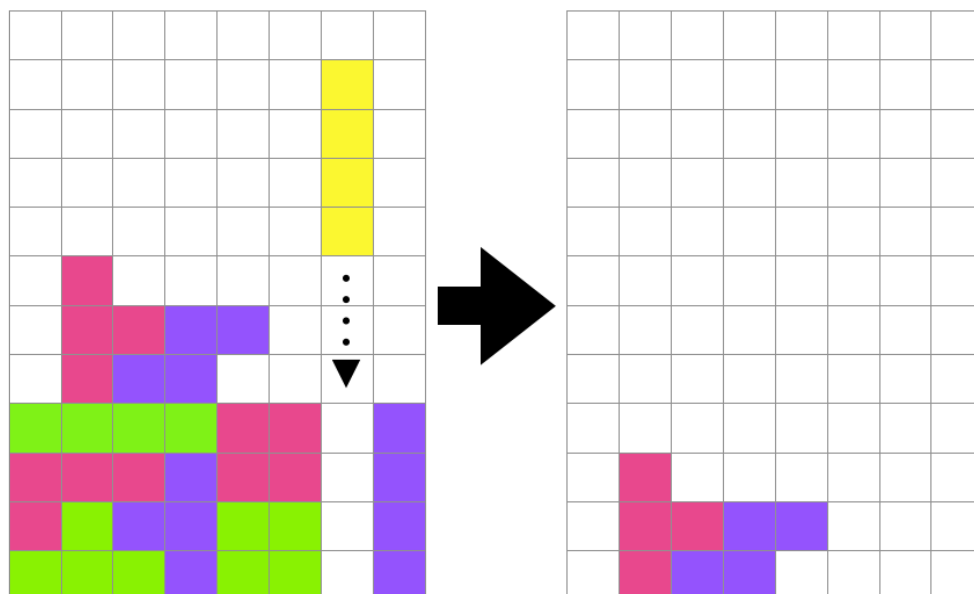
CreateCommendnStream: Convert Commends into [TatrisElement](), so I can process it conveniently.

ReturnCommendCount: Return the count of the commends

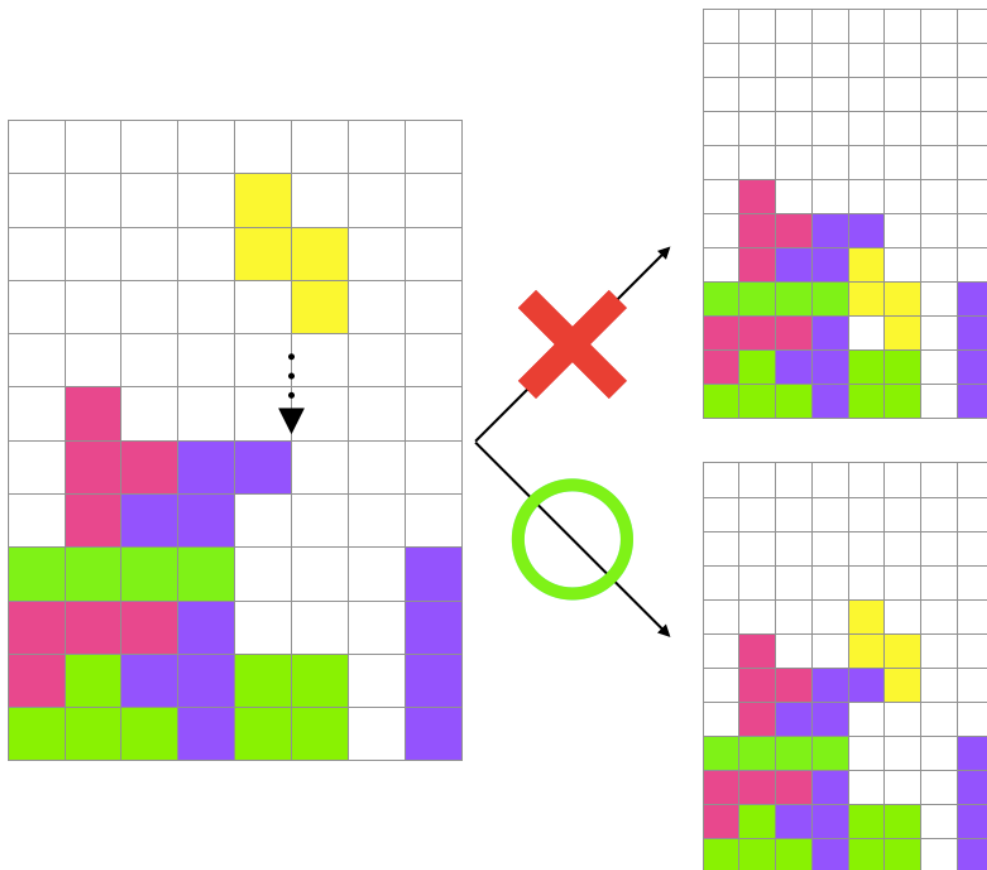
2. Test case Design

I designed my test case through two main purpose:

- (1) Check whether other classmates can successfully delete the row which all cells are filled with 1:



(2) Whether they can set new Tetris block into correct position:



3. Experience and Thought of the program:

Though I have some projects experience through my jobs developing IOS app since last summer, however, it was my first time to build a project by C++. Hopefully I got some precious experience before, so I could easily build my project without wasting too much time. However, it was still a great experience to build a Tetris game, and what I learned from the project was listed below:

- (1) Learning how to efficiently separate my program into different files according to their purpose.
- (2) It was my first time to read file by using C++, so I searched tons of websites to acknowledge the library of "fstream" and knew lots of funny functions from there.
- (3) After TA releasing the Tetris.data, I tried lots of test cases and found some of the functions having some logic problems, though they were trivial but so important. If we ignored these small problems, we would cause some unnecessary mistakes.