Programming II April 29, 2011

420-206-AB Worth 16%

The Project

(Due: Friday, May 13th, 2010 at 17:30)

(Late Assignments will be accepted until Monday, May 16th, 2010 at 16:00)

This project is to be done in teams of 2 programmers.

The basic functioning of the program will be worth 12 out of the 16 marks. The remaining 4 marks will be based on a feature that you and your partner add to the program. The feature you add is up to you, but, you must get it approved by me.

Once you have decided on your added feature, send a MIO to me, with your partner’s name and a brief description of your added feature. Please be creative, I will not allow more than 1 group to have the same feature, first come first serve.

You must hand in 2 versions of the program:

* One using only text (no graphics)
* One using the Simple Graphics Library

When creating the Simple Graphics version, the only function that is allowed to be modified is the Draw().

You must code the text version first, then, the graphics version. Trust me, this will make your life easier.

**Option 1**

Create a class that implements the game of Othello (Reversi).

You can find the detailed rules for the game of Othello on many websites.

A player makes a move by specifying the row and column of the position they wish to place their next token. If the move is valid, update the board, and re-draw. If the move is invalid, inform the player, and allow them to move again. Once a winner is identified, based on the rules, congratulate them, and end the program.

The entire game must be coded in a class; on the next page you will find the class definition. The main function for the actual game, should be very simple, here is an example:

#include “Othello.h”

void main(void)

{

Othello aGame;

aGame.Play();

}

Here is the Othello class:

#ifndef \_OTHELLO\_

#define \_OTHELLO\_

enum boardPieces {Blank, White, Black};

const int BOARD\_SIZE = 8;

class Othello

{

private:

boardPieces theBoard[BOARD\_SIZE][BOARD\_SIZE];

boardPieces currentPlayer;

void Init();

void Draw();

bool ValidMove(int, int);

bool AnyValidMoves();

void MakeMove(int, int);

void GetMove(int&, int&);

public:

Othello();

void Play();

};

#endif

**Option 2**

Create a class that makes a random square perfect maze, and then allows the user to try and find their way from the entry of the maze to the exit of the maze.

First, the user must be asked the size of the maze they wish to create. All mazes will be square, i.e., same length and width. Valid sizes are in the range 5-15.

Create a perfect maze of the given size.

Randomly select one corner as the entry point, and one corner as the exit point.

Using the keys U (up), D (down), L (left) and R (right), allow the user to find their way through the maze. When they find the exit of the maze, congratulate them and exit the program. If the press the Q key at anytime while in the maze, exit the program.

The entire game must be coded in a class; the details of the class are up to you. The main function for the actual game, should be very simple, here is an example:

#include “Maze.h”

void main(void)

{

Maze aMaze;

aMaze.Go();

}

You must have one member function in your class named “Draw()” which draws the maze, and the users current location in the maze.