Lab 4 – TICTACTOE

In this lab you will learn how to:

1. Incorporate SDL framework into your C++ project
2. Utilize mouse input within the SDL framework for game actions
3. Print fonts on the SDL window screen

Part 1 – Incorporate SDL Framework

Steps:

1. Download the SDL (<https://github.com/libsdl-org/SDL/releases/tag/release-2.28.4>) and SDL TTF (<https://github.com/libsdl-org/SDL_ttf/releases>) dev packages.
2. Extract to your library folder (remember the path). Start a C++ project and copy the 2 DLL files into the CPP folder.

A screenshot of a computer

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1. Look for a TTF font of your liking, download it and place the TTF file in your CPP folder.
2. Right-click on your project solution properties and add the
   1. Additional include directories for both SDL and SDL\_TTF
   2. Add the additional library directories for the lib\x64 directories for both SDL and SDL\_TTF
   3. Add the additional dependencies for ***SDL2.lib***, ***SDL2main.lib*** and ***SDL2\_ttf.lib***.
3. Add the SDL and SDL\_TTF headers.
4. A screenshot of a computer code

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5. Run the program to see if the links are correct.

Part 2 – Writing the Tictactoe class

1. Public members:
   1. Constructor
   2. Void InitializeBoard()
   3. Void CleanUp()
   4. Void HandleInput()
   5. Void Update()
   6. Void Render()
   7. Void DrawBoard()
   8. Void CheckWin()
   9. bool IsRunning() const
2. Private members:
   1. const int SCREEN\_WIDTH = 600;
   2. const int SCREEN\_HEIGHT = 600;
   3. const int GRID\_SIZE = 3;
   4. const int CELL\_SIZE = SCREEN\_WIDTH / GRID\_SIZE;
   5. const int RECT\_SIZE = CELL\_SIZE;
   6. const int FONT\_SIZE = 72;
   7. SDL\_Window\* window;
   8. SDL\_Renderer\* renderer;
   9. TTF\_Font\* font;
   10. char board[3][3];
   11. bool isRunning;
   12. bool isXTurn;
   13. bool gameOver;
   14. bool draw;
   15. char currentPlayer;
   16. SDL\_Color tickColor = { 0,255,0,128 };
   17. SDL\_Color textColor = { 255,0,0,128 };

Method Details:

|  |
| --- |
| Constructor |
| Void InitializeBoard() |
| Void CleanUp() |
| Parsing mouse input with void HandleInput() |
| Void Update() |
| Void Render() |
| Void DrawBoard() |
| Void CheckWin() |
| Bool IsRunning() const |
| Main game loop |

Tasks to complete:

1. The rendering of the X and O fonts have some issues associated with the data type. Fix this problem to render it properly.
2. Tweak the rendering coordinates within the screen so the X and O render in the middle of the cells, and the “Gameover” or “Draw” texts render at the middle of the screen.