Computer Science 130 - Python-based Connect 4 Extension

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1 Introduction

This document outlines the extension added to a modified version of Connect 4, built in Python, as per the brief for the Computer Science 130 Assignment. I elected to extend the game by creating a graphic user interface.

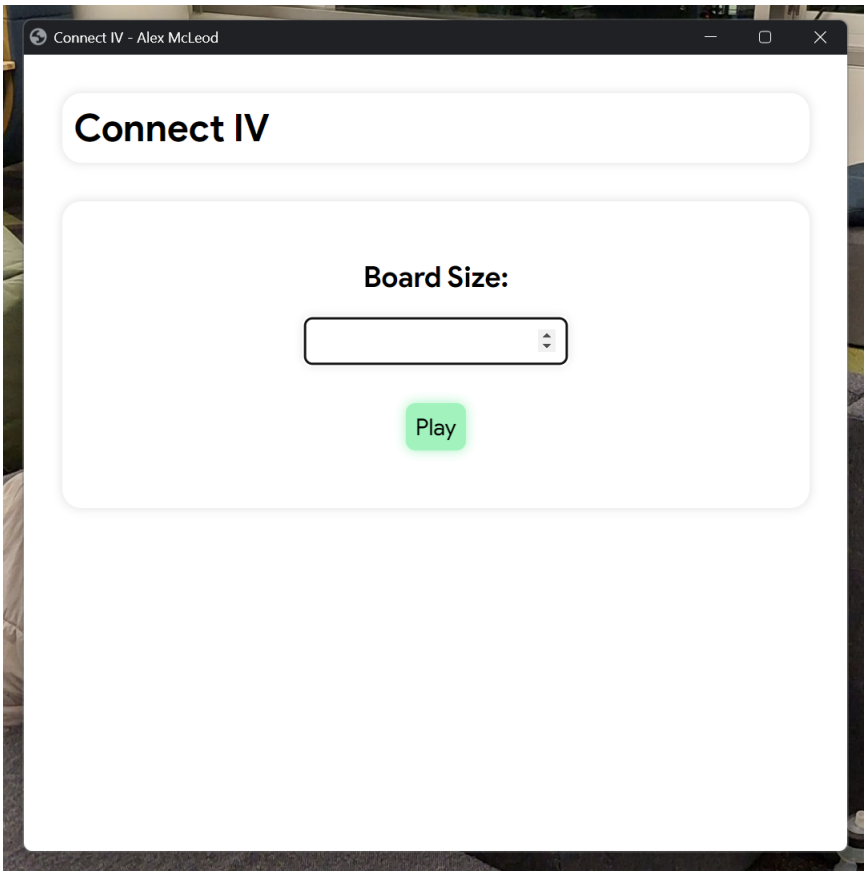
2 Explanation

To create the graphical user interface, I used the python module eel as it enables you to use modern web tooling to structure and design the interface while still keeping your business or game logic in Python.

To create the user interface when `python3 AssCool.py` was executed, I had the python main function run this:

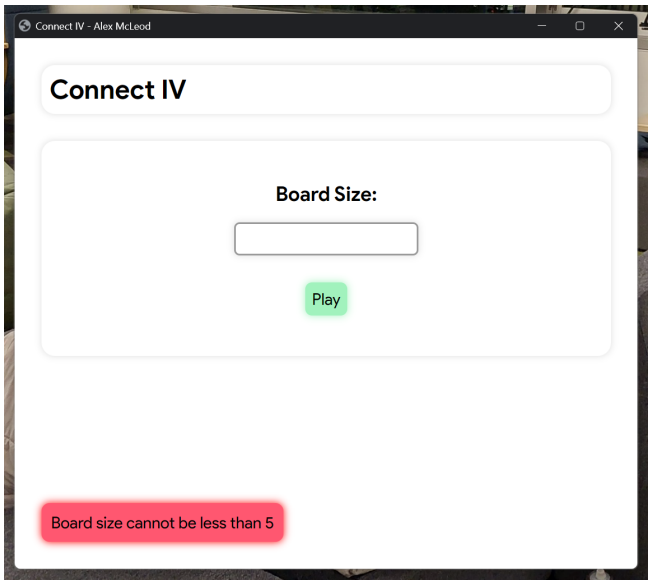
```
eel.init('web')
eel.start('index.html', size=(700, 700), disable_cache=True)
```

`eel.init('web')` initialises eel in the `./web` folder, which is where our html, css and js files are stored for the user interface. The `eel.start` command opened the app on our index page, with the window size of 700 pixels by 700 pixels.

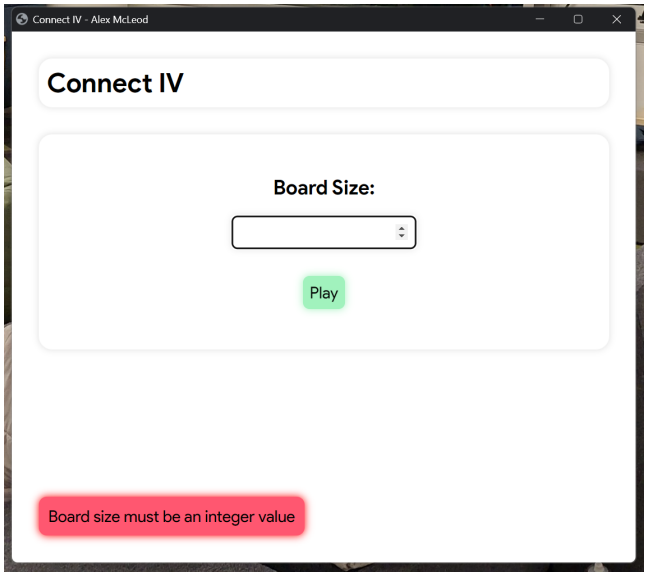


This is a basic html page, with some css styling and Javascript. The user chooses what size they would like the board to be in the HTML ¡input /¿ with the type number. This means that only numbers can be entered.

If a user selects a number with a board size less than 5, a snackbox element will appear in the bottom left and show the error.



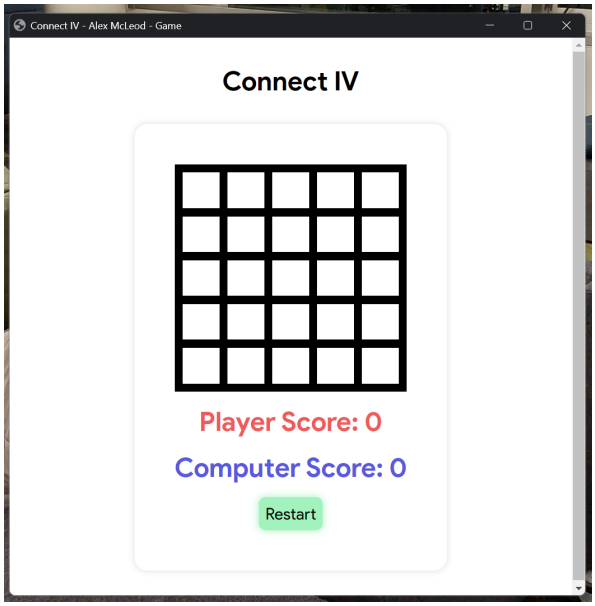
Likewise, if the number is not an integer:

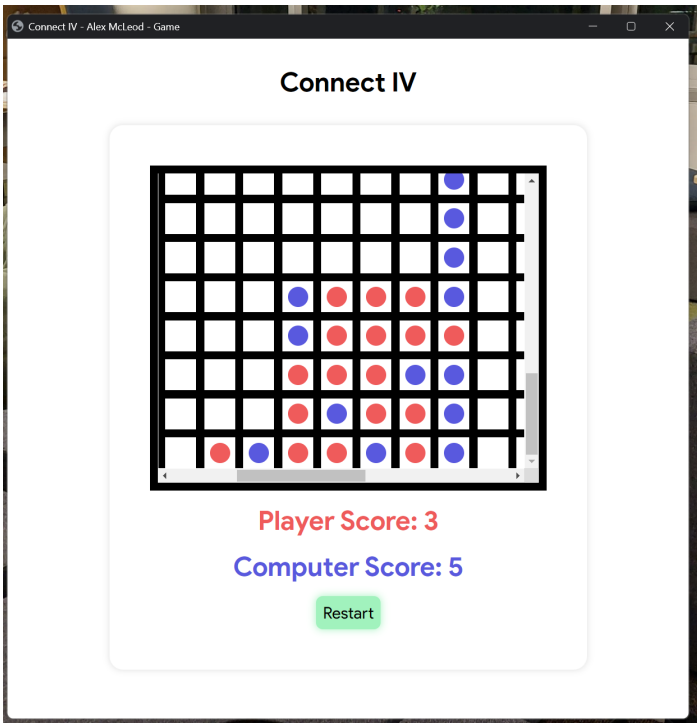


If the user enters a vaild board size, the Javascript will call the python function `start_game()` with the Javascript line `eel.start_game(selectedBoardSizeValue)();`. This will navigate us to the html page with the game and create the game board

with the selected size. There are Javascript event listeners such that, when the user selects a column, it will run the python function to add the players token to the column, add the computers token, and then run the Javascript function to udpate the board accordingly. Every time the board is updated, the python will check if the game is over, and if so, will replace the restart button with a replay button, which takes the user back to the index page to chooose a board size.

Please note, that if a very large board size is selected, the user will be able to scroll around the board, and still be able to see everything. This means that there is no limit on how large the board is.





3 Conclusion

That was an explanation of how I used the python module eel, to create a modern user interface with web tooling, for the python game Connect 4.