Algorithms and Data Structures Coursework 1 Report

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Introduction

Describing the problem and giving an overview of features

Describe the task

The main objective of the task is to create a functioning naughts and crosses game, while displaying our skills in implementing different data structures and algorithms to act on those data structures.

What I need to represent

In order to create naughts and crosses I need to represent the different aspects of the game, these are the game board, the players, the pieces and the positions the pieces are played at. These can be done with different data structures and how I will represent these will be discussed in the design section.

Features

There will also be some extra features implemented in this game, the first is the ability to display instructions so the user knows how to play the game. The second is that I will decide which player goes first by ‘flipping a coin’. The third feature is adding the ability to undo and redo moves made so players can fix any mistakes they make. Finally the last feature will be the ability to record games so they can be replayed at a future time.

Design

Explaining how you designed and architected your software playing particular attention to the algorithms and data structures used

Enhancements

Describing the features that you would add or improve if you had more time

Loops instead of ifs for checkWinner(), leads to scaling the board up to connect 4 or whatever

Critical evaluation

Explaining the features that you feel work well, or work poorly, and why you think this. You should support your evaluation with experimental results.

Personal Evaluation

Reflecting on what you have learned, the challenges you faced, the methods you used to overcome challenges and how you feel you have performed.

References