

**Software Development Report**  
**CSC 221: Programming 2: Fall 2024**

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**Inheritance Lab: New Game**

**Problem Summary:**

Create a game using inheritance where there are some shared classes in addition to some super and sub classes. The game I am doing will be Connect Four

**Implementation Requirement:**

- main method created in GameDriver
- work in groups of 2 or 3
- each person adds one game
- use superclasses
- use subclasses

**System Design:**

- GameDriver used to run code
- Game is used primarily
- Board is made
- Moves can be made
- Winner is found

**Execution Instructions:**

- Run the code through GameDriver
- Follow the instructions given to play the game

**Testing Report**

Name	Description	Input	Expected Output	Actual Output	Pass?
Test1	red win horizontal	correct moves till red wins horizontally	red wins	red wins	yes
Test2	black win horizontal	correct moves till black wins horizontally	black wins	black wins	yes
Test3	red win vertical	correct moves till red wins vertically	red wins	red wins	yes
Test4	black wins vertical	correct moves till black wins vertically	black wins	black wins	yes

Test5	red wins forwards diagonal	correct moves till red wins diagonally	red wins	red wins	yes
Test6	black wins forwards diagonal	correct moves till black wins diagonally	black wins	black wins	yes
Test7	red with backward diagonal	correct moves till red wins diagonally	red wins	red wins	yes
Test8	black wins backwards diagonal	correct moves till black wins diagonally	black wins	black wins	yes
Test9	Invalid move	-1 and 8	Illegal move Illegal move	Illegal move Illegal move	yes
Test10	Full board	move moves so no one wins and board gets full	there is no winner	there is no winner	yes
Error1	Character input at start	‘y’	ERROR	ERROR	yes
Error2	Character for move	‘row’	ERROR	ERROR	yes

### Estimated Time Required vs. Actual

5 hours including the SDR (estimated)

6 hours total on code, 30 minutes on SDR

### Outside Resources used:

Micah Yoder (Me): Connent 4

Nick Bohm: Reversi

Nathan Krop: Checkers

### Security Report:

No security issues

**Ethical:** no ethical uses come to mind for a board game

**Unethical:** no unethical uses come to mind for a board game

**Future Improvements:** Incorporate GUI

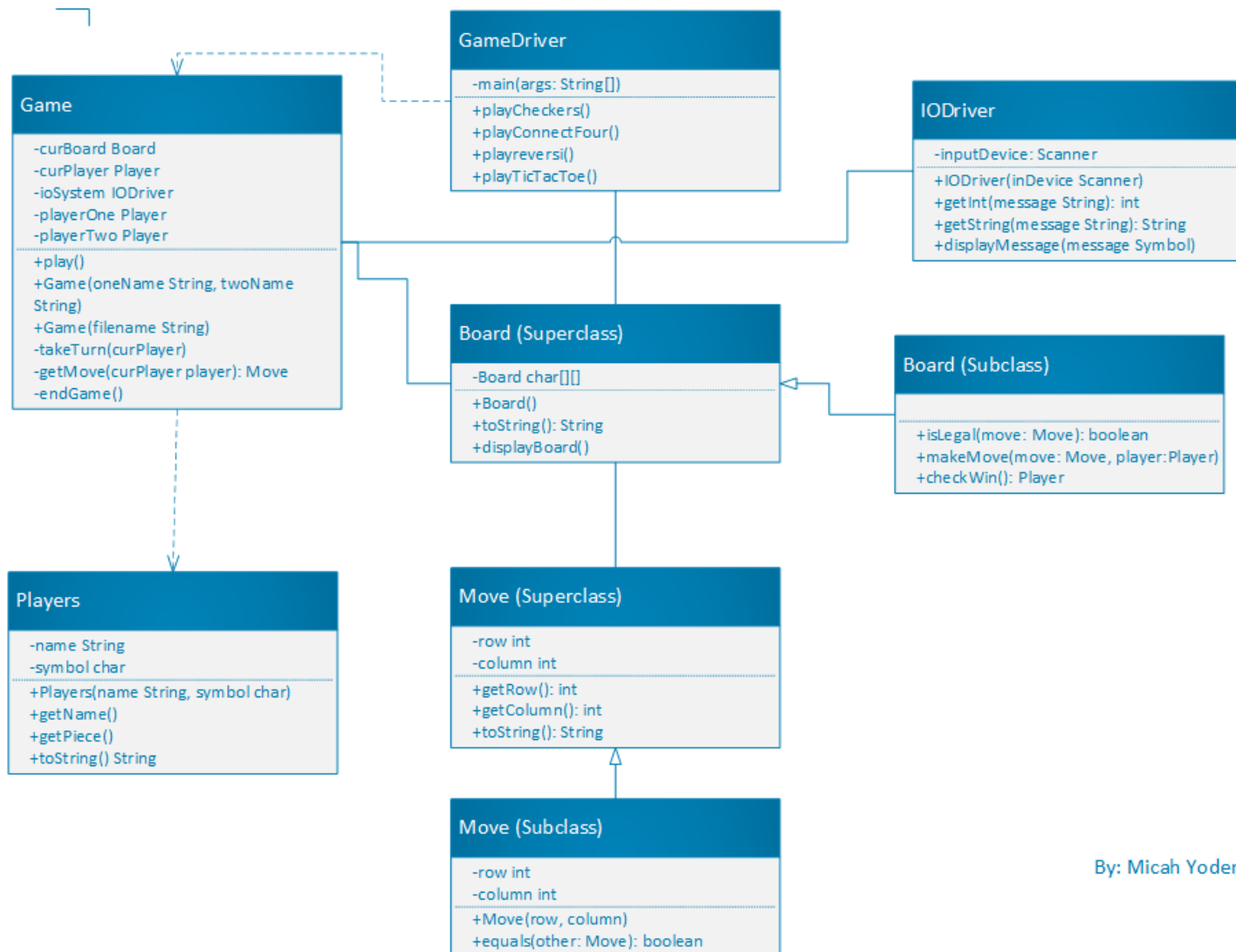
**Lessons Learned:** Learn how to use inheritance, learn how to work more in groups

From looking at the previous lab: The only difficult classes should have been Game and Board, the other classes are very simple.

Reaction to working in a group: Difficult to work on one project when there isn't a shared page where we can all edit at the same time.

How using inheritance helped: The only thing that was necessary to add was our own subclasses, changing a few other things was also needed, but adding games was very simple once the superclasses were understood.

**Improvements of Work:** Put full banner comments on all my code



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