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Data Structures & Algorithms

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Chess Reflection

While doing this project, I learned about concurrent modification exceptions when utilizing a for loop to edit an array list. This error appeared countless times while compiling, forcing us to switch the code over to regular for loops. In general, I learned about mouse listeners. These were very useful in determining the move from the user. On top of this, there are several different methods within the mouse listener depending on the type of click or press of the mouse which was interesting.

The hardest thing about this project, besides the compilation errors and debugging, was figuring out how to only allow moves that avoid check. This method ensured that a piece’s valid moves did not leave their own king in check. Moreover, the AI, although not perfect by any means, was quite hard to even think about where to begin. Still, the AI lacks some seemingly obvious moves to a novice chess player. For example, the AI would not understand a checkmating sequence such as the ladder mate. I would be interested in seeing how far we could develop the computational engine, and maybe decipher what elo it could play against real people. On the other hand, the coolest thing about this project is either the promotion method, the highlighting feature, or AI. All of these made us feel accomplished. I think that AI especially is really cool, just to have a computer that can play rudimentary chess moves is quite exciting.

When thinking about next time, I would definitely prefer to plan our approach in more detail. Many helper methods and changes to specific piece’s constructors were added at later stages. And still many helper methods could have proved effective. For example, a method that compares to see whether two pieces are the exact same, since we basically cross-referenced every single important instance variable when looping through our countless for loops. Then, we also have a lot of random methods which now are ineffective.

All in all, I think this project taught me a lot about coding, including introducing me to more GUI aspects. In the future, I would still like to come back and improve the computer whenever.