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CMPT 440   Project Proposal

Chess Opening Practice Tool

For my project, I will use Deterministic Finite Automata to create a Java program that allow the user to test their knowledge of various popular chess openings. The program will first have the user select if they wish to play as white or black. The selection of playing as either white or black can be changed at any time. Depending on the user's selection, they will be given a few different popular openings (for example, the King's gambit or the Ruy Lopez opening if white is selected, or the Slav defense or Sicilian defense if black is selected). Once the user has selected the opening, they will be asked to input the corresponding moves to execute the opening properly by typing the piece they wish to move, the space it is moved from, and the space it is moving to. For example, if the user is attempting to execute the Slav defense, they will type "pawn, d7, d5" as the first move. Deterministic Finite Automata will be used to analyze the piece, the starting space, and the ending space the user inputs for each move and will inform the user if they have successfully completed an opening or if an incorrect move has been made. Incorrect moves will be pointed out to the user and a message will display the correct move. After each correct move is made, the program will output the move of the opponent in the selected opening. Since the program will only test the knowledge of openings, only a few moves will have to be made to complete the opening. The program will also include multiple variations for certain openings and the common opposing moves to further test the knowledge of the user. Deterministic Finite Automata are well suited for this project because as the user moves their pieces, the sequence will be validated as an accepted variation of the opening by changing to the associated state or will be directed to the error state.