



## Project Design:

- Structure:
  - a. struct players: Consists of player's names, number of wins and number of losses
- Functions:
  - a. int playStandard(player a, player b): Creates a standard chess game with the players called
    - i. void boardStandard(char board[8][8]): Sets the board into a standard starting position
  - b. int horde(player a, player b): Creates a horde chess game with players called
    - i. void boardHoard(char board[8][8]): Sets the board into a horde starting position
  - c. int playChess960(player a, player b)
    - i. void board960(char board[8][8]): Sets the board into random pattern with first two rows on the opposing ends
  - d. char move(char board[8][8], int initx, int inity, int x, int y): Deletes piece from wanted initial and puts piece in final position
    - i. int isValid(char board[8][8], int initx, int inity, int x, int y): Verifies move if there is no friendly piece on final position.
    - ii. void kingSafe(char board[8][8], int x, int y): Checks if desired position of king is threatened.
    - iii. void castle(char board[8][8], int initx, int inity, int x, int y): Checks if pieces between rook and desired castling location is threatened, if not, move king two spaces towards desired side and place rook on other side of king.
  - e. void knight/bishop/rook/queen/ (char board[8][8], int initx, int inity, int x, int y): moves piece according to corresponding pattern to final position
  - f. void pawn(char board[8][8], int initx, int inity, int x, int y): Same behavior as normal piece movement if not promotion
    - i. void promote(char board[8][8], char piece): Promotes pawn into wanted type of piece by replacing the pawn at its location
  - g. void displayboard(char board[8][8]): Prints board and corresponding file and row labels.
  - h. int isCheck(char board[8][8]): Checks if king is currently threatened but can escape and returns 1 if true
  - i. int isCheckmate(char board[8][8]): Checks if king is completely threatened and has no method of escape, ends game if true
  - j. void notate(char piece, int x, int y): Uses piece returned in move and notates it into a file.