

### Algorithm:

- Initialize a 9 by 9 2D array where each cell equals “ . ”, representing a blank board
- Create a coordinates dictionary that assigns characters a through i to 0 to 8 respectively
- Create variable turnBlack and set equal to True
- Enter a while true loop
  - Print the current board using a nested for loop to traverse through the 2D array
  - Print whose turn it is depending on the turnBlack variable
  - Ask for user input and assign to variable userInput
  - If userInput is “stop” or “Stop”
    - Break out of loop
  - Enter a try statement:
    - If not (lowercase first character of userInput is a dictionary key and second character of userInput is a number from 1 to 9): (checks if input is a valid coordinate)
      - Print a message saying that the user input is not a valid coordinate
      - Continue (skip to next iteration of while loop)
    - Else if not board array at position [second character of userInput - 1][dictionary value of key lowercase first character of userInput] is equal to “ . ” (checks if coordinate already has a piece on it):
      - Print a message saying that the given coordinate is already occupied
      - Continue (skip to next iteration of while loop)
    - Else:
      - Set the array at position [second character of userInput - 1][dictionary value of key first character of userInput] equal to a black dot if turnBlack is true, and an open dot if turnBlack is false (sets the coordinate to a black or white piece depending on whose turn it is)
      - Set turnBlack to the opposite of its current state
  - Except (if code in try block creates an error):
    - Print a message saying the user input is not valid

### Instructions:

- After running the program, black starts with the first turn.
- Black pieces are represented with the filled circle, and white pieces are the open/unfilled circle
- Pieces can be placed on the board by typing in a coordinate similar to chess coordinates.
  - For the coordinate system, rows are numbered 1-9 going bottom to top, and columns are letters A through I going from left to right.
  - For example, typing in “a1” (without the quotes, lowercase or uppercase does not matter) after the prompt to enter coordinates will place a marker on the bottom left corner of the board, which is where coordinate A1 is located.
- Black and white alternate turns.

- If you type something that is not a valid coordinate, the program will ask you to type another coordinate again and your turn will not be skipped.
- If the coordinate you type in already has a piece on it, the program will let you know, you can type in another coordinate and your turn will not be skipped.
- To exit the program, type "stop" or "Stop" (without the quotes) when prompted to enter a coordinate.