

DOTS & BOXES

Features:

- 2 levels : Beginner and Expert
- 2 modes : Player vs Player or Player vs Computer
- Undo steps anytime in the game **even in a loaded game**
- Redo steps anytime in the game **even in a loaded game**
- Computer plays with simple AI
- All the names have the same type the first letter is capital and others are lowercase letters so ranking is much better
- After game is finished you can start another one and so on

Assumption:

- While taking names w take up to 9 lower case letters and it doesn't include any other characters except letters
- While line co-ordinations in the game w take 2 numbers so we take 2 digits for X and 2 digits for Y and digits only
Exception: When user enters U or R or S it executes the function
- After loading a saved game and the loaded game is finished we clear the saved file so it won't be saved all the time
- Computer plays with a simple AI but if he doesn't find the best line he plays randomly and points that computer chooses enters in check function also to validate them

Data Structure:

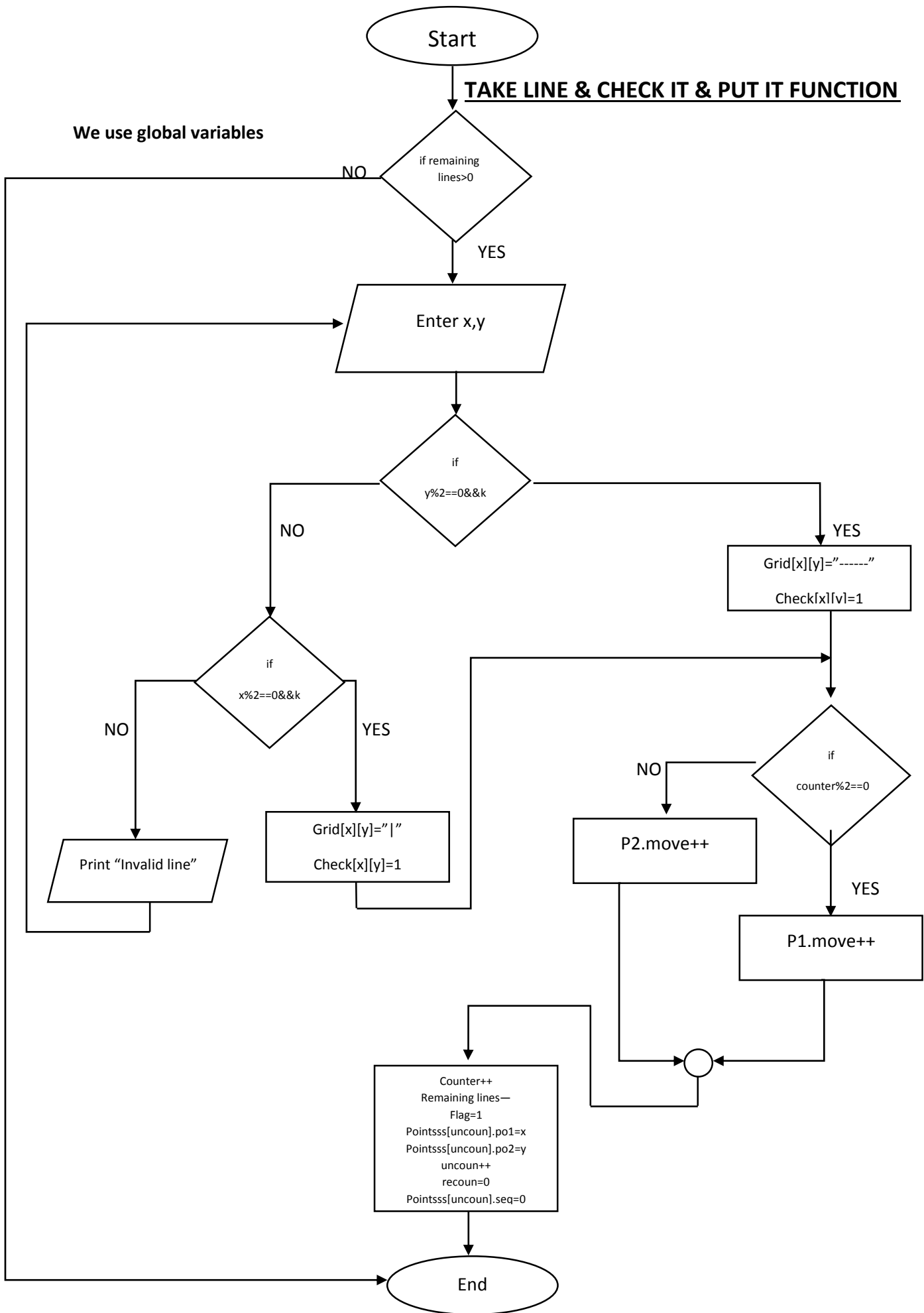
- A structure for each player containing his name, score and moves
- An array of structure for saving each line played so we can undo and redo them
- 3 files for save and load
- 1 file for ranking
- An array of structure for the top 10 to store and sort names and scores in it
- An array of strings for the grid and lines and boxes
- An array of flags to check for empty line spaces and empty boxes

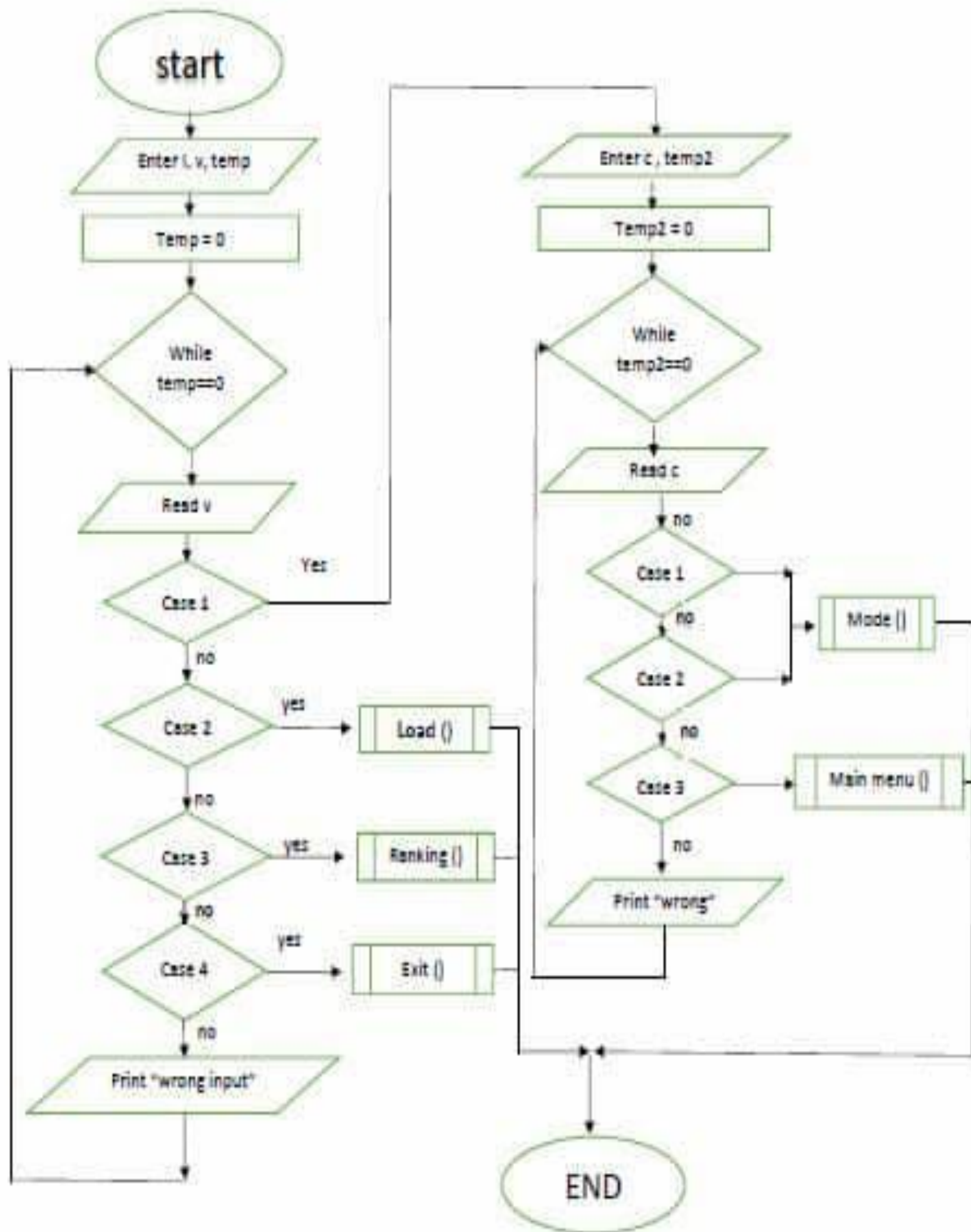
Important Functions:

- Function that validate each point and put lines
- Function that take 2 digits for x and 2 for y
- Reset game function
- Save and load function

References:

- We copied go to xy function





END GAME FUNCTION

Check 2*2 or 5*5

- If 2*2 check if draw
 - If draw don't take names and print "Draw"
- If computer's score > player's score don't take names and print "You lose"
- If player 1 score > player 2 score take the name & score of player 1 and put them in ranking file and print "Player 1 wins"
- Else take the name & score of player 2 and put them in ranking file and print "Player 2 wins"

Make the user choose to go back to Main Menu or to view Top 10 or Exit the game.