Planning

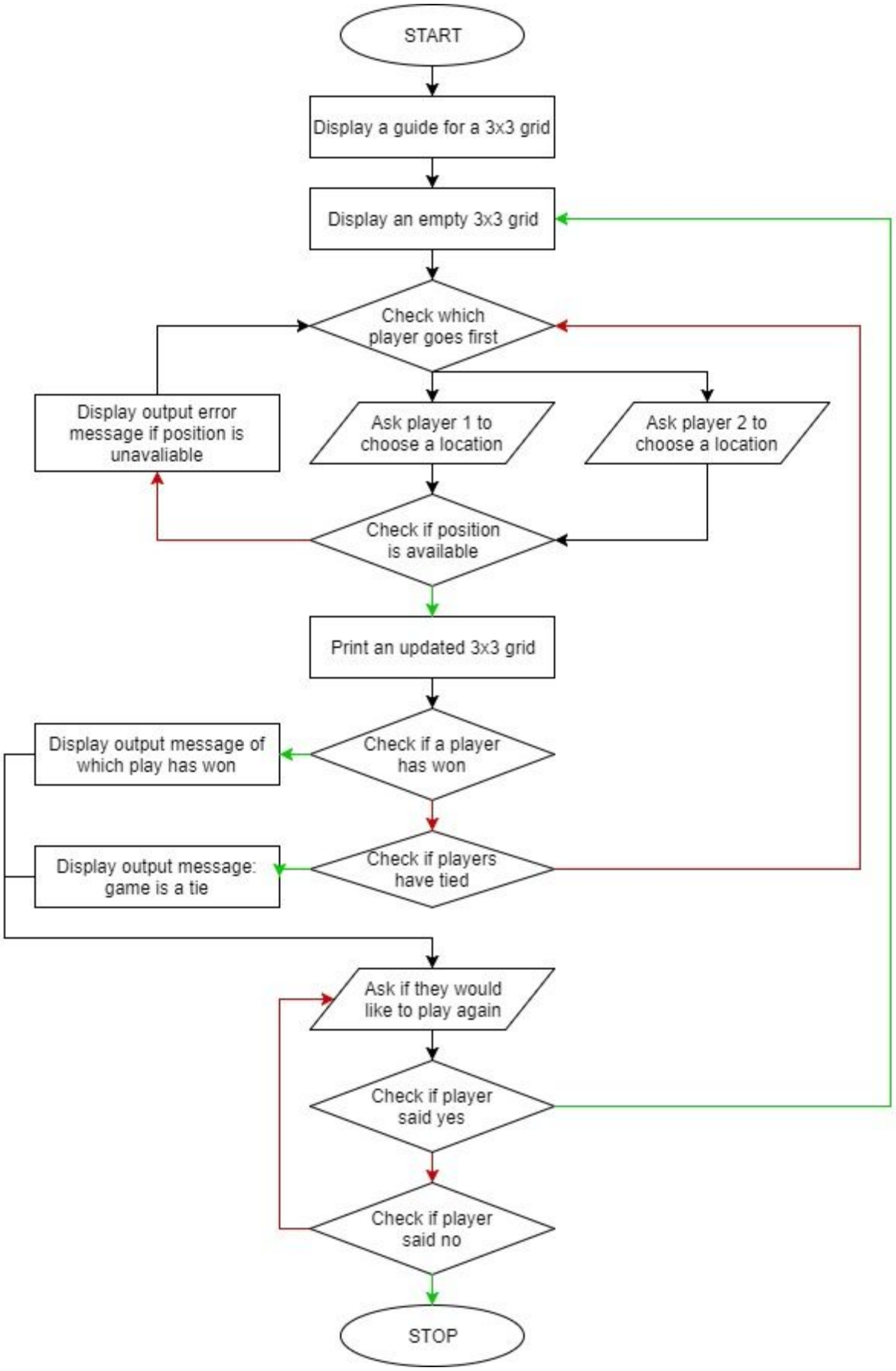
RULES / ASSUMPTIONS:

- There are two players and they are able to choose a character from "X" or "O" that they would like to represent.
- The two players are given or make a 3x3 grid.
- These two players will take turns filling out every free space.
- The game will stop if the same character is seen horizontally, vertically, diagonally, or when every space is no longer available (when no one wins, this is called a draw)

PLAN / VARIABLES:

- Grid (2D list)
- Mark/character ("X" or "O")
- Player ("1" or "2")

ALGORITHM / FLOWCHART: https://goo.gl/JnythU


START
Display a guide for a 3x3 grid
Display an empty 3x3 grid
Check which player goes first
Display output error message if position is unavaliable
Ask player 1 to choose a location
Ask player 2 to choose a location
Check if position is available
Print an updated 3x3 grid
Display output message of which play has won
Check if a player has won
Display output message: game is a tie
Check if players have tied
Ask if they would like to play again
Check if player said yes
Check if player said no
STOP

TEST PLAN:

Test Num	Description of Test	Test data	Expected outcome
1	The game will check if a player has won: to do this, it will see if the same character is displayed horizontally, vertically, diagonally.	Have player one place an "X" in the same column.	The game will say that player one has won.
2	The game will check if a position is already taken on the board.	Have player two place a character in the same place as player one.	The game will print an error message, stating that the position is already taken and so, the player can try again.
3	The game will check if the user's input for the location of their mark/character is out of range: this is because the only positions available are between 1 and 9.	Have a player type "15".	The game will print an error message, stating that the index is out of range and so, the player can try again.
4	The game will check if the user's input for the location of their mark/character is an erroneous data type as an index.	Have a player type a letter or word, such as: "Hello".	The game will print an error message, stating that the index is an erroneous data type and so, the player can try again.
5	The game will check if the user's input to play again is invalid.	Have a player type a number instead of "Y" or "N".	The game will print an error message, stating that the user's input is invalid and so, the player can try again.

PLANNING	Total For Task = 10 Marks