GameScreen + makePosition(IGameBoard, Scanner, char): BoardPosition

BoardPosition

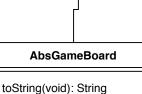
- row: int [1] - column: int [1]

+ BoardPosition(int,int): BoardPosition + getRow(void): int + getColumn(void): int + equals(BoardPosition): boolean + toString(void): String

GameBoard

- board: char[1..N]

- numRow: int[1] numCol: int[1] numToWin: int[1]
- + Gameboard(void): GameBoard + checkSpace(BoardPosition): boolean
- + placeMarker(Boardposition, char): void
- + checkForWinner(BoardPosition): boolean
- + checkForDraw(void): boolean
- + checkHorizontalWin(BoardPosition, char): boolean
- + checkVerticalWin(BoardPosition, char): boolean
- + checkDiagonalWin(BoardPosition, char): boolean
- + isPlayerAtPos(BoardPosition, char): boolean
- + whatsAtPos(BoardPosition): char
- + getNumRows(void): int
- + getNumColumns(void): int
- + getNumToWin(void): int



GameBoardMem

- board: HashMap[1] - numRow: int[1] - numCol: int[1] -numToWin: int[1]
- + Gameboard(void): GameBoard + checkSpace(BoardPosition): boolean
- + placeMarker(Boardposition, char): void
- + checkForWinner(BoardPosition): boolean
- + checkForDraw(void): boolean
- + checkHorizontalWin(BoardPosition, char): boolean
- + checkVerticalWin(BoardPosition, char): boolean
- + checkDiagonalWin(BoardPosition, char): boolean
- + isPlayerAtPos(BoardPosition, char): boolean
- + whatsAtPos(BoardPosition): char
- + getNumRows(void): int
- + getNumColumns(void): int
- + getNumToWin(void): int

AbsGameBoard

toString(void): String

«interface» **IGameBoard**

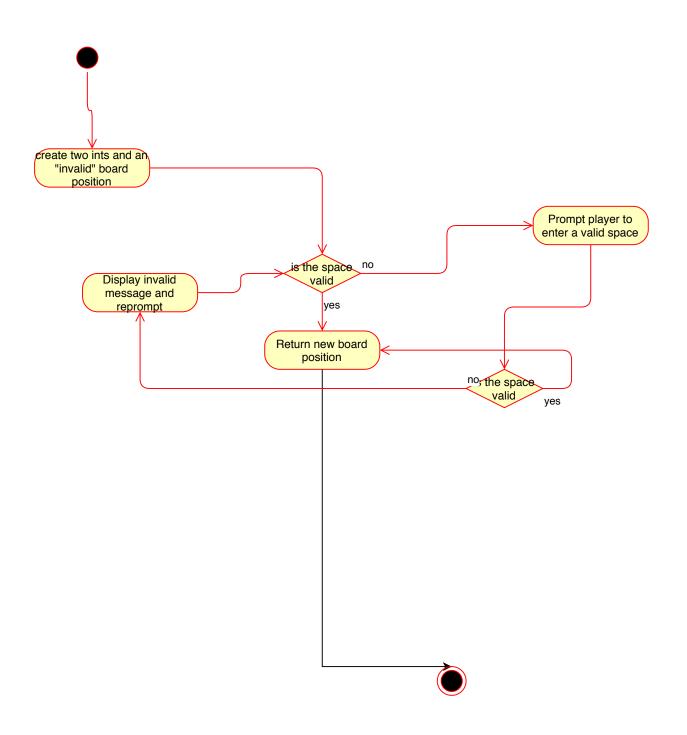
- + checkSpace(BoardPosition): boolean
- + placeMarker(Boardposition, char): void + checkForWinner(BoardPosition): boolean
- + checkForDraw(void): boolean
- + checkHorizontalWin(BoardPosition, char): boolean
- + checkVerticalWin(BoardPosition, char): boolean
- + checkDiagonalWin(BoardPosition, char): boolean
- + isPlayerAtPos(BoardPosition, char): boolean + whatsAtPos(BoardPosition): char + getNumRows(void): int

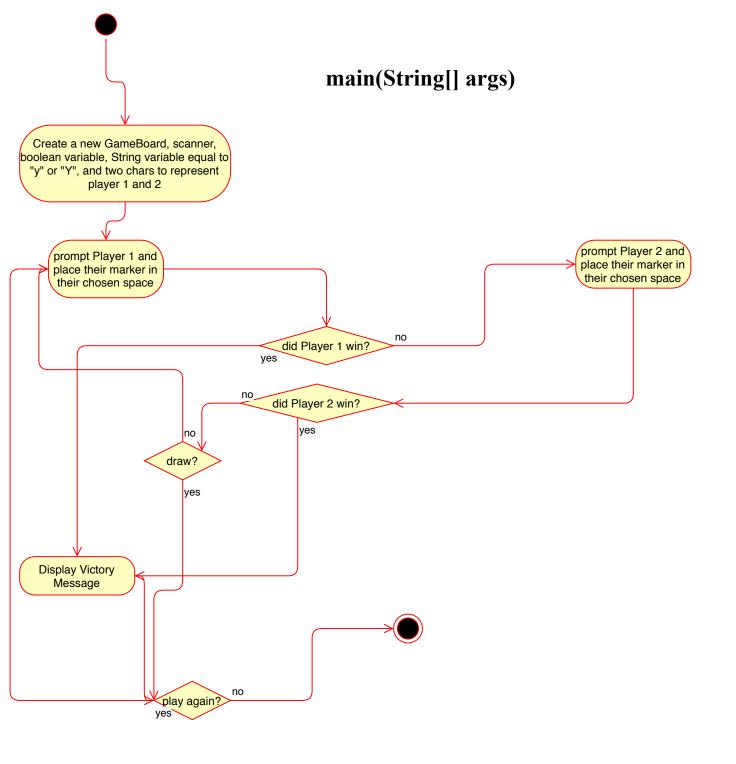
- + getNumColumns(void):int + getNumToWin(void): int

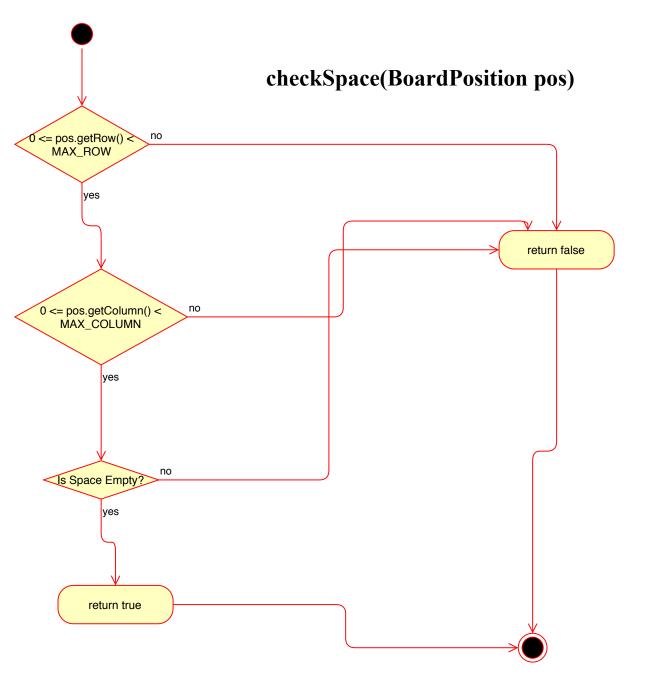
TicTacToeController

- curGame: IGameBoard [1] screen: TicTacToeView [1] + MAX_PLAYERS: int [1] number_of_players: int [1] playerMarker: char [10] playerNumber: int[1] winnerFound: boolean[1]
- + TicTacToeController(IGameBoard,TicTacToeView, int): TicTacToeController + processButtonClick(int,int): void newGame(void): void

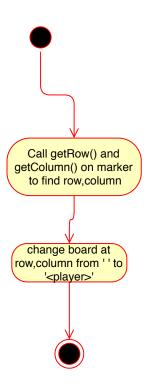
makePosition(void)

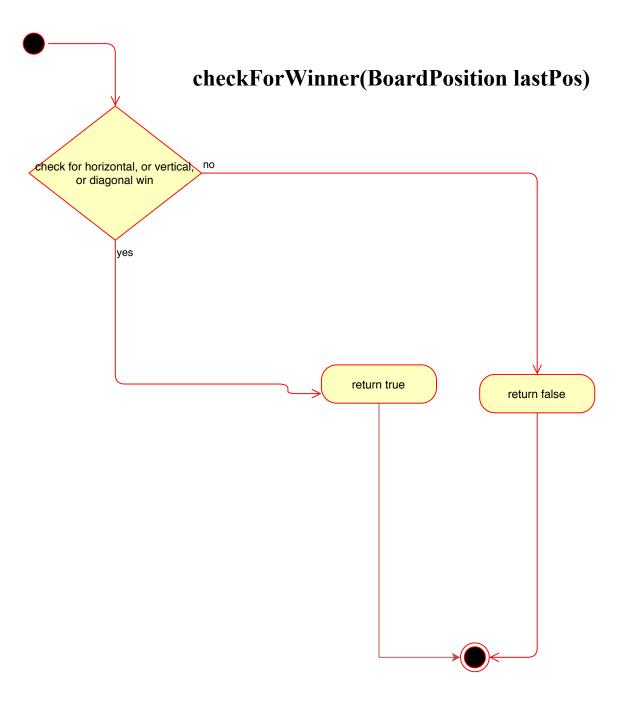


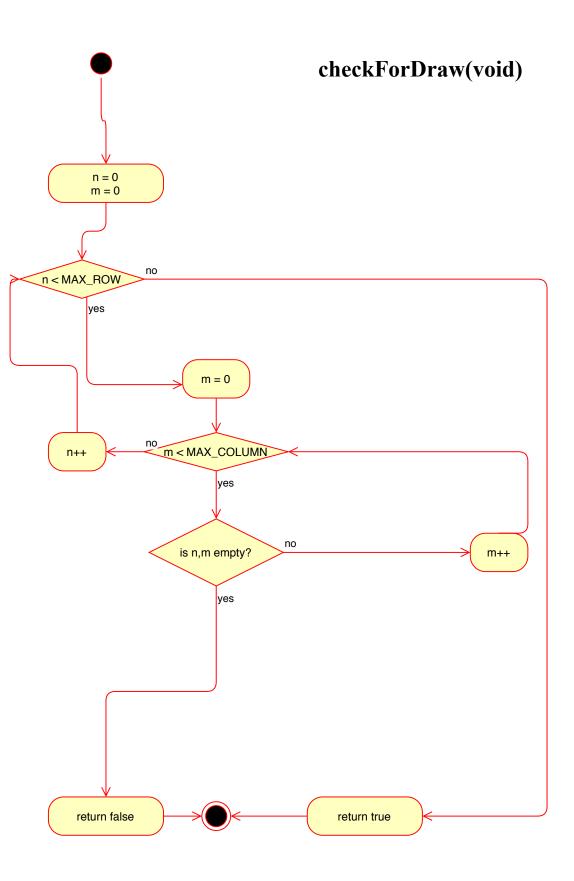




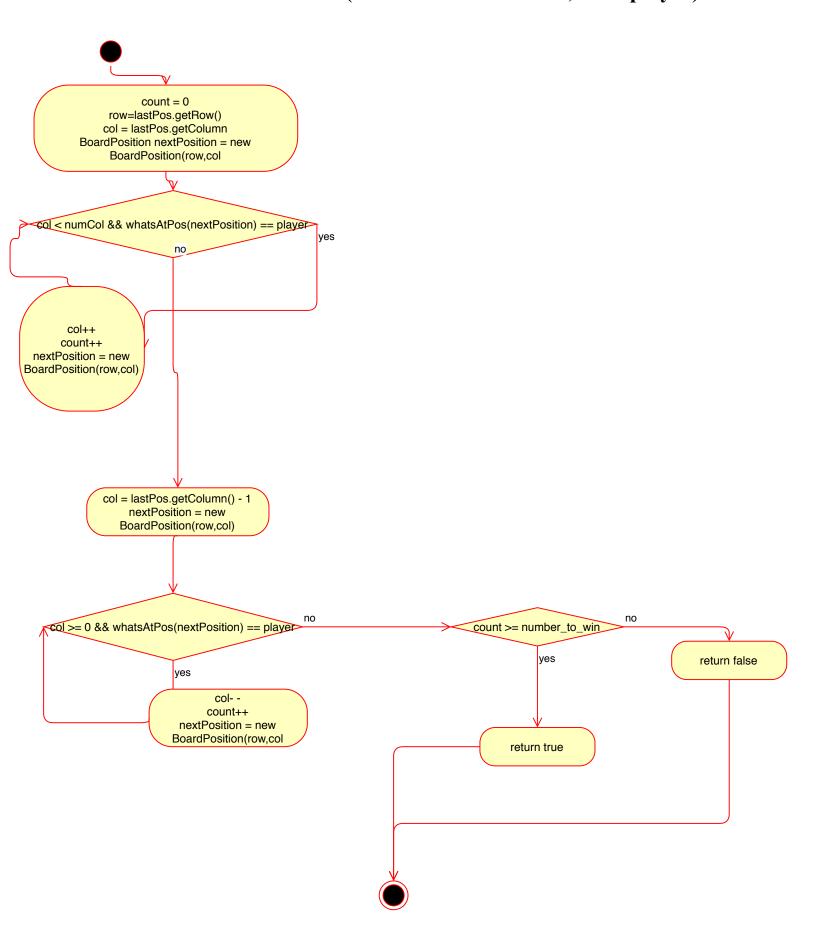
placeMarker(BoardPosition marker, char player)



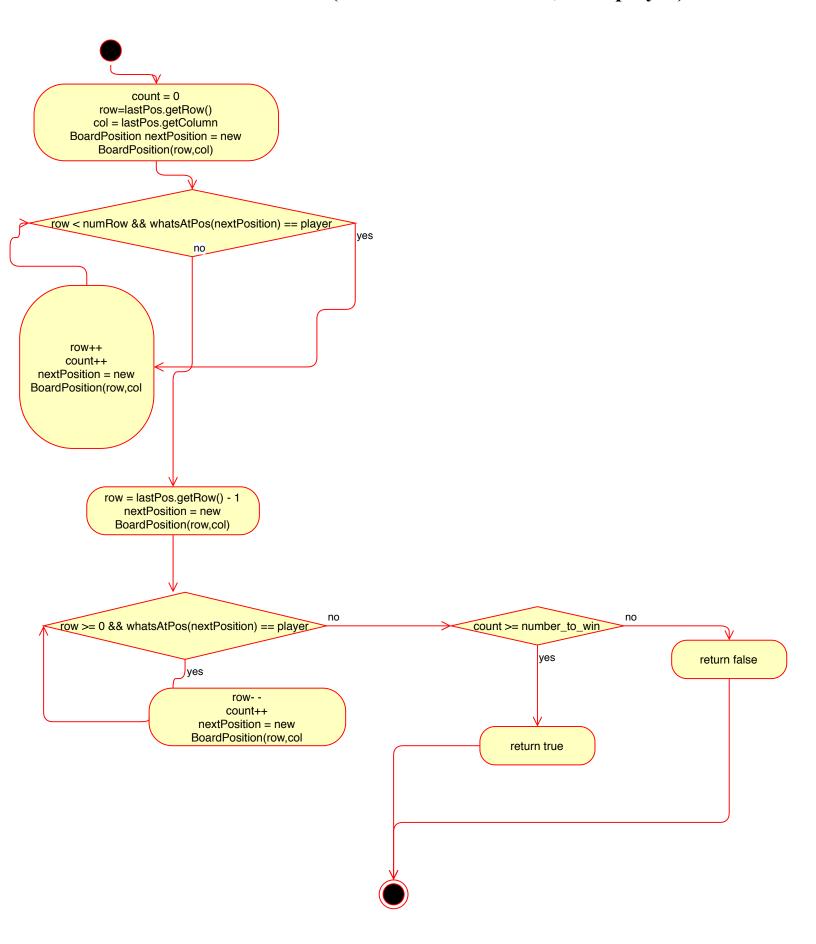




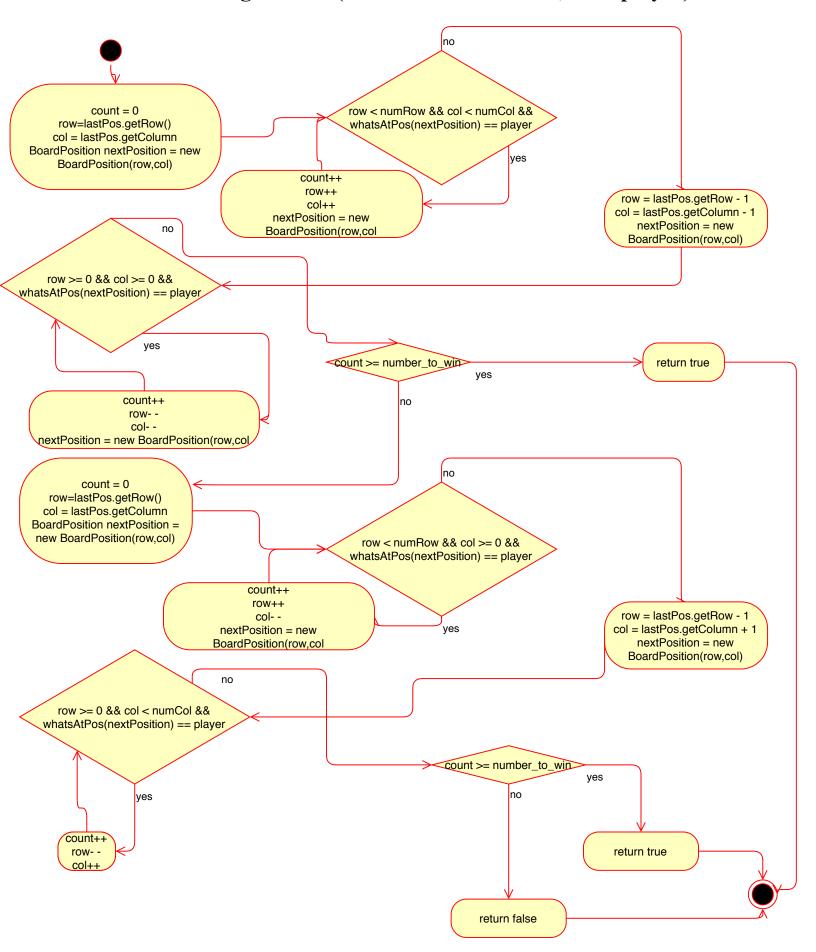
checkHorizontalWin(BoardPosition lastPos, char player)



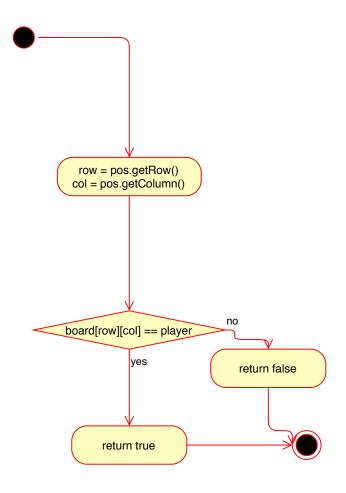
checkVerticalWin(BoardPosition lastPos, char player)



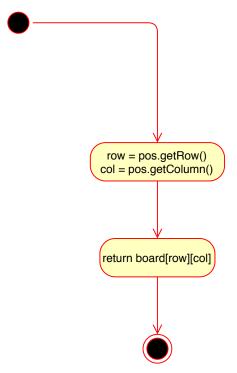
checkDiagonalWin(BoardPosition lastPos, char player)

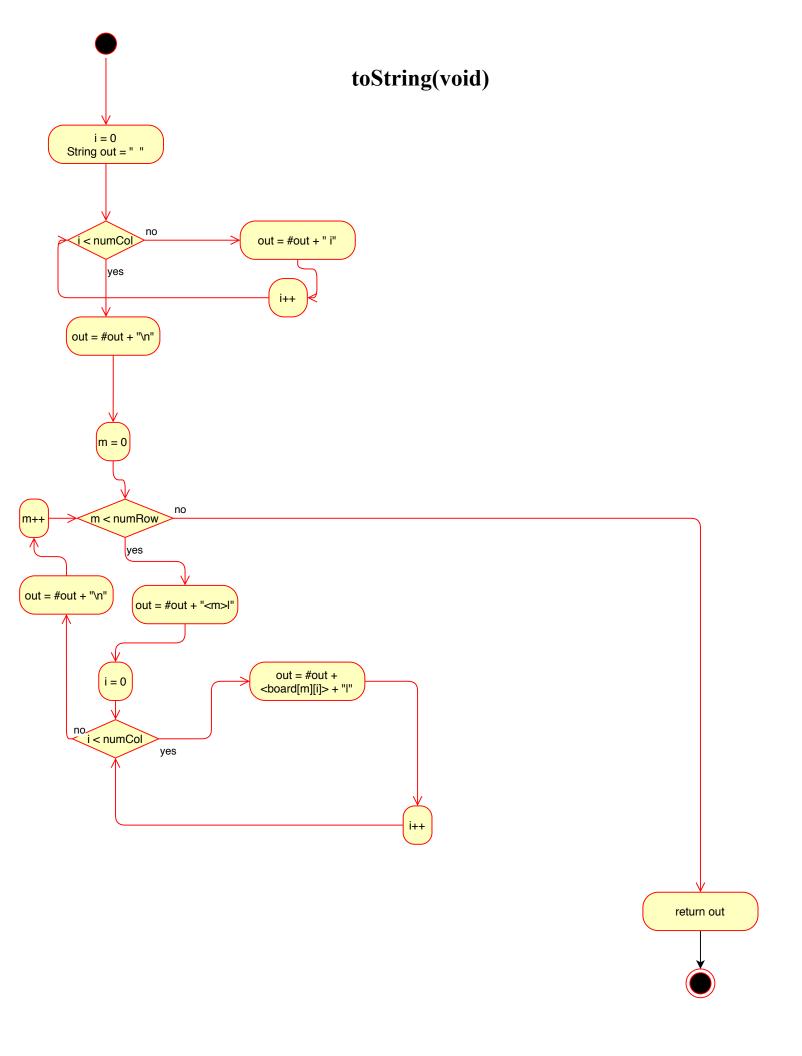


isPlayerAtPos(BoardPosition pos, char player)

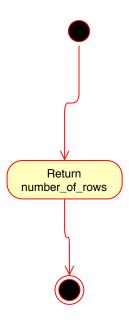


whatsAtPos(BoardPosition pos)

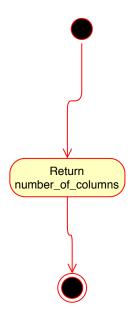




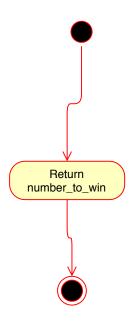
getNumRows(void)



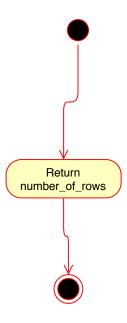
getNumColumns(void)



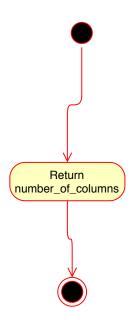
getNumToWin(void)



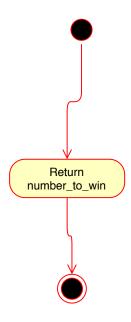
GameBoardMem.getNumRows(void)



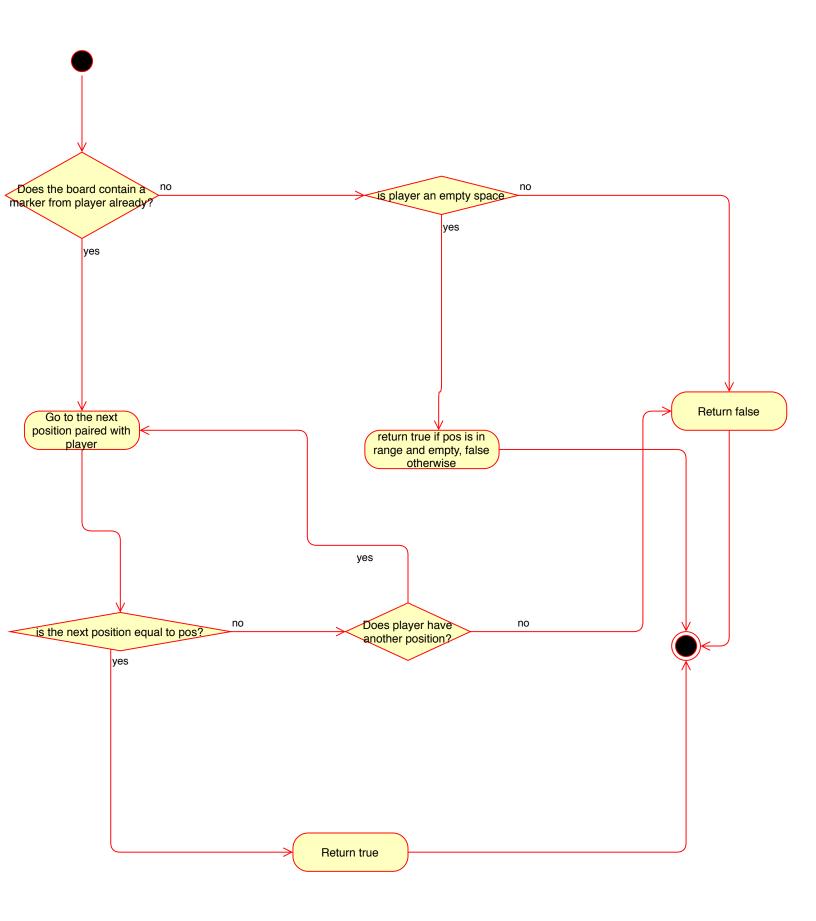
Game Board Mem.get Num Columns (void)



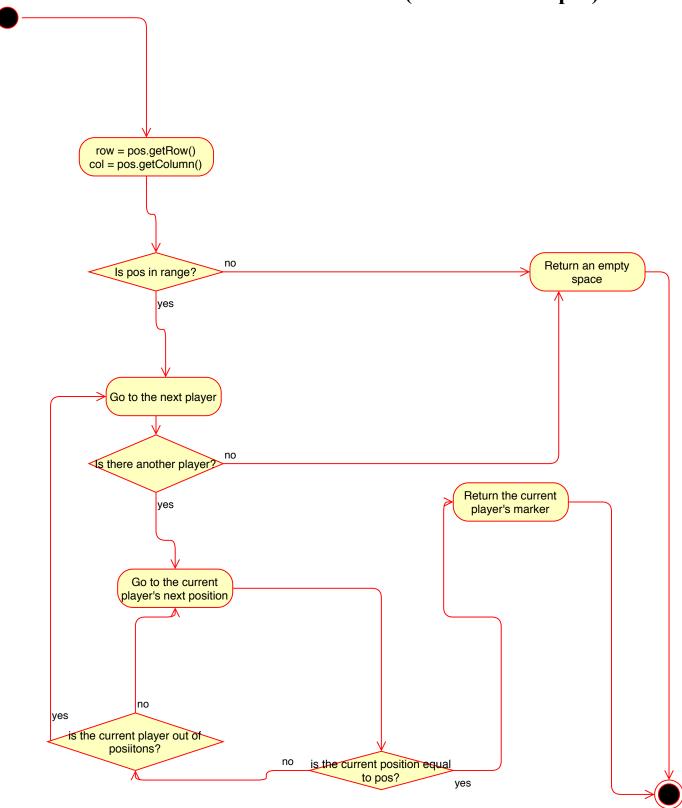
GameBoardMem.getNumToWin(void)



GameBoardMem.isPlayerAtPos(BoardPosition pos, char player)



$Game Board Mem. whats At Pos (Board Position\ pos)$



processButtonClick(int row, int col)

