LAB 1 - Implement Tic-Tac-Toe Game

Code

```python
def filled(board):
    for row in board:
        if "-" in row:
            return False
    return True


def print_board(board):
    for row in board:
        print(" | ".join(row))
def check_win(board):
  for row in board:
    if row[0] == row[1] == row[2] != "-":
      return True
  for col in range(3):
    if board[0][col] == board[1][col] == board[2][col] != "-":
      return True
  for diag in range(2):
    if board[0][0] == board[1][1] == board[2][2] != "-" or board[0][2] ==
board[1][1] == board[2][0] != "-":
      return True
  return False
def start_game():
  board = [["-"] * 3 for _ in range(3)]
  player = 1
  while True:
    print_board(board)
    print("Player " + str(player) + "'s turn.")
    print("Enter your move (row, col):")
    move = input()
    row, col = map(int, move.split(","))
    if row>2 or col>2 or board[row][col] != "-" :
      print("Invalid move. Try again.")
      continue
    board[row][col] = "X" if player == 1 else "O"
    if check_win(board):
      print_board(board)
      print(f"{player} wins!")
      break
    if filled(board):
      print_board(board)
```

```python
        print("It's a tie!")
        break
    player = 2 if player == 1 else 1
start_game()
```

Output

```
- | - | -
- | - | -
- | - | -
Player 1's turn.
Enter your move (row, col):
3,3
Invalid move. Try again.
- | - | -
- | - | -
- | - | -
Player 1's turn.
Enter your move (row, col):
0,1
- | X | -
- | - | -
- | - | -
Player 2's turn.
Enter your move (row, col):
0,1
Invalid move. Try again.
- | X | -
- | - | -
- | - | -
Player 2's turn.
Enter your move (row, col):
0,2
- | X | O
- | - | -
- | - | -
Player 1's turn.
Enter your move (row, col):
1,1
- | X | O
- | X | -
- | - | -
Player 2's turn.
Enter your move (row, col):
0,2
Invalid move. Try again.
- | X | O
- | X | -
- | - | -
Player 2's turn.
Enter your move (row, col):
2,2
- | X | O
- | X | -
- | - | O
Player 1's turn.
Enter your move (row, col):
2,1
- | X | O
- | X | -
- | X | O
1 wins!
```

```
- | - | -
- | - | -
- | - | -
Player 1's turn.
Enter your move (row, col):
0,0
X | - | -
- | - | -
- | - | -
Player 2's turn.
Enter your move (row, col):
0,1
X | O | -
- | - | -
- | - | -
Player 1's turn.
Enter your move (row, col):
0,2
X | O | X
- | - | -
- | - | -
Player 2's turn.
Enter your move (row, col):
1,1
X | O | X
- | O | -
- | - | -
Player 1's turn.
Enter your move (row, col):
1,0
X | O | X
X | O | -
- | - | -
Player 2's turn.
Enter your move (row, col):
1,2
X | O | X
X | O | O
- | - | -
Player 1's turn.
Enter your move (row, col):
2,2
X | O | X
X | O | O
- | - | X
Player 2's turn.
Enter your move (row, col):
2,0
X | O | X
X | O | O
O | - | X
Player 1's turn.
Enter your move (row, col):
2,1
It's a tie!
```

```
- | - | -
- | - | -
- | - | -
Player 1's turn.
Enter your move (row, col):
3,3
Invalid move. Try again.
- | - | -
- | - | -
- | - | -
Player 1's turn.
Enter your move (row, col):
0,1
- | X | -
- | - | -
- | - | -
Player 2's turn.
Enter your move (row, col):
0,1
Invalid move. Try again.
- | X | -
- | - | -
- | - | -
```