```python
import itertools

def win(current_game):

    def all_same(l):
        if l.count(l[0]) == len(l) and l[0] != 0 :
            return True
        else:
            return False


    # Horizontal Win
    for row in game:
        print(row)
        if all_same(row):
            print(f"Player {row[0]} is the winner horizontally (-)!")
            return True

    # Diagonal Win
    cols = reversed(range(len(game)))
    rows = range(len(game))
    diags = []
    for col, row in zip(cols,rows):
        diags.append(game[row][col])
    if all_same(diags):
        print(f"Player {diags[0]} is the winner Diagonally (/)!")
        return True

    diags = []
    for ix in range(len(game)):
        diags.append(game[ix][ix])
    if all_same(diags):
        print(f"Player {diags[0]} is the winner Diagonally (\\)!")
        return True


    # Vertical Win
    for col in range(len(game)):
        check = []

        for row in game:
            check.append(row[col])

        if all_same(check):
            print(f"Player {check[0]} is the winner vertically (|)!")
            return True

    return False


def gameboard(game_map,player=0, row=0, column=0, just_display = False):
    try:
        if game_map[row][column] != 0:
            print("This position is occupied! Choose another.")
            return game_map, False
        print("   "+"   ".join([str(i) for i in range(len(game_map))]))
        if not just_display:
            game_map[row][column] = player
        for count, row in enumerate(game_map):
            print(count, row)
        return game_map, True

    except IndexError as e:
        print("Error: Did you input row/column as 0 1 or 2?", e)
        return game_map, False
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        except Exception as e:
            print("Something went very wrong!", e)
            return game_map, False

play = True
players = [1, 2]
while play:
    game = [[0,0,0],
            [0,0,0],
            [0,0,0]]

    game_won = False
    game, _ = gameboard(game, just_display = True)
    player_choice = itertools.cycle([1, 2])
    while not game_won:
        current_player = next(player_choice)
        print(f"Current Player: {current_player}")
        played = False

        while not played:
            column_choice = int(input("What column do you want to play? (0, 1, 2): "))
            row_choice =  int(input("What row do you want to play? (0, 1, 2): "))
            game, played = gameboard(game, current_player, row_choice, column_choice)

        if win(game):
            game_won = True
            again = input("The Game is over would you like to play again? (y/n) ")
            if again.lower() == "y":
                print("Restarting")
            elif again.lower() == "n":
                print("Byeeeeee")
                play = False
            else:
                print("Not a valid input, soo....? see you later aligator :P ")
                play = False


#game = gameboard(game, just_display = True)
#game = gameboard(game, player = 1, row = 2, column = 1)
```

```
   0  1  2
0 [0, 0, 0]
1 [0, 0, 0]
2 [0, 0, 0]
Current Player: 1
What column do you want to play? (0, 1, 2): 1
What row do you want to play? (0, 1, 2): 1
   0  1  2
0 [0, 0, 0]
1 [0, 1, 0]
2 [0, 0, 0]
[0, 0, 0]
[0, 1, 0]
[0, 0, 0]
Current Player: 2
What column do you want to play? (0, 1, 2): 1
What row do you want to play? (0, 1, 2): 1
This position is occupied! Choose another.
What column do you want to play? (0, 1, 2): 2
What row do you want to play? (0, 1, 2): 0
   0  1  2
0 [0, 0, 2]
1 [0, 1, 0]
```

```
2 [0, 0, 0]
[0, 0, 2]
[0, 1, 0]
[0, 0, 0]
Current Player: 1
What column do you want to play? (0, 1, 2): 0
What row do you want to play? (0, 1, 2): 0
   0  1  2
0 [1, 0, 2]
1 [0, 1, 0]
2 [0, 0, 0]
[1, 0, 2]
[0, 1, 0]
[0, 0, 0]
Current Player: 2
What column do you want to play? (0, 1, 2): 1
What row do you want to play? (0, 1, 2): 0
   0  1  2
0 [1, 2, 2]
1 [0, 1, 0]
2 [0, 0, 0]
[1, 2, 2]
[0, 1, 0]
[0, 0, 0]
Current Player: 1
What column do you want to play? (0, 1, 2): 2
What row do you want to play? (0, 1, 2): 2
   0  1  2
0 [1, 2, 2]
1 [0, 1, 0]
2 [0, 0, 1]
[1, 2, 2]
[0, 1, 0]
[0, 0, 1]
Player 1 is the winner Diagonally (\)!
The Game is over would you like to play again? (y/n) n
Byeeeeee
```

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: