

LAPORAN PROJECT AKHIR SEMESTER
MATA KULIAH SISTEM OPERASI



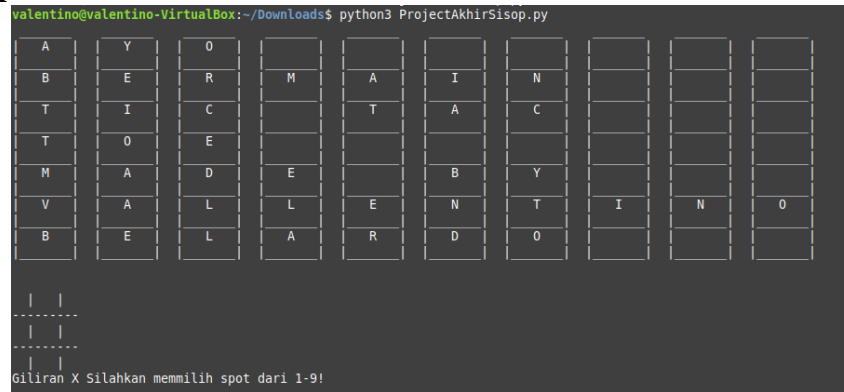
PROGRAM PERMAINAN TIC TAC TOE

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PROGRAM STUDI SAINS DATA
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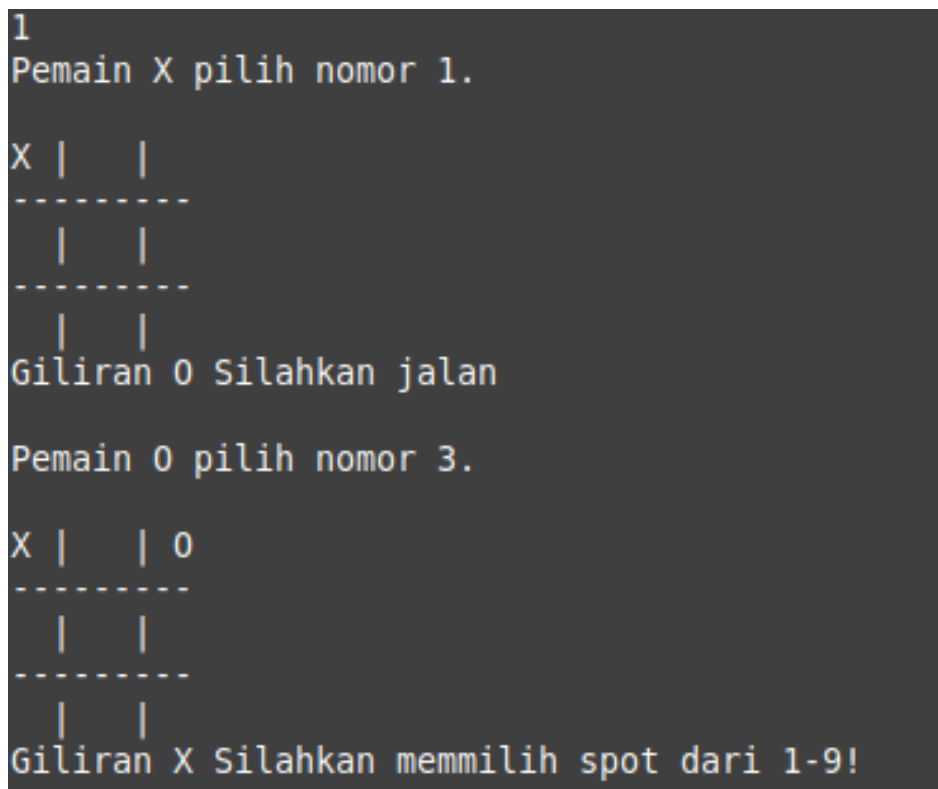
1. Tampilan Halaman Utama



Gambar 1. Tampilan Utama Permainan Tic Tac Toe

Pada Tampilan Utama langsung terdapat kotak permainan tic tac toe. Pada permainan ini, pemain X adalah user dan pemain O adalah komputer.

2. User dan komputer memilih spot



Gambar 2. User dan Komputer memilih spot

Gambar 2 adalah tampilan user dan komputer diminta untuk memilih spot. User memilih spot nomor 1. Sedangkan, komputer memilih spot nomor 3.

3. Jika spot terisi

```
X |   | O
-----
|   |
-----
|   |
Giliran X Silahkan memmilih spot dari 1-9!
3
Itu sudah diisi, coba pilih lagi!
█
```

Gambar 3. User memilih spot yang sudah terisi

Gambar 3 adalah tampilan user diminta untuk memilih spot lagi karena spot yang dipilih sudah terisi sebelumnya oleh pemain O (komputer).

4. Jika user/komputer dinyatakan sebagai pemenang

```
X |   | O
-----
X |   | O
-----
|   |
Giliran X Silahkan memmilih spot dari 1-9!
7
Pemain X pilih nomor 7.

X |   | O
-----
X |   | O
-----
X |   |
X adalah juara
valentino@valentino-VirtualBox:~/Downloads$
```

4.a

```
X | O | X
-----
X | O | X
-----
O |   |
Giliran O Silahkan jalan

Pemain O pilih nomor 8.

X | O | X
-----
X | O | X
-----
O | O |
O adalah juara
```

4.b

Gambar 4. Pemain yang dinyatakan pemenang

Gambar 4 adalah tampilan yang menyatakan salah satu pemain memenangi permainan (bisa pemain X/O). Pemenang ditentukan jika memiliki satu garis horizontal, atau vertical, atau diagonal. Pada gambar 4.a, Pemain X dinyatakan sebagai pemenang karena memiliki satu garis horizontal (spot 1,4,7) dan gambar 4.b Pemain O dinyatakan sebagai pemenang karena memiliki satu garis horizontal (spot 2,5,8).

5. Permainan dinyatakan seri/imbang

```
X | 0 | 0
-----
0 | X | X
-----
X |   | 0
Giliran X Silahkan memilih spot dari 1-9!
8
Pemain X pilih nomor 8.

X | 0 | 0
-----
0 | X | X
-----
X | X | 0

Imbang
valentino@valentino-VirtualBox:~/Downloads$
```

Gambar 5. Permainan seimbang/seri

Gambar 5 adalah tampilan jika dalam permainan dinyatakan imbang/seri. permainan diatas imbang dikarenakan dari salah satu pemain tidak ada yang memiliki salah satu garis yang horizontal, atau vertical, atau diagonal dan permainan berakhir.

link github:

https://github.com/ValentinoBelardo/21083010109/blob/master/Finpro_Pemainan%20Tic%20Tac%20Toe_A.py

Script:

```
from ast import Continue
from pickle import TRUE
```

```
print(" _____", " _____", " _____", " _____", " _____", " _____", " _____", " _____", " _____", " _____", " _____", " _____")
print("| A |", "| Y |", "| O |", "|   |", "|   |", "|   |", "|   |", "|   |", "|   |", "|   |", "|   |", "|   |")
print("|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|")
print("| B |", "| E |", "| R |", "| M |", "| A |", "| I |", "| N |", "|   |", "|   |", "|   |", "|   |")
print("|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|")
print("| T |", "| I |", "| C |", "|   |", "|   |", "| T |", "| A |", "| C |", "|   |", "|   |", "|   |")
print("|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|")
print("| T |", "| O |", "| E |", "|   |", "|   |", "|   |", "|   |", "|   |", "|   |", "|   |", "|   |")
print("|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|")
print("| M |", "| A |", "| D |", "| E |", "|   |", "|   |", "| B |", "| Y |", "|   |", "|   |", "|   |")
print("|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|")
print("| V |", "| A |", "| L |", "| L |", "| E |", "| N |", "| T |", "| I |", "| N |", "| O |")
print("|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|")
print("| B |", "| E |", "| L |", "| A |", "| R |", "| D |", "| O |", "|   |", "|   |", "|   |")
print("|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|", "|_____|")
print("\n")
```

```
theBoard={'1': '', '2': '', '3': '',
          '4': '', '5': '', '6': '',
          '7': '', '8': '', '9': ''}
```

```
the_game_is_on=True
winner=None
```

```

turn='X'
options=['1', '2', '3', '4', '5', '6', '7', '8', '9']
import sys

def gaming_now():
    printBoard()
    while the_game_is_on:

        current_turn()

        check_if_game_over()

        change_turn()

    if winner == 'X' or winner == 'O':
        print("\n" + winner + " adalah juara          ")
    else:
        print("\nImbang          ")

def printBoard():
    print(theBoard['1']+ ' | ' +theBoard['2']+ ' | ' +theBoard['3'])
    print('-----')
    print(theBoard['4']+ ' | ' +theBoard['5']+ ' | ' +theBoard['6'])
    print('-----')
    print(theBoard['7']+ ' | ' +theBoard['8']+ ' | ' +theBoard['9'])

def current_turn():
    move=None
    import random
    if turn == 'X':
        print("Giliran " + turn + " Silahkan memmilih spot dari 1-9!")
        try:
            move=input()
        except KeyboardInterrupt:
            True
        while move not in theBoard.keys() or theBoard[move]!=' ':
            print("Itu sudah diisi," + ' coba pilih lagi!')
            try:
                move=input()
            except KeyboardInterrupt:
                continue

    elif turn=='O':
        print("Giliran " + turn + " Silahkan jalan\n")
        move=random.choice(options)
        while move not in theBoard.keys() or theBoard[move]!=' ':
            move = random.choice(options)

```

```
print('Pemain ' + turn + ' pilih nomor ' + move + '.\n')
theBoard[move]=turn
printBoard()
```

```
def check_if_game_over():
    global the_game_is_on
    check_winner()
    if check_tie():
        the_game_is_on = False
```

```
def check_winner():
    global winner
    row_winner=check_rows()
    column_winner=check_columns()
    diagonal_winner=check_diagonals()
    if row_winner:
        winner=row_winner
    elif column_winner:
        winner=column_winner
    elif diagonal_winner:
        winner=diagonal_winner
    else:
        winner=None
```

```
def check_rows():
    global the_game_is_on
    row_1=theBoard['1']==theBoard['2']==theBoard['3']!=' '
    row_2=theBoard['4']==theBoard['5']==theBoard['6']!=' '
    row_3=theBoard['7']==theBoard['8']==theBoard['9']!=' '
    if row_1 or row_2 or row_3:
        the_game_is_on = False
    if row_1:
        return theBoard['1']
    elif row_2:
        return theBoard['4']
    elif row_3:
        return theBoard['5']
    else:
        return None
```

```
def check_columns():
    global the_game_is_on
    column_1=theBoard['1']==theBoard['4']==theBoard['7']!=' '
    column_2=theBoard['2']==theBoard['5']==theBoard['8']!=' '
    column_3=theBoard['3']==theBoard['6']==theBoard['9']!=' '
    if column_1 or column_2 or column_3:
        the_game_is_on=False
    if column_1:
```

```
        return theBoard['1']
elif column_2:
    return theBoard['2']
elif column_3:
    return theBoard['3']
else:
    return None
```

```
def check_diagonals():
    global the_game_is_on
    dig_1=theBoard['1']==theBoard['5']==theBoard['9']!=' '
    dig_2=theBoard['3']==theBoard['5']==theBoard['7']!=' '
    if dig_1 or dig_2:
        the_game_is_on = False
    if dig_1:
        return theBoard['1']
    elif dig_2:
        return theBoard['3']
    else:
        return None
```

```
def check_tie():
    if " " in theBoard.values():
        return False
    else:
        return True
```

```
def change_turn():
    global turn

    if turn=='X':
        turn='O'
    else:
        turn='X'
```

```
gaming_now()
```