

LAPORAN PROJECT AKHIR SEMESTER
MATA KULIAH SISTEM OPERASI



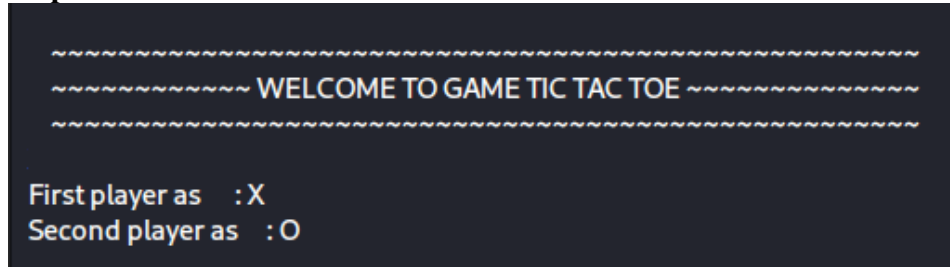
PROGRAM PERMAINAN TIC TAC TOE

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PROGRAM STUDI SAINS DATA
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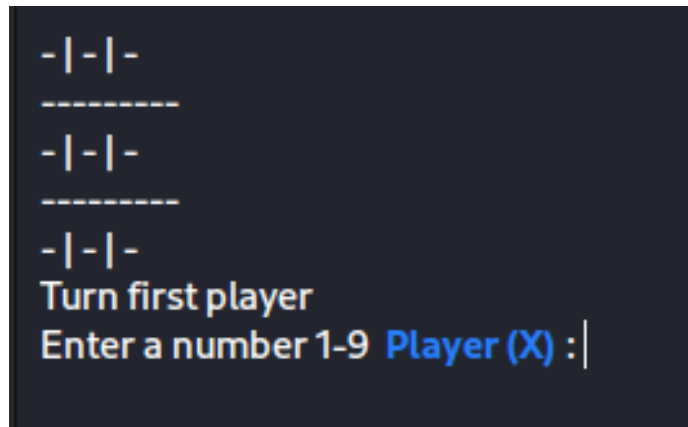
1. Tampilan Halaman Utama



Gambar 1. Tampilan Utama Halaman Permainan TicTacToe

Gambar 1 merupakan tampilan awal sebelum permainan tic tac toe dimulai. Player pertama sebagai X dan mulai memilih kotak pertama, player kedua sebagai O.

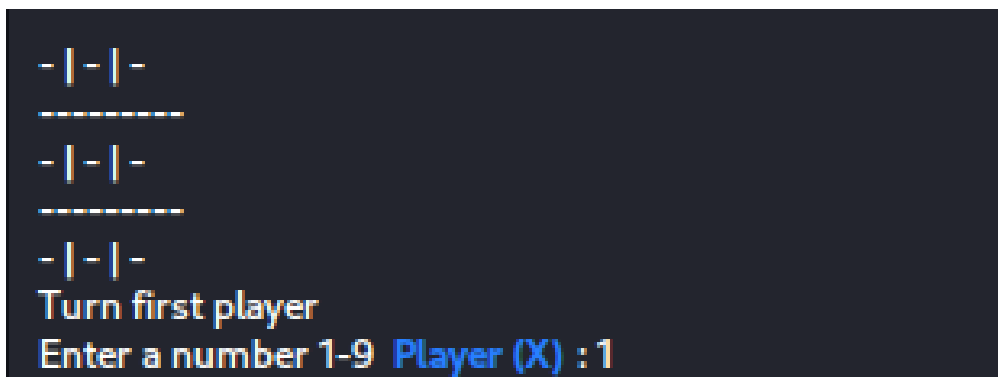
2. Tampilan Papan Permainan



Gambar 2. Papan Permainan Tic Tac Toe

Pada halaman ini ditampilkan papan kotak permainan Tic Tac Toe 3x3. Player pertama memulai permainan terlebih dahulu. User perlu mengetikkan angka 1 sampai 9 apabila kotak yang telah terisi diisi kembali maka user(pemain) diminta oleh sistem untuk menginputkan angka. Apabila salah satu player berhasil menggambar tiga simbol dalam satu deret, entah secara horizontal, vertikal, ataupun diagonal menjadi pemenang permainan. Namun, jika kedua pemain menggunakan strategi optimal, kemungkinan besar tidak akan ada pemenang karena kalian akan saling memblokir kesempatan masing-masing untuk membuat tiga simbol dalam satu deret.

3. Permainan Tic Tac Toe Berlangsung



```
X|-|-  
-----  
-|-|-  
-----  
-|-|-  
Turn second player  
Enter a number 1-9 Player (O) : 2  
X|O|-  
-----  
-|-|-  
-----  
-|-|-  
Turn first player  
Enter a number 1-9 Player (X) : 5  
X|O|-  
-----  
-|X|-  
-----  
-|-|-  
Turn second player  
Enter a number 1-9 Player (O) : 3  
X|O|O  
-----  
-|X|-  
-----  
-|-|-  
Turn first player  
Enter a number 1-9 Player (X) : 9  
The winner is X  
X|O|O  
-----  
-|X|-  
-----  
-|-|X  
🌟 Andry [master] ⚡ |
```

Gambar 3. Permainan sedang berlangsung

3. Hasil Permainan Tic Tac Toe

Dapat dilihat pada gambar 3 player pertama (X) berhasil menggambar 3 simbol secara diagonal maka game berhasil dimenangkan oleh player pertama (X) program permainan tic tac toe ini langsung berhenti.

Script Permainan Tic Tac Toe

```
print("""
~~~~~
~~~~~ WELCOME TO GAME TIC TAC TOE ~~~~~
~~~~~
""")

print("First player as : X")
print("Second player as : O\n")

board = ['-',' ',' ','-',' ','-',' ','-',' ','-'],
        ['-',' ',' ','-',' ','-',' ','-',' ','-'],
        ['-',' ',' ','-',' ','-',' ','-',' ','-']
currentPlayer = "X"
winner = None
gameRunning = True

#printing board

def printBoard(board):
    print(board[0] + " | " + board[1] + " | " + board[2])
    print("-" * 9)
    print(board[3] + " | " + board[4] + " | " + board[5])
    print("-" * 9)
    print(board[6] + " | " + board[7] + " | " + board[8])

#take player input
def playerInput(board):
    while True:
        if currentPlayer == "X":
            print("Turn first player")
            inp = int(input(f'Enter a number 1-9 \033[1;34m Player (X) \033[0;0m : '))
        else:
            print("Turn second player")
            inp = int(input(f'Enter a number 1-9 \033[1;31m Player (O) \033[0;0m : '))
        if inp >= 1 and inp <= 9 and board[inp-1] == "-":
            board[inp-1] = currentPlayer
            break
        else:
```

```

if currentPlayer == "X":
print(f'Oops! Try again! Player - \033[1;34m Player (X) \033[0;0m ! ")
else:
print(f'Oops! Try again! Player - \033[1;31m Player (O) \033[0;0m ! ")
printBoard(board)

```

```

#check for win or tie
def checkHorizontal(board):
global winner
if (board[0] == board[1] == board[2] and board[0] != "-") or (board[3] == board[4] == board[5] and board[3] != "-")
or (board[6] == board[7] == board[8] and board[6] != "-"):
winner = currentPlayer
return True
def checkRow(board):
global winner
if (board[0] == board[3] == board[6] and board[0] != "-") or (board[1] == board[4] == board[7] and board[1] != "-")
or (board[2] == board[5] == board[8] and board[2] != "-"):
winner = currentPlayer
return True
def checkDiagonal(board):
global winner
if (board[0] == board[4] == board[8] and board[0] != "-") or (board[2] == board[4] == board[6] and board[2] != "-"):
winner = currentPlayer
return True
def checkTie(board):
global gameRunning
if "-" not in board:
printBoard(board)
print("Its a tie")
gameRunning = False

```

```

def checkWin():
if checkDiagonal(board) or checkHorizontal(board) or checkRow(board):
print(f"The winner is {winner}")

```

```

#switch the player
def switchPlayer():
global currentPlayer
if currentPlayer == "X":
currentPlayer = "O"
else:
currentPlayer = "X"

```

```

#check for win or tie again

```

```
while gameRunning:  
    printBoard(board)  
    if winner != None:  
        break  
    playerInput(board)  
    checkWin()  
    checkTie(board)  
    switchPlayer()
```