**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*MAGIC MATRIX\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

def generate\_magic\_square():

n = int(input("Enter the value you want magic matrix: "))

if n%2 != 0:

magic\_square = [[0] \* n for \_ in range(n)]

num = 1

row, column = 0, n // 2

while num <= n\*n:

magic\_square[row][column] = num

print("implemention position is: ",row,",",column,end="\n")

num += 1

newrow, newcolumn = (row - 1) % n, (column + 1) % n

print("magic square: ",magic\_square)

if magic\_square[newrow][newcolumn]:

row = (row + 1) % n

else:

row, column = newrow, newcolumn

return magic\_square

else:

print("Please enter odd number to create magic matrix......")

return None

def print\_magic\_square(magic\_square):

if magic\_square:

for row in magic\_square:

for num in row:

print(num, end="\t")

print()

else:

print("No magic square generated.")

if \_\_name\_\_ == "\_\_main\_\_":

magic\_square = generate\_magic\_square()

if magic\_square:

print(f"{len(magic\_square)}X{len(magic\_square)} Magic Square with Diagonal Movement:")

print\_magic\_square(magic\_square)

**\*\*\*\*GIVEN EXPRESSION(PARENTHESIS) IS BALANCED OR NOT\*\*\*\*\*\***

**1ST METHOD:**

def is\_balanced\_or\_not(expression):

stack = []

pairs = {")": "(", "]": "[", "}": "{"}

for symbol in expression:

if symbol in "([{":

stack.append(symbol)

elif symbol in ")]}":

if not stack:

return False

elif stack[-1] != pairs[symbol]:

return False

stack.pop()

return len(stack) == 0

expression = input("Enter an expression: ")

if is\_balanced\_or\_not(expression):

print("The expression is balanced.....")

else:

print("The expression is not balanced.......")

**2nd METHOD:**

def is\_balanced\_or\_not(expression):

stack = []

pairs = {")": "(", "]": "[", "}": "{"}

for symbol in expression:

if symbol in "([{":

stack.append(symbol)

elif symbol in ")]}":

if not stack:

return False

elif stack[-1] != pairs[symbol]:

return False

stack.pop()

return len(stack) == 0

expression = input("Enter an expression: ")

if is\_balanced\_or\_not(expression):

print("The expression is balanced.....")

else:

print("The expression is not balanced.......")