

Assignment-04-(c)

December 14, 2024

1 Assignment#4: List

1.1 Question(1):

Write a program that accepts a list from user and print the alternate element of list.

```
[ ]: l=[]

num_element = int(input("How many element you want to enter:"))

for n in range(num_element):
    element = input("Enter the element:")
    l.append(element)

print(l[0::2])
```

1.2 Question(2):

Write a program that accepts a list from user. Your program should reverse the content of list and display it. Do not use reverse() method.

```
[19]: l=[]

num_element = int(input("How many element you want to enter:"))

for n in range(num_element):
    element = input("Enter the element:")
    l.append(element)

print(l[::-1])
```

```
How many element you want to enter: 4
Enter the element: 67
Enter the element: 89
Enter the element: 90
Enter the element: 99

['99', '90', '89', '67']
```

1.3 Question(3):

Find and display the largest number of a list without using built-in function max(). Your program should ask the user to input values in list from keyboard.

```
[22]: l = []

num_element = int(input("How many element you want to enter:"))

max_num = 0

for n in range(num_element):
    element = int(input("Enter the element:"))
    l.append(element)
    if element>max_num:
        max_num=element

print(f"The List is: {l}")
print(f"The Maximum Number is: {max_num}")i/;
```

How many element you want to enter: 5

Enter the element: 444

Enter the element: 567

Enter the element: 888

Enter the element: 676

Enter the element: 234

The List is: [444, 567, 888, 676, 234]

The Maximum Number is: 888

1.4 Question(4):

Write a program that rotates the element of a list so that the element at the first index moves to the second index, the element in the second index moves to the third index, etc., and the element in the last index moves to the first index.

```
[41]: l = [32,54,67,89,90]

rotated_list = l[-1:]+l[:-1]

rotated_list
```

```
[41]: [90, 32, 54, 67, 89]
```

1.5 Question(5):

Write a program that input a string and ask user to delete a given word from a string.

```
[70]: string = input("Enter the string:")
```

```
w = input("Which word you want to delete from string:")
print("The String is:",string)

if w in string:
    a_str=string.replace(w,"")
    print("The String after deletion the word:",a_str)
else:
    print("Sorry this word is not found!!!")
```

Enter the string: Abbas
Which word you want to delete from string: b
The String is: Abbas
The String after deletion the word: Aas

1.6 Question(6):

Write a program that reads a string from the user containing a date in the form mm/dd/yyyy. It should print the date in the form March 12, 2021.

```
[2]: months = {1:"Jan",2:'Feb',3:'March',4:'April',5:'May',6:'June',7:'July',8:
    ↪'August'}

date = input("Enter the date in format mm/dd/yyyy").split("/")

print(f"{months.get(int(date[0]))} {(date[1])},{date[2]}")
```

Enter the date in format mm/dd/yyyy 4/12/2022
April 12,2022

1.7 Question(7):

Write a program with a function that accepts a string from keyboard and create a new string after converting character of each word capitalized. For instance, if the sentence is "stop and smell the roses." the output should be "Stop And Smell The Roses".

```
[2]: st = input("Enter the string:")
st.title()
```

Enter the string: stop and smell the roses

```
[2]: 'Stop And Smell The Roses'
```

1.8 Question(8):

Find the sum of each row of matrix of size m x n. For example for the following matrix output will be like this :

```
2 11 7 12 5 2 9 15 8 3 10 42
```

Sum of row 1 = 32 Sum of row 2 = 31 Sum of row 3 = 63

```
[5]: # Example matrix
matrix = [
    [2, 11, 7, 12],
    [5, 2, 9, 15],
    [8, 3, 10, 42]
]

# Loop through each row and calculate the sum
for i in range(len(matrix)):
    row_sum = sum(matrix[i])
    print(f"Sum of row {i + 1} = {row_sum}")
```

Sum of row 1 = 32

Sum of row 2 = 31

Sum of row 3 = 63

1.9 Question(9):

Write a program to add two matrices of size n x m.

```
[3]: n = int(input("Enter the number of rows (n): "))
m = int(input("Enter the number of columns (m): "))

# Input the first matrix
print("Enter the elements of the first matrix:")
matrix1 = []
for i in range(n):
    row = list(map(int, input().split()))
    matrix1.append(row)

# Input the second matrix
print("Enter the elements of the second matrix:")
matrix2 = []
for i in range(n):
    row = list(map(int, input().split()))
    matrix2.append(row)

# Add the two matrices
result_matrix = []
for i in range(n):
    row = []
    for j in range(m):
        row.append(matrix1[i][j] + matrix2[i][j])
    result_matrix.append(row)

# Display the result
```

```
print("Resultant Matrix after Addition:")
for row in result_matrix:
    print(" ".join(map(str, row)))
```

Enter the number of rows (n): 3

Enter the number of columns (m): 2

Enter the elements of the first matrix:

34 56

78 90

44 77

Enter the elements of the second matrix:

23 66

44 66

99 11

Resultant Matrix after Addition:

57 122

122 156

143 88

1.10 Question(10):

Write a program to multiply two matrices.

```
[4]: # Input dimensions of the first matrix
n1 = int(input("Enter the number of rows of the first matrix: "))
m1 = int(input("Enter the number of columns of the first matrix: "))

# Input dimensions of the second matrix
n2 = int(input("Enter the number of rows of the second matrix: "))
m2 = int(input("Enter the number of columns of the second matrix: "))

# Check if matrix multiplication is possible
if m1 != n2:
    print("Matrix multiplication is not possible. The number of columns of the_
    ↪first matrix must equal the number of rows of the second matrix.")
else:
    # Input the first matrix
    print("Enter the elements of the first matrix:")
    matrix1 = []
    for i in range(n1):
        row = list(map(int, input().split()))
        matrix1.append(row)

    # Input the second matrix
    print("Enter the elements of the second matrix:")
```

```

matrix2 = []
for i in range(n2):
    row = list(map(int, input().split()))
    matrix2.append(row)

# Initialize the result matrix with zeros
result_matrix = [[0 for _ in range(m2)] for _ in range(n1)]

# Perform matrix multiplication
for i in range(n1):
    for j in range(m2):
        for k in range(m1):
            result_matrix[i][j] += matrix1[i][k] * matrix2[k][j]

# Display the result
print("Resultant Matrix after Multiplication:")
for row in result_matrix:
    print(" ".join(map(str, row)))

```

Enter the number of rows of the first matrix: 2
Enter the number of columns of the first matrix: 2
Enter the number of rows of the second matrix: 2
Enter the number of columns of the second matrix: 2

Enter the elements of the first matrix:

56 78
23 45

Enter the elements of the second matrix:

90 88
66 44

Resultant Matrix after Multiplication:

10188 8360
5040 4004

[]: