Netaji Subhash Engineering College

Department of Computer Science & Engineering

B. Tech CSE 2nd Year 3rd Semester

2021-2022

Name of the Course: IT Workshop

Course Code: PCC-CS393

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Class Roll No.: 3

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Date of Experiment: 3/12/2021

Date of Submission: 9/12/2021

- **Assignment No.: 27**

  Problem Statement: Write a program to find the maximum and minimum of a list of numbers without using built-in functions

  Python Code:

```
def minmax (x):
    minimum = maximum = x[0]
    for i in x[1:]:
        if i < minimum:
            minimum = i
        else:
            if i > maximum: maximum = i
    return (minimum,maximum)
list = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    ele = int(input())
    list.append(ele)
print("Minimum and Maximum numbers are",minmax(list))
```

Sample Output(s):

```
Enter number of elements : 3
1
11
222
Minimum and Maximum numbers are (1, 222)
PS C:\Users\lenovo\Desktop\Python lab assignment>
```

- **Assignment No.: 28**

Problem Statement: Write a program to multiply two matrices as nested lists

Python Code:

```
r_a = int(input("Enter the Number of rows  for matrix A: " ))
c_a = int(input("Enter the Number of Columns for matrix A: "))
print("Enter the elements of Matrix A:")
matrix_a= [[int(input()) for i in range(c_a)] for i in range(r_a)]
print("First Matrix is: ")
for n in matrix_a:
    print(n)
c_b = int(input("Enter the Number of Columns for matrix B: "))
print("Enter the elements of Matrix B:")
matrix_b= [[int(input()) for i in range(c_b)] for i in range(c_a)]
for n in matrix_b:
    print(n)
result=[[0 for i in range(c_b)] for i in range(r_a)]
for i in range(len(matrix_a)):
    for j in range(len(matrix_b[0])):
        for k in range(len(matrix_b)):
            result [i][j]+=matrix_a[i][k]*matrix_b[k][j]
print("\nMatrix_a X Matrix_b is: ")
for r in result:
    print(r)
```

Sample Output(s):

```
Enter the Number of rows  for matrix A: 3
Enter the Number of Columns for matrix A: 3
Enter the elements of Matrix A:
1
2
3
4
5
6
33
4
6
First Matrix is:
[1, 2, 3]
[4, 5, 6]
[33, 4, 6]
Enter the Number of Columns for matrix B: 3
Enter the elements of Matrix B:
9
8
7
6
5
4
3
2
1
[9, 8, 7]
[6, 5, 4]
[3, 2, 1]

Matrix_a X Matrix_b is:
[30, 24, 18]
[84, 69, 54]
[339, 296, 253]
PS C:\Users\lenovo\Desktop\Python lab assignment>
```

- **Assignment No.: 29**

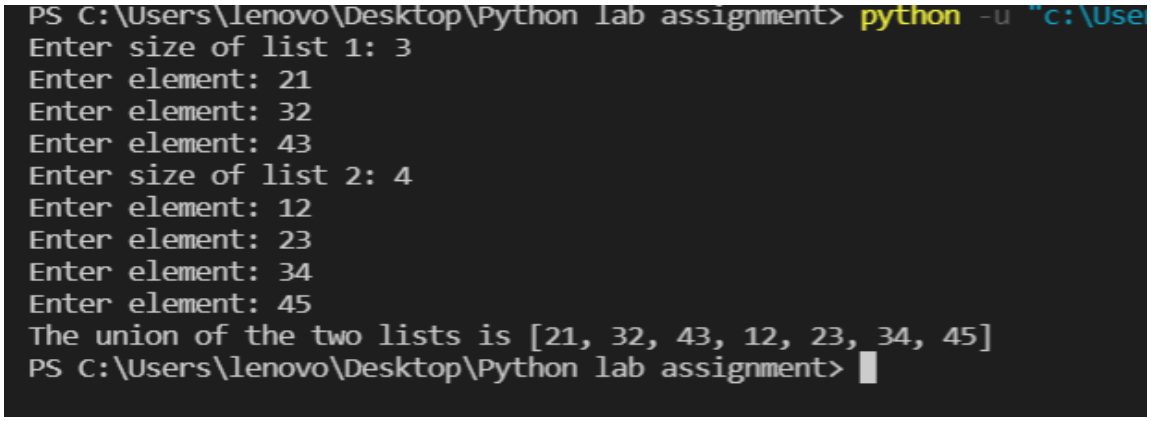
Problem Statement: Write a program to find the union of two lists

Python Code:

```python
list1 = []
num1 = int(input('Enter size of list 1: '))
for n in range(num1):
    num1 = int(input('Enter element: '))
    list1.append(num1)

list2 = []
num2 = int(input('Enter size of list 2: '))
for n in range(num2):
    num2 = int(input('Enter element: '))
    list2.append(num2)

union_list = []
```

```
for x in list1:
    union_list.append(x)

for y in list2:
    if y in list1:
        pass
    else:
        union_list.append(y)

print("The union of the two lists is", union_list)
```

Sample Output(s):



- **Assignment No.: 30**

Problem Statement: Write a program to concatenate two lists using list comprehension.

Python Code:

```
list1 = []
list2 = []
len1 = int(input("Enter number of elements in first list: "))
for i in range(1, len1+1):
            num = int(input("Enter element %d: " %(i)))
            list1.append(num)
len2 = int(input("Enter number of elements in second list: "))
for i in range(1, len2+1):
            num = int(input("Enter element %d: " %(i)))
            list2.append(num)

numbers = [y for x in [list1, list2] for y in x]

print("The concatenated list is", numbers)
```

OUTPUT –

```
Enter number of elements in first list: 3
Enter element 1: 21
Enter element 2: 32
Enter element 3: 43
Enter number of elements in second list: 3
Enter element 1: 45
Enter element 2: 56
Enter element 3: 67
The concatenated list is [21, 32, 43, 45, 56, 67]
PS C:\Users\lenovo\Desktop\Python lab assignment>
```

`

- **Assignment No.: 31**

Problem Statement: Write a program to create a list from two given lists 'list1' and 'list2' of numbers such that it contains numbers that are present in 'list2' but not in 'list1'.

Python Code:

```
list1 = []
list2 = []
list3 = []

len1 = int(input("Enter number of elements in list 1: "))

for i in range(1, len1+1):
    num = int(input("Enter element %d: " %(i)))
    list1.append(num)

len2 = int(input("Enter number of elements in list 2: "))

for i in range(1, len2+1):
    num = int(input("Enter element %d: " %(i)))
    list2.append(num)

for x in list2:
        if x in list1:
            pass
        else:
            list3.append(x)

print(list3)
```

Sample Output(s):

```
PS C:\Users\lenovo\Desktop\Python lab assignment> python -
Enter number of elements in list 1: 4
Enter element 1: 98
Enter element 2: 87
Enter element 3: 76
Enter element 4: 65
Enter number of elements in list 2: 5
Enter element 1: 12
Enter element 2: 43
Enter element 3: 433
Enter element 4: 22
Enter element 5: 112
[12, 43, 433, 22, 112]
PS C:\Users\lenovo\Desktop\Python lab assignment>
```

Assignment No.: 32

Problem Statement: Write a program to detect whether two strings are anagrams or not.

Python Code:

```
def areAnagram(str1, str2):
list = []

len = int(input("Enter number of elements: "))
for i in range(1, len + 1):
    num = int(input("Enter element %d: " %i))
    list.append(num)

print("The distinct pairs whose product is odd are: ")
for i in range(len):
    for j in range(i, len):
        product = list[i] * list[j]
        if (product%2!=0):
                print (list[i],"X", list[j])
```

Sample Output(s):

```
Enter number of elements: 4
Enter element 1: 12
Enter element 2: 21
Enter element 3: 23
Enter element 4: 33
The distinct pairs whose product is odd are:
21 X 21
21 X 23
21 X 33
23 X 23
23 X 33
33 X 33
PS C:\Users\lenovo\Desktop\Python lab assignment>
```

----------END----------