Netaji Subhash Engineering College

Department of Computer Science & Engineering

B. Tech CSE 2nd Year 3rd Semester

2023-2024

Name of the Course: IT Workshop (Python)

Course Code: PCC-CS393

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Assignment No. : 1

Problem Statement: Write a program to find GCD and LCM of two numbers by defining a function to compute GCD and LCM.

Python Code:

```
def gcd(a, b):
    while b:
        a, b = b, a % b
    return a
def lcm(a,b):
    result = gcd(a,b)
    res=((a*b)//(result))
    print(f"The LCM of {a} and {b} is {res}")

n1=int(input("Enter the first number: "))
n2=int(input("Enter the second number: "))
if n1<n2:
    n1,n2=n2,n1

x=int(input("What do you want to find? \n1. GCD \n2. LCM \n: "))
if x==1:
    print(gcd(n1,n2))
elif x==2:
    print(lcm(n1,n2))
else:
```

```
    print("Invalid choice entered")
```

Sample Output:

```
Enter the first number: 35
Enter the second number: 133
What do you want to find?
1. GCD
2. LCM
: 1
7
```

```
Enter the first number: 35
Enter the second number: 133
What do you want to find?
1. GCD
2. LCM
: 2
The LCM of 133 and 35 is 665
```

----------x----------

Assignment No. : 2

Problem Statement: Write a program to define a function that accepts a string and calculates the number of uppercase letters and lowercase letters.

Python Code:

```
def strc(s):
    u=0
    l=0
    for i in s:
        if i.isupper():
            u+=1
        elif i.islower():
            l+=1
    return(f"The number of uppercase letters is: {u} and the number of lowercase letters is {l}")

x=input("Enter the string: ")
print(strc(x))
```

Sample Output:

```
Enter the string: Ayan loves to irritate Vaibhav
The number of uppercase letters is: 2 and the number of lowercase letters is 24
```

----------x----------

Assignment No. : 3

Problem Statement: Write a program to find all the unique elements of a list by defining a function.

Python Code:

```
lst=[87,"rust",108,"golang","python","ruby","java","solana","rust","solana","ruby","ja
va"]
def ul(l):
   unil=[]
   for i in l:
      if l.count(i)==1:
         unil.append(i)
   return(f"The unique elements in the given list {lst} are {unil}")

print(ul(lst))
```

Sample Output:

```
The unique elements in the given list [87, 'rust', 108, 'golang', 'python'
, 'ruby', 'java', 'solana', 'rust', 'solana', 'ruby', 'java'] are [87, 108
, 'golang', 'python']
```

----------x----------

Assignment No. : 4

Problem Statement: Write a program to find all the numbers divisible by 5 and 7 between the given range using the lambda function.

Python Code:

```
start = int(input("Enter the start of the range: "))
end = int(input("Enter the end of the range: "))

# Use a lambda function to check if a number is divisible by both 5 and 7
is_divisible = lambda x: x % 5 == 0 and x % 7 == 0

# Use list comprehension to find the numbers within the range that satisfy the condition
divisible_numbers = [x for x in range(start, end + 1) if is_divisible(x)]

# Print the results
print(f"Numbers divisible by 5 and 7 between {start} and {end}:")
for i in divisible_numbers:
   print(i)
```

Sample Output:

```
Enter the start of the range: 12
Enter the end of the range: 200
Numbers divisible by 5 and 7 between 12 and 200:
35
70
105
140
175
```

----------x----------

Assignment No. : 5

Problem Statement: Write a program to print the even numbers from a given list using the lambda function

Python Code:

```
l_ = [35, 12, 69, 55, 75, 14, 73]
iseven_= lambda x:x%2==0
even_list = [i for i in l_ if iseven_(i)]
print(f"Even numbers in the given list is: {even_list}")
```

Sample Output:

```
Even numbers in the given list is: [12, 14]
```

----------x----------

Assignment No. : 6

Problem Statement: Write a program to find the maximum value from a list using the lambda function.

Python Code:

```
def max_val(list_val):
    max_val = max(list_val, key = lambda i: (isinstance(i, int), i))
    return(max_val)
l=[35,67,89,31,29,47,97,53,41,61]
print("Original list:")
print(l)
```

```
print("\nMaximum value  in the said list using lambda:")
print(max_val(l))
```

Sample Output:

```
Original list:
[35, 67, 89, 31, 29, 47, 97, 53, 41, 61]

Maximum value  in the said list using lambda:
97
```

----------x----------