|  |
| --- |
| **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**  **Name of the Student: ARITTRA BAG**  **Class Roll No.: 103**  **University Roll No.: 10900122105**  **Date of Experiment: 15/09/2023**  **Date of Submission: 22/09/2023**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Assignment No.: A7\_01**  **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(n1,n2):**  **while n2:**  **n1,n2=n2,n1%n2**  **return n1**  **def lcm(n1,n2):**  **return (n1\*n2)//gcd(n1,n2)**  **n1=int(input("Enter the 1st No.: "))**  **n2=int(input("Enter the 2nd No.: "))**  **r\_gcd=gcd(n1,n2)**  **r\_lcm=lcm(n1,n2)**  **print(f"GCD of {n1} and {n2} is: {r\_gcd}")**  **print(f"LCM of {n1} and {n2} is: {r\_lcm}")**  **Sample Output(s):**  Enter the 1st No.: 4  Enter the 2nd No.: 8  GCD of 4 and 8 is: 4  LCM of 4 and 8 is: 8  **Assignment No.: A7\_02**  **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 count(s):**  **uc=0**  **lc=0**  **for char in s:**  **if char.isupper():**  **uc+=1**  **elif char.islower():**  **lc+=1**  **return uc,lc**  **s=input("Enter a String: ").replace(" ","")**  **uc,lc=count(s)**  **print(f"Count of Uppercase Letters: {uc}")**  **print(f"Count of Lowercase Letters: {lc}")**  **Sample Output(s):**  Enter a String: This is a String  Count of Uppercase Letters: 2  Count of Lowercase Letters: 11    **Assignment No.: A7\_03**  **Problem Statement:**  Write a program to find all the unique elements of a list by defining a function.  **Python Code:**  **def unique(l):**  **ul=[]**  **rl=[]**  **for i in l:**  **if i not in ul and i not in rl:**  **ul.append(i)**  **elif i in ul:**  **ul.remove(i)**  **rl.append(i)**  **return ul**  **l=input("Enter the Elements(seperated by comma): ").lower().split(",")**  **print(f"Unique Elements: {unique(l)}")**  **Sample Output(s):**  Enter the Elements(seperated by comma): aritt,1,2,3,1,2  Unique Elements: ['aritt', '3']  **Assignment No.: A7\_04**  **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: "))**  **print(f"Numbers Divisible between {start} and {end}:",list(filter(lambda x:x%5==0 and x%7==0,range(start,end+1))))**  **Sample Output(s):**  **Enter the Start of the Range: 1**  **Enter the End of the Range: 40**  **Numbers Divisible between 1 and 40: [35]**  **Assignment No.: A7\_05**  **Problem Statement:**  Write a program to print the even numbers from a given list using the lambda function  **Python Code:**  num=[int(x) for x in input("Enter the Numbers(seperated by comma): ").split(",")]  print("Even Numbers:",list(filter(lambda x:x%2==0,num)))  **Sample Output(s):**  Enter the Numbers(seperated by comma): 1,2,3,4,5  Even Numbers: [2, 4]  **Assignment No.: A7\_06**  **Problem Statement:**  Write a program to find the maximum value from a list using the lambda function.  **Python Code:**  from functools import reduce  num=[int(x) for x in input("Enter the Numbers(seperated by comma): ").split(",")]  print("Maximum Number is: ",reduce(lambda x,y:x if x>y else y,num))  **Sample Output(s):**  Enter the Numbers(seperated by comma): -50,20,33,90,-120  Maximum Number is: 90  **Assignment No.: A7\_07**  **Problem Statement:**  Write a program to find the list of prime numbers within a given range.  **Python Code:**  start,end=int(input("Enter the Start of the Range: ")),int(input("Enter the End of the Range: "))  print(f"Prime Numbers between {start} and {end}:",list(filter(lambda x:all(x%i!=0 for i in range(2,int(x\*\*0.5)+1)) and x>1,range(start,end+1))))  **Sample Output(s):**  Enter the Start of the Range: 1  Enter the End of the Range: 10  Prime Numbers between 1 and 10: [2, 3, 5, 7] |