

P E S University  
Department of Computer Science & Engineering  
Session : Aug-Dec 2019

## Introduction to Computing using Python Laboratory( UE19CS102)

### Week 6 – Programs on Control Structures

1	<p>Write a program to find the sum and product from 1 to n (included) ,where n is given by the user.</p> <p>Sample: if n=4: then sum would be 10 and product would be 24.</p> <p>Solution: n=int(input("enter the number")) i=1; prod=1 sum=0 while(i&lt;=n):     sum=sum+i     prod=prod*i     i=i+1 print("sum of",n,"numbers is=",sum) print("Product of",n,"numbers is=",prod)</p>
2	<p>Write a program that prompts the user to enter positive integer values, and continues to prompt the user until a value of -1 is entered, adding up all the value entered and displaying the result.</p> <p>Solution: total = 0 value = int(input('Enter a positive integer value (-1 to quit): ')) while value != -1:     total = total + value     value = int(input('Enter a positive integer value (-1 to quit): ')) print('The total of the entered values is', total)</p>
3	<p>Check wheter a number is a perfect number or not. Perfect number is a positive number, which is the sum of its all positive divisors excluding that number and is equal to that number itself.</p> <p>For example 6 is perfect number since divisor of 6 are 1, 2 and 3. Sum of its divisor is 1 + 2+ 3 = 6 (6 is the smallest perfect number). Next perfect number is 28 since 1+ 2 + 4 + 7 + 14 = 28.Some more perfect numbers: 496,</p>

	<p>8128.</p> <p>Solution:</p> <pre> Number = int(input("Please Enter any Number: ")) Sum = 0 i=1 while i &lt; Number:     if(Number % i == 0):         Sum = Sum + i     i+=1 if (Sum == Number):     print(Number," is a Perfect Number") else:     print(Number," is not a Perfect Number") </pre>
4	<p>Write a program to create the multiplication table (from 1 to 10) for a given number.</p> <p>Expected Output:</p> <pre> Input a number: 2 2 x 1 = 2 2 x 2 = 4 2 x 3 = 6 2 x 4 = 8 2 x 5 = 10 2 x 6 = 12 2 x 7 = 14 2 x 8 = 16 2 x 9 = 18 2 x 10 = 20 </pre> <pre> n = int(input("Input a number: ")) # use for loop to iterate 10 times for i in range(1,11):     print(n,'x',i,'=',n*i) </pre>
5	<p>Write a program to construct the following pattern.</p> <p>Expected Output</p> <pre> 1 22 333 4444 55555 </pre> <p>Solution:</p> <pre> for i in range(6):     print(str(i) * i) </pre>

6	<p>Write a program to count the number of Vowels in a given string.</p> <p>Solution:</p> <pre>l = input("Input a letter of the alphabet: ") count=0 for i in l:     if i=='a' or i=='e' or i=='i' or i=='o' or i=='u':         count=count+1 print(count)</pre>
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