**WEEK 1: BASIC FUNCTIONS (25/09/2020)**

1)    Write a Python program which accepts the radius of a circle from the user and compute the area.

2)     Write a Python program which accepts the user's first and last name and print them in reverse order with a space between them.

3)     Write a Python program which accepts a sequence of comma-separated numbers from user and generate a list and a tuple with those numbers.

4)     Write a Python program to accept a filename from the user and print the extension of that.

5)     Write a Python program that accepts an integer (n) and computes the value of n+nn+nnn.

6)     Write a Python program to concatenate all elements in a list into a string and return it.

7)     Write a Python program that will accept the base and height of a triangle and compute the area.

8)  Write a Python program to calculate the length of a string.

9)  Write a Python program to count the number of characters (character frequency) in a string.

10)     Write a Python program to get a string and a non-negative integer, n to return n copies of a the string.

11)     Write a Python program to check whether a specified value is contained in a group of values.

Test Data :

3 -> [1, 5, 8, 3] : True

-1 -> [1, 5, 8, 3] : False

12)     Write a Python program to print all even numbers from a given numbers list in the same order and stop the printing if any numbers that come after 237 in the sequence.

13)  Write a Python program to compute the greatest common divisor (GCD) of two positive integers.

**WEEK 2: CONDITIONS  (02/10/2020)**

1)     Write a Python program to test whether a number is within 100 of 1000 or 2000.

2)     Write a Python program to calculate the sum of three given numbers, if the values are equal then return thrice of their sum.

3)     Write a Python program to find whether a given number (accept from the user) is even or odd, print out an appropriate message to the user.

4)     Write a Python program to count the number 4 in a given list.

5)     Write a Python program to get the n (non-negative integer) copies of the first 2 characters of a given string. Return the n copies of the whole string if the length is less than 2

6)     Write a Python program to test whether a passed letter is a vowel or not.

7)  Write a Python program to sum of three given integers. However, if two values are equal sum will be zero.

8)  Write a Python program to sum of two given integers. However, if the sum is between 15 to 20 it will return 20.

9)  Write a Python program that will return true if the two given integer values are equal or their sum or difference is 5.

10)  Write a Python program to test whether all numbers of a list is greater than a certain number.

11)  Write a Python program to check if lowercase letters exist in a string.

**WEEK 3: LIST  (09/10/2020)**

1)     Write a Python program to display the first and last colors from the following list.

color\_list = ["Red","Green","White" ,"Black"]

2)     Write a Python program to print the even numbers from a given list.

3)     Write a Python program to sum all the items in a list.

4)     Write a Python program to multiplies all the items in a list.

5)     Write a Python program to get the largest number from a list.

6)     Write a Python program to get the smallest number from a list.

7)     Write a Python program to remove and print every third number from a list of numbers until the list becomes empty.

8)     Write a Python program to check the sum of three elements (each from an array) from three arrays is equal to a target value. Print all those three-element combinations.

6)     Write a Python program to remove duplicates from a list.

7)     Write a Python program to generate and print a list of first and last 5 elements where the values are square of numbers between 1 and 30 (both included).

8)     Write a Python program to generate all permutations of a list in Python.

9)     Write a Python program to get the difference between the two lists.

4)     Write a Python function that takes a list and returns a new list with unique elements of the first list.

**WEEK 4: DICTIONARY  (16/10/2020)**

1)     Write a Python script to sort (ascending and descending) a dictionary by value.

2)     Write a Python script to add a key to a dictionary.

3)     Write a Python script to concatenate following dictionaries to create a new one.

4)     Write a Python script to check if a given key already exists in a dictionary.

5)     Write a Python script to merge two Python dictionaries.

6)     Write a Python program to sum all the items in a dictionary.

7)     Write a Python program to multiply all the items in a dictionary.

8)     Write a Python program to remove a key from a dictionary.

9)     Write a Python program to sort a dictionary by key.

10)  Write a Python program to remove duplicates from Dictionary.

11)  Write a Python program to find the highest 3 values in a dictionary.

12)  Write a Python program to convert a list into a nested dictionary of keys.

13)  Write a Python program to sort a list alphabetically in a dictionary.

14)  Write a Python program to remove spaces from dictionary keys.

15)  Write a Python program to check multiple keys exists in a dictionary.

16)  Write a Python program to count number of items in a dictionary value that is a list.

**WEEK 5: CONVERSIONS (23/10/2020)**

2)     Write a Python program to convert temperatures to and from celsius, fahrenheit.

3)     Write a Python program to guess a number between 1 to 9

5)     Write a Python program that accepts a word from the user and reverse it.

6)     Write a Python program that prints all the numbers from 0 to 6 except 3 and 6.

7)     Write a Python program to get the Fibonacci series between 0 to 50.

8)     Write a Python program to calculate a dog's age in dog's years. Note: For the first two years, a dog year is equal to 10.5 human years. After that, each dog year equals 4 human years.

9)     Write a Python program to check whether an alphabet is a vowel or consonant.

10)  Write a Python program to convert month name to a number of days.

11)  Write a Python program to check a triangle is equilateral, isosceles or scalene.

12)  Write a Python program to display astrological sign for given date of birth.

24)  Write a Python program to convert an integer to binary keep leading zeros.

25)  Write a python program to convert decimal to hexadecimal.

13)  Write a Python program to create the multiplication table (from 1 to 10) of a number.

Customised but referred from:<https://www.w3resource.com/python-exercises/python-basic-exercises.php>

**READING FILES**

Using [names.txt](https://projecteuler.net/project/resources/p022_names.txt) (right click and 'Save Link/Target As...'), a 46K text file containing over five-thousand first names, begin by sorting it into alphabetical order. Then working out the alphabetical value for each name, multiply this value by its alphabetical position in the list to obtain a name score.

For example, when the list is sorted into alphabetical order, COLIN, which is worth 3 + 15 + 12 + 9 + 14 = 53, is the 938th name in the list. So, COLIN would obtain a score of 938 × 53 = 49714.

What is the total of all the name scores in the file?

Resource from: [https://projecteuler.ne](https://projecteuler.net)t

**EXTRA QUESTIONS**

1)  Write a Python program to get the least common multiple (LCM) of two positive integers.

2)  Write a Python program to compute the distance between the points (x1, y1) and (x2, y2).

3)  Write a Python program to calculate the sum of the digits in an integer.

4)  Write a Python program to count the number occurrence of a specific character in a string.

5)  Write a Python program to remove the first item from a specified list.

6)  Write a Python program to input a number, if it is not a number generate an error message.

7)  Write a Python program to filter the positive numbers from a list.

8)  Write a Python program to compute the product of a list of integers (without using for loop).

9)  Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string. If the string length is less than 2, return instead of the empty string.

10)     Write a Python program to find those numbers which are divisible by 7 and multiple of 5, between 1500 and 2700 (both included).

11)     Write a Python function to calculate the factorial of a number (a non-negative integer). The function accepts the number as an argument.

12)     Write a Python function to check whether a number is in a given range.

13)     Write a Python function that accepts a string and calculate the number of upper case letters and lower case letters.

14)     Write a Python function that takes a sequence of numbers and determines if all the numbers are different from each other.

15)     Write a Python program to create all possible strings by using 'a', 'e', 'i', 'o', 'u'. Use the characters exactly once.

16)     Write a Python program to find unique triplets whose three elements gives the sum of zero from an array of n integers.

17)     Write a Python program to create the combinations of 3 digit combo.

18)     Write a Python program to create all possible permutations from a given collection of distinct numbers

19)     Write a Python program to get the third side of right angled triangle from two given sides.