

## Basic Level Set

1. Write a program in Python to perform the following operation:
  - If a number is divisible by 3 it should print "Brudite" as a string
  - If a number is divisible by 5 it should print "Python Training" as a string
  - If a number is divisible by both 3 and 5 it should print "Brudite - Python Training" as a string.
2. Write a program that accepts a string as an input from the user and calculate the number of digits and letters.  
Hello123  
Alph -> 5 and number -> 3
3. Write a Python program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:  
Percentage  $\geq$  90% : Grade A  
Percentage  $\geq$  80% : Grade B  
Percentage  $\geq$  70% : Grade C  
Percentage  $\geq$  60% : Grade D  
Percentage  $\geq$  40% : Grade E  
Percentage  $<$  40% : Grade F
4. Write a Python program to find the sum of all odd numbers between two given numbers.  
**Start = 1, stop = 10**  
**Sum of odd numbers: 25**
5. Write a Python program to check if a given number is a perfect number.
6. Write a Python program to check if a string is an anagram of another string.  
**string1 = "listen", string2 = "silent"**  
**Output: True**
7. Write a Python program to calculate the LCM (Least Common Multiple) of two numbers.  
**number1 = 12, number2 = 18**  
**LCM of 12 and 18 is: 36**
8. Write a Python program to count the frequency of each element in a list.  
**input\_list = [1, 2, 3, 2, 4, 1, 2, 4, 5]**  
**Frequency count: {1: 2, 2: 3, 3: 1, 4: 2, 5: 1}**
9. Write a Python program to reverse the order of words in a given sentence.  
**input\_sentence = "Hello, World! Welcome to Python programming."**  
**Output after reverse = "programming. Python to Welcome World! Hello,"**
10. Write a Python program to calculate the sum of digits of a given number until the sum becomes a single-digit number.  
**Sample Input: num = 9876**  
**Sample Output: Sum\_of\_digits = 3**
11. Write a Python program to reverse a number using a while loop.  
**Sample Input: num = 12345**  
**Sample Output: revnum = 54321**

## Medium Level Set

1. Write a Python program to find the common elements between two lists.

**Sample Input:** l1 = [1, 2, 3, 4, 5] and l2 = [4, 5, 6, 7, 8]

**Sample output:** [4, 5]

2. Create a function that takes a list and returns a new list with unique elements of the first list.

**Sample Input:** list1 = [1, 2, 2, 3, 4, 4, 5, 5]

**Sample Output:** list2 = [1, 2, 3, 4, 5]

3. Given an array of N integers, and an integer K, find the number of pairs of elements in the array whose sum is equal to K.

**Sample Input:** arr = [1, 2, 3, 4, 5], k = 6

**Sample Output:** Pair count: 2

4. Given an array of size N The task is to rotate array by D elements towards right

**Sample Input:** arr = [1, 2, 3, 4, 5], D = 2

**Sample Output:** arr after rotation = [4, 5, 1, 2, 3]

5. You are developing a program that analyzes weather data. Write a Python function that takes a list of temperature readings for a specific location and determines the average temperature, highest temperature, and lowest temperature.

**Input**

**temperature\_readings = [25, 28, 21, 24, 27]**

**Output:**

**Average Temperature: 25.0**

**Highest Temperature: 28**

**Lowest Temperature: 21**

6. Write a Python program to check if a number is a power of two using recursion.

7. Write a Python function that finds the median of a list of numbers.

**Sample Input:** number\_list = [7, 2, 5, 1, 9, 3]

**Sample Output:** Median: 4.5 4

8. Write a Python function that counts the number of vowels in a given string.

**Sample Input:** string = "Hello, World!"

**Sample Output:** Number of vowels: 3

9. Write a Python program that executes an operation on a list and handles an IndexError exception if the index is out of range.

10. We are making n stone piles! The first pile has n stones. If n is even, then all piles have an even number of stones. If n is odd, all piles have an odd number of stones. Each pile must have more stones than the previous pile but as few as possible. Write a Python program to find the number of stones in each pile.

**Sample Input: n = 7**

**Sample Output: Stones in a single pile = [2, 4, 6]**

11. Write a Python program to create a list of given strings individually of the list using Python map function.

Eg.

Input:

['Red', 'Blue', 'Black', 'White', 'Pink']

Output:

[[ 'R', 'e', 'd'], [ 'B', 'l', 'u', 'e'], [ 'B', 'l', 'a', 'c', 'k'], [ 'W', 'h', 'i', 't', 'e'], [ 'P', 'i', 'n', 'k']]

12. Create a login page backend to ask users to enter the username and password.

- Make sure to ask for a Re-Type Password and if the password is incorrect give chance to enter it again but it should not be more than 3 times.

13. Write a Python program to find if a given string starts with a given character using Lambda.

**Sample input: input\_string = "Hello, World!", given\_char = "H"**

**Sample Output: True**