

Coding logic exercise

- 1) Write a Python program/function to print the sum, largest number, smallest number, average of the numbers in a list.

eg. [1,2,3,4,5]

Sum: 15

Max: 5

Min: 1

Mean: 3

- 2) Write a Python function that takes two lists and returns True if they have at least one common member.

eg. ["Tom", "Bob", "Sue", "Rachel"], ["Bob", "Susan", "Roger", "Mike"]

returns true as Bob is common.

- 3) Write a Python program/function to combine two dictionary adding values for common keys.

eg.

d1 = {'a': 100, 'b': 200, 'c':300}

d2 = {'a': 300, 'b': 200, 'd':400}

Sample output: {'a': 400, 'b': 400, 'd': 400, 'c': 300}

- 4) Write a Python program/function which iterates the integers from 1 to 100. For multiples of three print "Fizz" instead of the number and for the multiples of five print "Buzz". For numbers which are multiples of both three and five print "FizzBuzz".

Sample Output :

fizzbuzz

1

2

fizz

4

buzz

5) Write a Python program/function to check the validity of password input by users.

Validation :

- At least 1 letter between [a-z] and 1 letter between [A-Z].
- At least 1 number between [0-9].
- At least 1 character from [\$#@].
- Minimum length 6 characters.
- Maximum length 16 characters.

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

Sample List : [1,2,3,3,3,3,4,5]

Unique List : [1, 2, 3, 4, 5]

7) Write a function which calculates the length of a hypotenuse of a right angle triangle given height and base.

Hint: Pythagorean theorem

8) Scrabble score:

Given a word, compute the Scrabble score for that word where the values are as follows

Letter	Value
A, E, I, O, U, L, N, R, S, T	1
D, G	2
B, C, M, P	3
F, H, V, W, Y	4
K	5
J, X	8
Q, Z	10

eg. "Cabbage" is worth 14 points

- 3 points for C
- 1 point for A, twice
- 3 points for B, twice
- 2 points for G
- 1 point for E

9) Write a Python program to find the greatest common divisor (gcd) of two integers.

Hint: this is a recursive function