# Python exercises for Alstom:

Level 1

1. Write a code to display sum and average of two numbers. The average should be displayed as a whole number (no decimal places) after calculation.
2. Write a program that prints out all the elements of the list (list of numbers) that are less than 5
3. Given a number check if it is even or odd, if it’s divisible by ten then display a different message.
4. Write a program to calculate & display product of two integers. If the product is greater than 500 then display their sum.
5. Given a starting number as 4 and ending number as 9, iterate over the range of numbers and print the sum of current number and previous number at every iteration
6. Write a Python program to test whether a passed letter is a vowel or not.
7. Given a string, display only those characters which are present at the even index.
8. Given a list of numbers, iterate it and print only those numbers which are divisible of 10
9. Given a list of integers, find if the first & last elements of the list are same.
10. Replace all spaces in a string with an underscore.
11. Write a code to check if the given string is palindrome or not.
12. Write a code to generate Fibonacci series till nth number.
13. Given 2 strings, stra and strb, create a new string by appending strb in the middle of stra
14. Write a code to print the following pattern using a loop:

1

1. 2

1 2 3

1 2 3 4

1 2 3 4 5

1. Given a huge string, display only the first 25% (aprox) of character.

For example, if string is “greater good”, then the output should be “gre”.

1. Given a list of numbers, if the size of list is odd, then display the center most number. If the size of list is even then display average of the two numbers ate the center.
2. Take two lists and write a program that returns a list containing only the elements that are common between the two lists (without duplicates).
3. Write a code to check if a given year is leap year or not.
4. Given a string, count the number of upper case & lower-case characters. For example, given a string like “ALstoM”, the output should be: 3 upper & 3 lower
5. Write a code to check if the given number is prime or not.
6. Understand the usage of enumerate function. Write an example code to demonstrate its use.
7. Explore the use of **nonlocal** keyword. Write a code demonstrate difference between local, nonlocal and global data.

Level 2:

1. Iterate over a list and count the occurrence of each element. Create a dictionary to show the count of each element
2. Given a list of integers, remove all duplicates and put them in a tuple (only duplicates). Find the minimum, maximum, sum and average of all numbers in that list.
3. A bank has options for recurring deposit with an yearly interest rate of 8% cumulatively. Create a function which takes the deposit amount, and number of years (n) as an input. The function would return the amount cumulated at the end of ‘n’ years.
4. Write a code to extract all values from a multi-level nested dictionary. It should work for any level and should display only values and not keys.
5. Given a list of strings, traverse through the list and if it comes across a string called as “reverse”, print the reverse of the list up to whatever has been traversed.

For example, input:

lista = [‘the’, ‘greater’, ‘good’, ‘is’, ‘reverse’, ‘of’, ‘what’, ‘exists’]

output:

[‘is’, ‘good’, ‘greater’, the’]