1. Python Program to add natural numbers upto sum = 1+2+3+...+n

-take input from the user

- initialize sum and counter

- use while loop to calculate sum

- print the sum

**OutPut**

Enter n: 10

The sum is 55

**2.** Python program to check if the number provided by the user is an Armstrong number or not

take input from the user

initialize sum

find the sum of the cube of each digit inside the while loop

display the result using if else statement

**Output 1**

Enter a number: 663

663 is not an Armstrong number

**Output 2**

Enter a number: 407

407 is an Armstrong number

# 3. Python Program to Sort Words in Alphabetic Order

**Program to sort alphabetically the words form a string provided by the user**

**take input from the user**

**breakdown the string into a list of words**

**sort the list**

**display the sorted words**

**Input**

**Hello this Is an Example With cased letters**

**Output**

The sorted words are:

Example

Hello

Is

With

an

cased

letters

this

4. Python Program to Check if a Number is Positive, Negative or 0

**#get input from the user**

**#use if, elif, else statements**

**Output 1**

Enter a number: 2

Positive number

**Output 2**

Enter a number: 0

Zero

5. Python Program to Check Prime Number

**take input from the user**

**Output**

407 is not a prime number

11 times 37 is 407

# 6. Python Program to Check if a Number is Odd or Even

# Python program to check if the input number is odd or even.

# A number is even if division by 2 give a remainder of 0.

# If remainder is 1, it is odd number.

**Output 1**

Enter a number: 43

43 is Odd

**Output 2**

Enter a number: 18

18 is Even

7.Python Program to Check Leap Year

**Output**

2000 is a leap year

# 8. Python Program to Find the Largest Among Three Numbers

**#use 3 variables num1,num2,num3**

**#get value for num1,num2,num3 from the user**

**#use if, elif, else statements for finding largest three numbers**

**#print the largest number**

**Output**

The largest number between 10, 14 and 12 is 14.0

# 9. Python Program to Make a Simple Calculator

**- create a simple calculator using functions that can add, subtract, multiply or divide depending upon the input from the user**

**-**function adds two numbers

function subtracts two numbers

function multiplies two numbers

function divides two numb

Take input from the user

**Output**

Select operation.

1.Add

2.Subtract

3.Multiply

4.Divide

Enter choice(1/2/3/4): 3

Enter first number: 15

Enter second number: 14

15 \* 14 = 210

10. Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old.

- use input()

11. **List Less Than Ten**

Take a list, say for example this one:

a **=** [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]

and write a program that prints out all the elements of the list that are less than 5.

**12. List Overlap**

Take two lists, say for example these two:

a **=** [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]

b **=** [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]

and write a program that returns a list that contains only the elements that are common between the lists (without duplicates). Make sure your program works on two lists of different sizes.

13. Ask the user for a string and print out whether this string is a palindrome or not. (A **palindrome** is a string that reads the same forwards and backwards.)

14. Let’s say I give you a list saved in a variable: a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]. Write one line of Python that takes this list a and makes a new list that has only the even elements of this list in it.

15. Write a program that takes a list of numbers (for example, a = [5, 10, 15, 20, 25]) and makes a new list of only the first and last elements of the given list. For practice, write this code inside a function.

16.Write a program (function!) that takes a list and returns a new list that contains all the elements of the first list minus all the duplicates.

17. Write a program (using functions!) that asks the user for a long string containing multiple words. Print back to the user the same string, except with the words in backwards order. For example, say I type the string:

My name **is** Michele

Then I would see the string:

Michele **is** name My

shown back to me.

**Coding exercise on functions**

1. Write a function that returns the maximum of two numbers.
2. Write a function called **fizz\_buzz**that takes a number.
   1. If the number is divisible by 3, it should return “Fizz”.
   2. If it is divisible by 5, it should return “Buzz”.
   3. If it is divisible by both 3 and 5, it should return “FizzBuzz”.
   4. Otherwise, it should return the same number.
3. Write a function for checking the speed of drivers. This function should have one parameter: speed.
   1. If speed is less than 70, it should print “Ok”.
   2. Otherwise, for every 5km above the speed limit (70), it should give the driver one demerit point and print the total number of demerit points. For example, if the speed is 80, it should print: “Points: 2”.
   3. If the driver gets more than 12 points, the function should print: “License suspended”
4. Write a function called **showNumbers**that takes a parameter called **limit.**It should print all the numbers between 0 and limit with a label to identify the even and odd numbers. For example, if the limit is 3, it should print:
   1. 0 EVEN
   2. 1 ODD
   3. 2 EVEN
   4. 3 ODD

* Write a function that returns the sum of multiples of 3 and 5 between 0 and **limit** (parameter). For example, if limit is 20, it should return the sum of 3, 5, 6, 9, 10, 12, 15, 18, 20.
* Write a function called **show\_stars(rows).**If **rows** is 5, it should print the following:
  1. \*
  2. \*\*
  3. \*\*\*
  4. \*\*\*\*
  5. \*\*\*\*\*
* Write a function that prints all the prime numbers between 0 and **limit**where limit is a parameter.