Functions in python

UTKARSH GAIKWAD

CLASS STARTING SHARP AT 2:05 PM

What is function?

Apple Cutter
function h
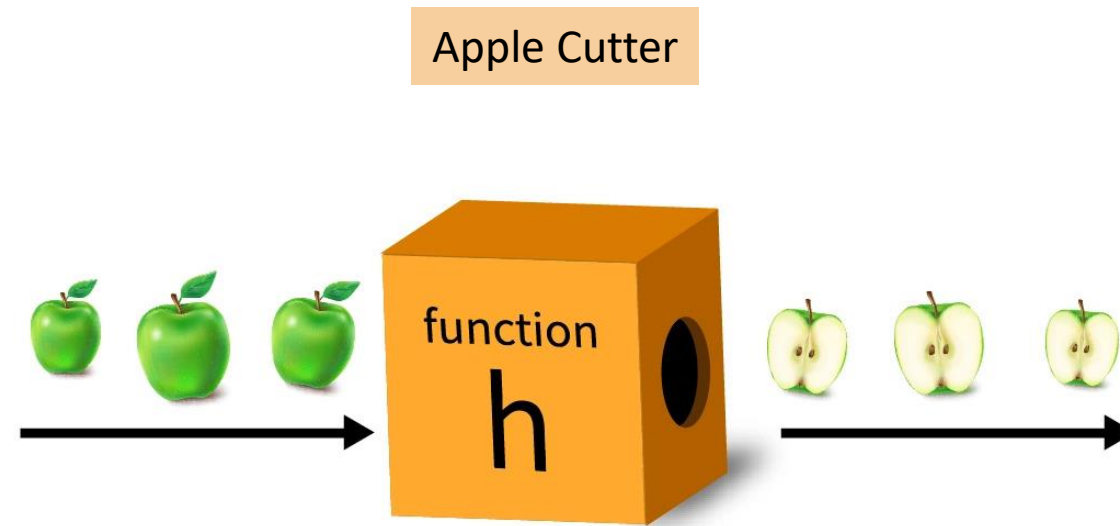
Defining Function in python

Fig: Function definition
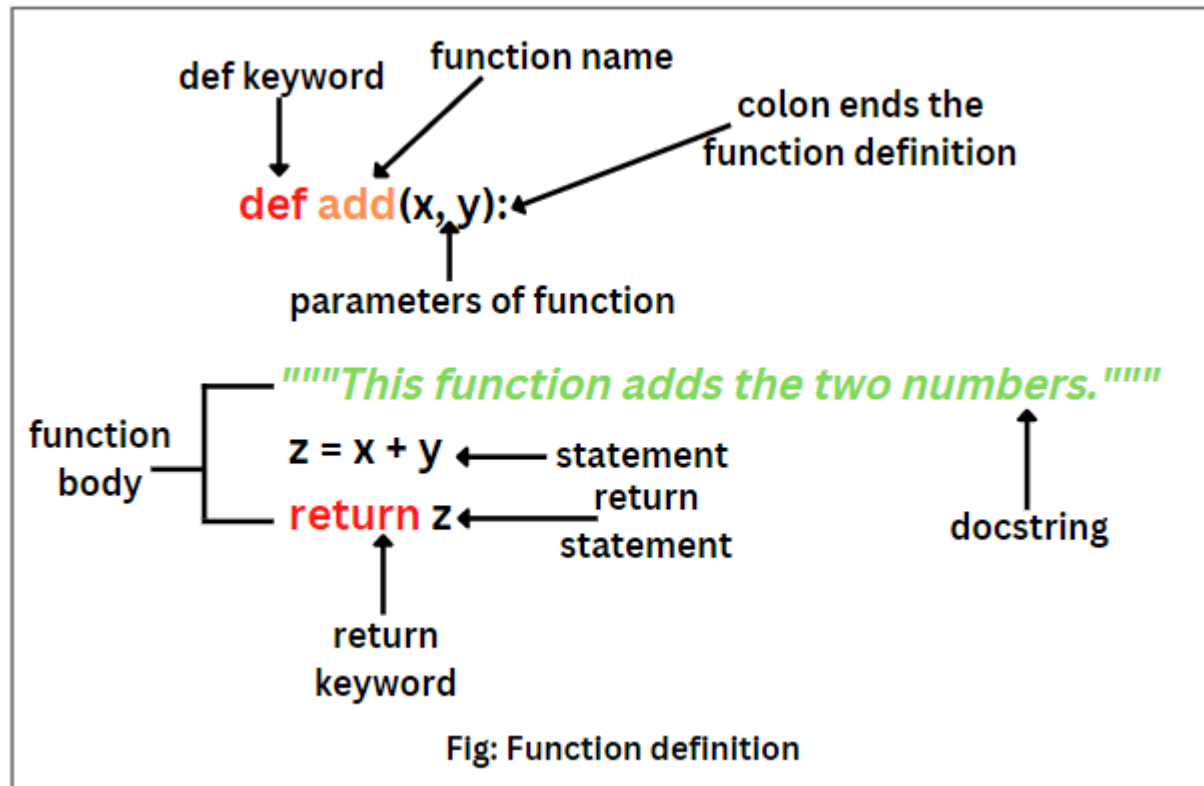
Functions

- Write a function in python to add 2 numbers

- Write a function in python to output cube of a given number.

- Write a function in python to output cube of given numbers from a list.

- Write a function in python to calculate sum of all elements inside a list

- Write a function in python to calculate product of all elements inside a list.

- Write a function in python to calculate hypotenuse of a right angled triangle.

- Write a function in python which takes 3 sides and determines whether 3 sides form triangle or not .

- Write a function in python that calculates area of triangle when 3 sides are given.

- Write a function in python to calculate total words used in given sentence.

Assignments

➢ Write 2 functions to convert temperature to Celsius and Farenheit with names celsius_to_farenheit and farenheit_to_celsius.

➢ Write a function to calculate factorial of given number eg. 5 factorial = 5*4*3*2*1

➢ Write a function to calculate EMI for given P, N and R

➢ Write a function to count vowels from a given word (A , E, I , O, U)

➢ Write a function to output grade of a student based on below criteria(Take marks as args)
  • More than 90 : A
  • 80-89 : B
  • 70-79 : C
  • 60-69 : D
  • Below 60 : F

Assignment continued

➢ Write a function to analyze student marks as below

- Take a args of marks from 0-100
- Find average marks
- Find highest marks
- Find Lowest marks
- Find number of Students passed (Marks>=60)
- Find number of Students failed (Marks<60)
- Return above in DataFrame format

Generator function

➤ Write a function in python to generate Fibonacci Series

➤ Square for first n natural number : 1, 4, 9, 16, 25, 36, ...

0, 1, 1, 2, 3, 5, 8, 13, 21, …
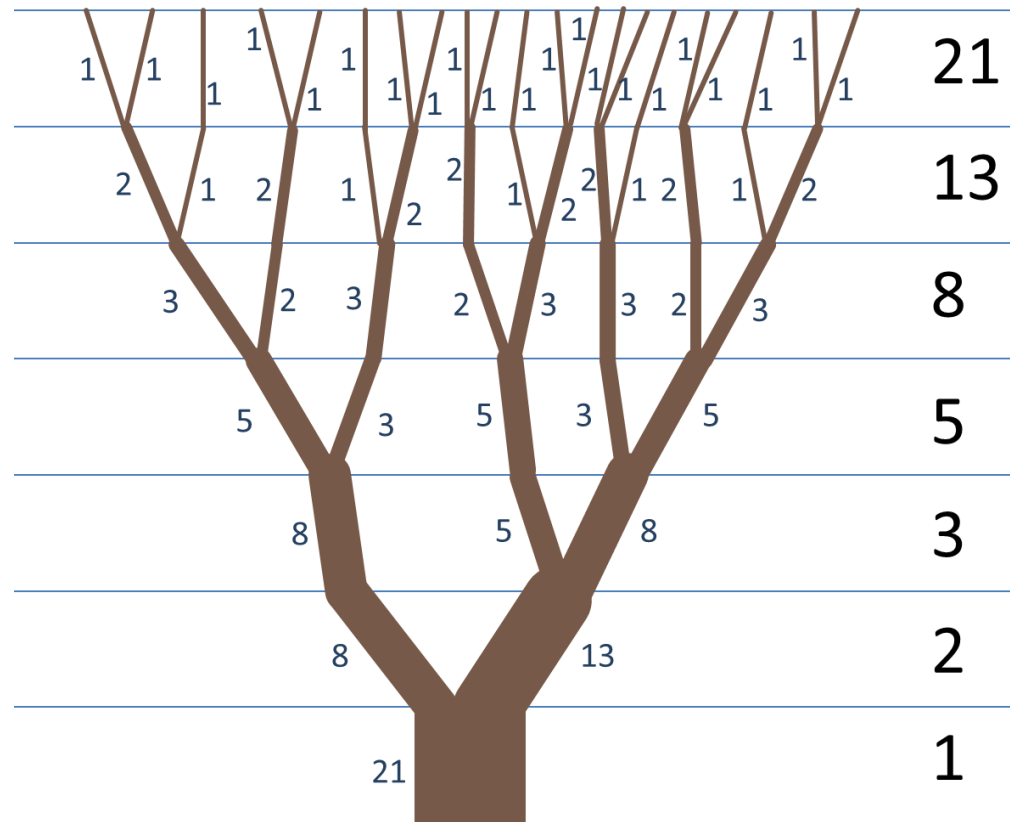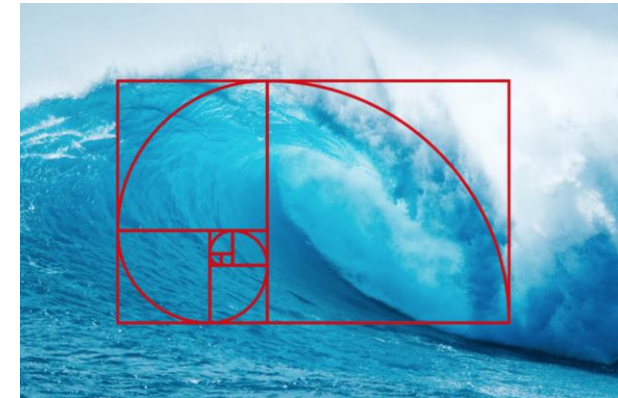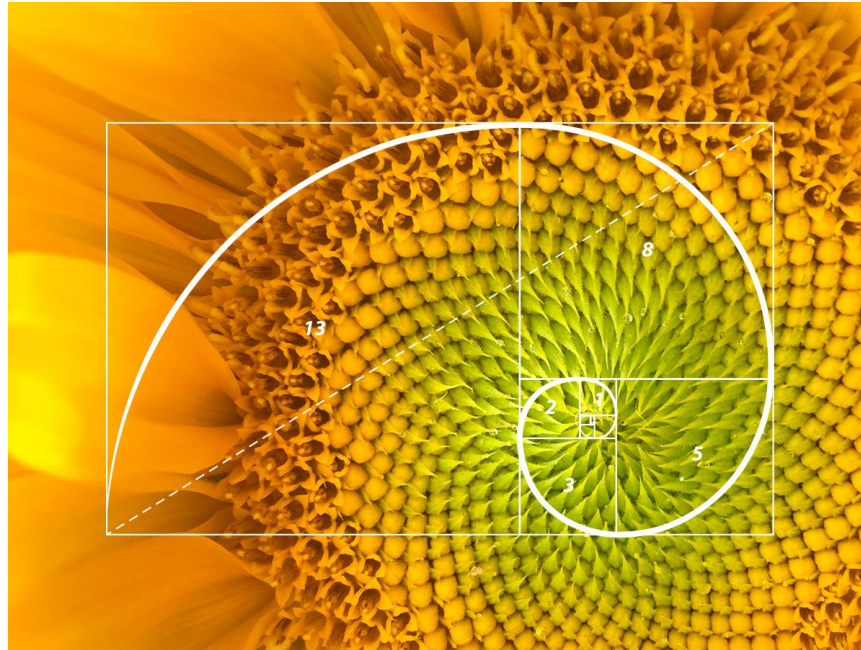
$F(n) = F(n-1) + F(n-2)$

Fibonacci Sequences

Tree growth

Fibonacci Spiral
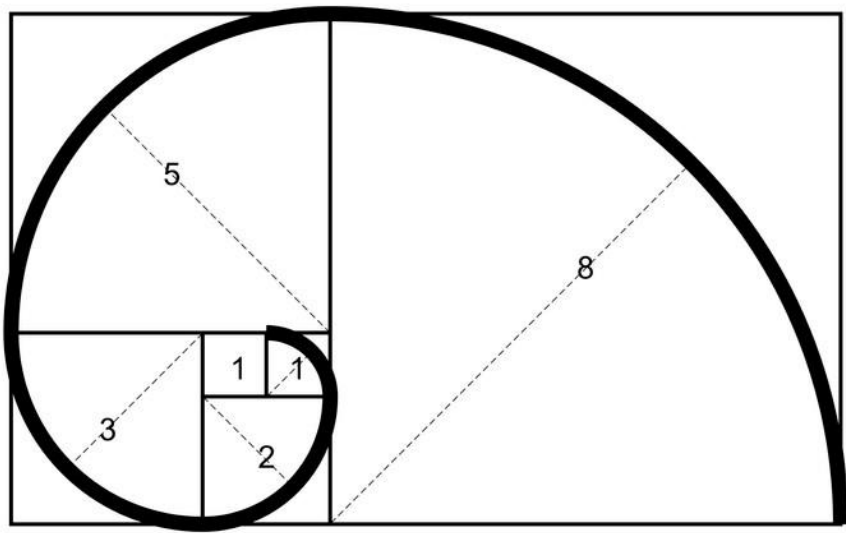
Application Solar power plant

Lambda Function Anonymous function

keyword ← → argument

f = lambda a: a * a

function object that accepts and stores the result of the expression

one-line expression
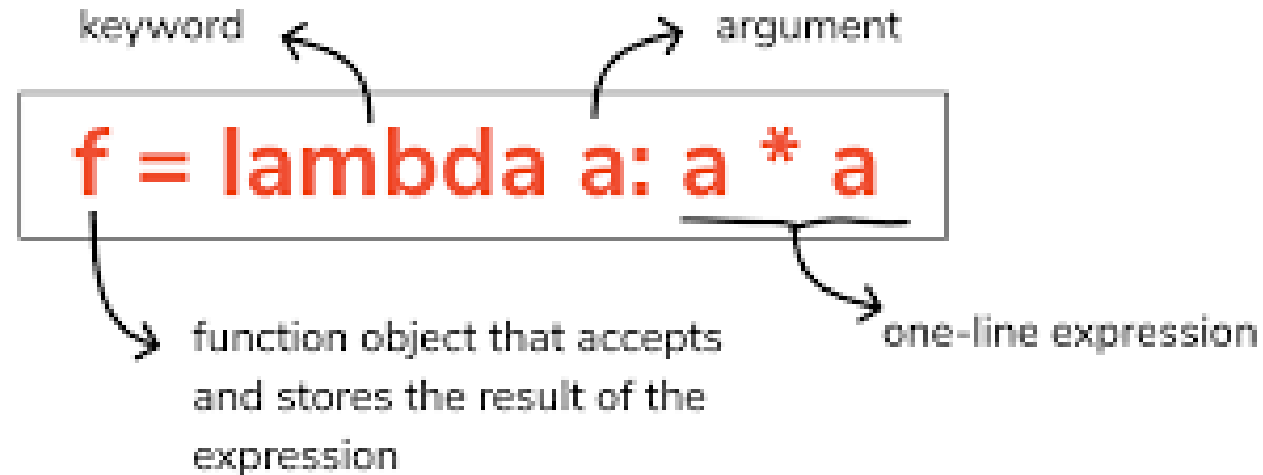
Example Lambda Function to check if given number is even or odd

Map Function

$$X'=map(X,f) \quad f(x)=x+1$$

x_0	x_1	x_2	x_3	x_4	x_5
0	5	8	3	2	1

X (top array)

X' (bottom array)

x'_0 x'_1 x'_2 x'_3 x'_4 x'_5

Thank you

FOR ANY QUERIES PING ME ON SKYPE CHAT