Functions Class 2

UTKARSH GAIKWAD

CLASS STARTING SHARP AT 6:05 PM

Topics to be covered today

➢ Generator function

➢ Anonymous functions (lambda function)

➢ Map function

Generator function

➢ Write a function to generate square of numbers

➢ Write a function in python to generate Fibonacci Series

➢ Next term = Sum of previous 2 terms

0, 1, 1, 2, 3, 5, 8, 13, 21,……

f(n) = f(n-1) + f(n-2)

f(0) = 0
f(1) = 1
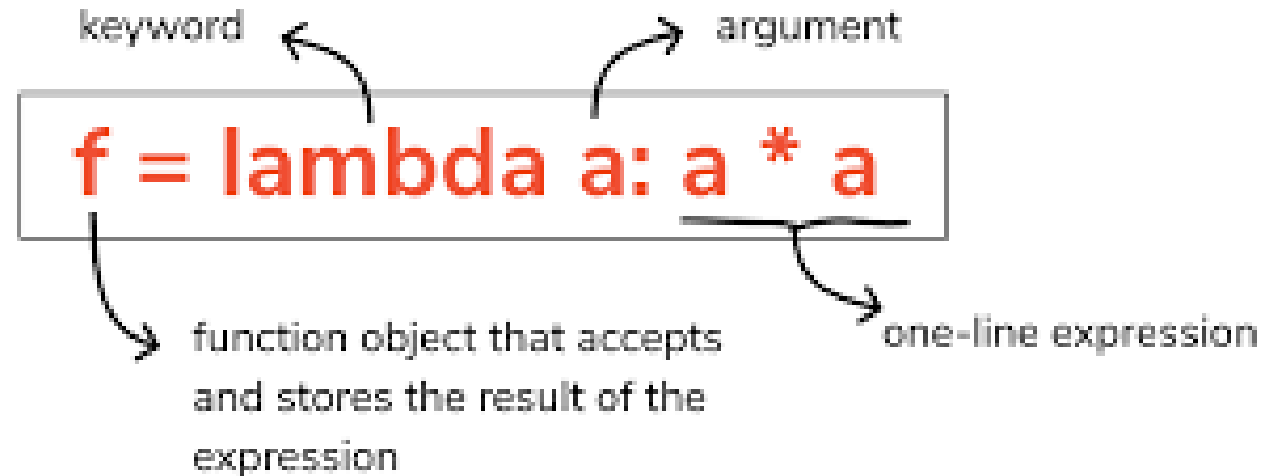f(2) = f(0) + f(1) = 0+1= 1
f(3) = f(1) + f(2) = 1+1 = 2
f(4) = f(2) + f(3) = 1+2 = 3
f(5) = f(3) + f(4) = 2+3 = 5

Lambda Function (anonymous)

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

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

	X_0	X_1	X_2	X_3	X_4	X_5
X	0	5	8	3	2	1

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

Plot Functions

Create a function to plot a given function with given range

Calculating derivative of a given function
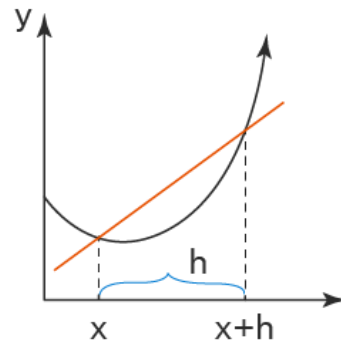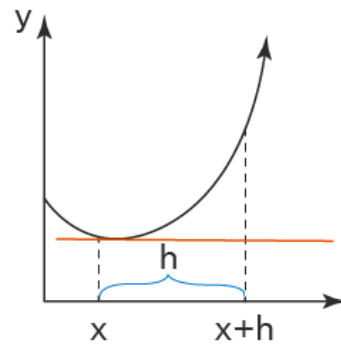
Assignment

Solve the equation

-4x + cos x + 2 = 0

Using newton Rapson method with initial guess and iterations specified

Newton-Raphson:

$$X_{n+1} = X_n - \frac{f(x_n)}{f'(x_n)}$$

Thank you

FOR ANY QUERIES PING ME ON SKYPE CHAT