# Day 16 – Lambda

* A lambda function is a small anonymous function & can take any number of arguments, but only have one expression.
* Python Lambda function is known as the anonymous function that is defined without a name. Python allows us to not declare the function in the standard manner, i.e., by using the **def** keyword. Rather, the anonymous functions are declared by using the **lambda** keyword

lambda arguments : expression

**Add 10 to argument a, and return the resul**t:

x = lambda m : m + 10  
print(x(5))

* a **bound variable** is an argument to a lambda function In contrast, a **free variable** is not bound and may be referenced in the body of the expression. A free variable can be a constant or a variable defined in the enclosing scope of a function.
* Lambda functions can take any number of arguments
* The power of lambda is better shown when you use them as an anonymous function inside another function, when you have a function definition that takes one argument, and that argument will be multiplied with an unknown number

**def myfunc(n):  
  return lambda a : a \* n  
  
mydoubler = myfunc(2)  
  
print(mydoubler(11))**

**Use lambda functions when an anonymous function is required for a short period of time.**

* The Python built-in **filter() function** accepts a function and a list as an argument. It provides an effective way to filter out all elements of the sequence. It returns the new sequence in which the function evaluates to **True**.

tuple(filter(lambda x:(x%3 == 0),lst))

* The **map() function** in Python accepts a function and a list. It gives a new list which contains all modified items returned by the function for each item.

list(map(lambda x:x\*\*2,lst))

Exercises:

* Create a lambda function that multiplies argument x with argument y
* Write a Python program to create Fibonacci series to n using Lambda
* Write a Python program that multiply each number of given list with a given number
* Write a Python program to find numbers divisible by 9 from a list of numbers
* Write a Python program to count the even numbers in a given list of integers