Database and Analytics Programming

Lab 3

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1) Using a lambda expression, complete the mul_by_num function. This function should take an argument and return a one argument function that multiplies any value passed to it by the original number. Its body must be one line long:

```
def mul_by_num(num):
    """
   Returns a function that takes one argument
   and returns num
    times that argument.
    >>> x = mul_by_num(5)
    >>> y = mul_by_num(2)
    >>> x(3)
    15
    >>> y(-4)
    -8
    """
    "*** YOUR CODE HERE ***"
    return ______
```

2) The Fibonacci numbers are the numbers in the following integer sequence.
   0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, ……..
   In mathematical terms, the sequence Fn of Fibonacci numbers is defined by the recurrence relation:

   Fn = Fn-1 + Fn-2 with seed values F0 = 0 and F1 = 1.

   Find the series of Fibonacci numbers using lambda function.

3) Create a script that check if a page is present on the server or return an error. Use the urllib seen during the lecture.

4) Write a program to get the current weather of a city given in input. You can use the following API documentation:

https://openweathermap.org/current

Hint: The GET request should have the following string appended at the end of the query for auth: `APPID=b35975e18dc93725acb092f7272cc6b8`

You should retrieve for the city:

```
Temperature: 12.32°C
Wind speed: 8.7 m/s
Description: moderate rain
Weather: Rain
```

5) Write a program to read a xml file people.xml and output a csv file and json file.