Questions on Lambda Fuctions

Arasalan Shaikh

Linkedin : https://www.linkedin.com/in/arasalanshaikh/

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1) Write a Python program to create a lambda function that adds 15 to a given number passed in as an argument, also create a lambda function that multiplies argument x with argument y and print the result.

In [1]:
```
a = lambda x : x + 15
a(10)
```

Out[1]:
```
25
```

In [2]:
```
b = lambda x, y: x * y
b(4, 5)
```

Out[2]:
```
20
```

2) Write a Python program to create a function that takes one argument, and that argument will be multiplies with an unknown given number.

In [3]:
```
def multiplier(n):
    return lambda x: x * n
```

In [4]:
```
output = multiplier(5)
print("Quintable of 3 is : ", output(3))
```

```
Quintable of 3 is :  15
```

3) Write a Python program to sort a list of tuple using lambda.

In [5]:
```
l = [("English", 88), ("Science", 90), ("Maths", 97), ("Social science", 82)]
sorted(l, key = lambda x:x[1])
```

Out[5]:
```
[('Social science', 82), ('English', 88), ('Science', 90), ('Maths', 97)]
```

4) Write a Python program to sort a list of dictionaries using lambda.

In [6]:
```
d = [{"make" : "Nokia",  "Model" : 216, "Color" : "Black"}, {"Make" : " Mi Max", "Mode
sorted(d, key = lambda x: x["Color"])
```

Out[6]:
```
[{'make': 'Nokia', 'Model': 216, 'Color': 'Black'},
 {'Make': 'Samsung', 'Model': 7, 'Color': 'Blue'},
 {'Make': ' Mi Max', 'Model': '2', 'Color': 'Gold'}]
```

5) Write a Python program to filter a list of integers using Lambda

In [7]:
```
lint = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

even = list(filter(lambda x : x % 2 == 0, lint))
even
```

Out[7]:
```
[2, 4, 6, 8, 10]
```

In [8]:
```
odd = list(filter(lambda x : x % 2 != 0, lint))
odd
```

Out[8]:
```
[1, 3, 5, 7, 9]
```

6) Write a Python program to square and cube every number in a given list of integers using Lambda

In [9]:
```
lint = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

square = list(map(lambda x: x**2, lint))
square
```

Out[9]:
```
[1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
```

In [10]:
```
cube = list(map(lambda x: x**3, lint))
cube
```

Out[10]:
```
[1, 8, 27, 64, 125, 216, 343, 512, 729, 1000]
```

7) Write a Python program to find if a given string starts with a given character using Lambda

In [11]:
```
start_with = lambda x: True if x.startswith("S") else False
start_with("Shubgam")
```

Out[11]:
```
True
```

8) Write a Python program to extract year, month, date and time using Lambda

In [12]:
```
import datetime as dt
now = dt.datetime.now()
```

In [13]:
```
year = now.year
month = now.month
day = now.day
time = now.time()
```

In [14]:
```
year
```

Out[14]:
```
2023
```

In [15]:
```
month
```

Out[15]:
```
5
```

In [16]:
```
day
```

Out[16]:
```
3
```

In [17]:
```
print(time)
```

```
19:42:47.164686
```

9) Write a Python program to ckeck wether a given string is number or not using Lambda

In [18]:
```
num_check = lambda x: x.replace(".", "").replace("-", "").isdigit()
```

In [19]:
```
num_check("-6.6789")
```

Out[19]:
```
True
```

In [20]:
```
num_check("A4567")
```

Out[20]:
```
False
```

11) Write a Python program to find intersection of two given arrays using Lambda

In [21]:
```
l1 = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
l2 = [2, 4, 6, 8, 11, 12]

intersection = list(filter(lambda x : x in l1, l2))
```

In [22]:
```
intersection
```

Out[22]:
```
[2, 4, 6, 8]
```

12) Write a Python program to rearrange positive and negative numbers in a given array using Lambda.

In [23]:
```
l = [-1, 2, -3, 5, 7, 8, 9,-10]
sorted(l, key = lambda x: x > 0, reverse = True)
```

Out[23]:
```
[2, 5, 7, 8, 9, -1, -3, -10]
```

13) Write a Pyton program to count the even, odd numbers is given array of integers using Lambda.

In [24]:
```
def count_Even_odd(l):
    even = len(list(filter(lambda x: x % 2 == 0, l)))

    print("Count of Even number in given list is : ", even)
    print("Count of odd number in given is : ", len(l) - even)
```

In [25]:
```
count_Even_odd([1, 2, 3, 4, 10, 5, 6, 7, 8, 9, 11, 13])
```

```
Count of Even number in given list is :  5
Count of odd number in given is :  7
```

14) Write a Python program to find the values of length six in a given list using Lambda.

In [26]:
```
weekdays = ["Monday", "Tuesday", "wednesday" "Thursday", "Friday", "Saturday", "Sunday
list(filter(lambda x: len(x) == 6, weekdays))
```

Out[26]:
```
['Monday', 'Friday', 'Sunday']
```

15) Write a Python program to add two given lists using map and lambda.

In [27]:
```
l1 = [3, 5, 7]
l2 = [1, 3, 5]

list(map(lambda x, y: x + y, l1, l2))
```

Out[27]:
```
[4, 8, 12]
```

16) Write a Python program to find the second lowest grade of any student(s) from the given names and grade of each student using lists and lambda.

In [28]:
```
l = [["S ROY", 1.0], ["B BOSE", 3.0], ["N KAR", 2.0], ["C DUTTA", 1.0], ["G GHOSH", 1.
list(sorted(l, key = lambda x: x[1], reverse = True))[1]
```

Out[28]:
```
['N KAR', 2.0]
```

17) Write a Python program to find numbers divisiable by nineteen or thirteen from a list of numbers using Lambda

In [29]:
```
l = [19, 65, 57, 39, 152, 639, 121, 44, 90, 190]
list(filter(lambda x: x % 13 == 0 or x % 19 == 0, l))
```

Out[29]:
```
[19, 65, 57, 39, 152, 190]
```

18) Write a Python program to find palidromes in a given list strings using Lambda.

In [30]:
```
l = ["php", "w3r", "Python", "abcd", "Java", "aaa"]
list(filter(lambda x: x if x == x[::-1] else "", l))
```

Out[30]:
```
['php', 'aaa']
```

19) Write a Python program to find all anagrams of string in a given list of string using lambda.

In [31]:
```
l = ["bcda", "abce", "cbda", "cbea", "adcb"]

from collections import Counter
```

```
list(filter(lambda x: x if Counter("abcd") == Counter(x) else  "", l))
```

Out[31]:
```
['bcda', 'cbda', 'adcb']
```

20) Write a Python program to find the numbers of a given string and store them in a list, display the numbers which are bigger than the length of the list in sorted form. Use Lambda function to solve the problem

In [32]:
```
string = "sdf 23 safs8 5 sdfsd8 sdfs 56 21sfs 20 5"
list1 = [i for i in string.split(' ')]
numbers = sorted([int(x) for x in list1 if x.isdigit()])

list(filter(lambda x : x if x > len(numbers) else '', numbers))
```

Out[32]:
```
[20, 23, 56]
```

21) Write a Python program that multiply each number of given list with a given number using lambda function. Print the result.

In [33]:
```
l = [2, 4, 6, 9, 11]
list(map(lambda x : x * 2, l))
```

Out[33]:
```
[4, 8, 12, 18, 22]
```

22) Write a Python program that sum the length of the names of given list of names after removing the names that starts with an lowercase letter. Use lambda function.

In [34]:
```
sample_names = ["sally", "Dylan", "rebecca", "Diana", "Joanne", "keith"]
filtered = list(filter(lambda x: x[0] == x[0].upper() and x[1:].lower(), sample_names)
len("".join(filtered))
```

Out[34]:
```
16
```

23) Write a Python program to calculate the sum of the positive and negative numbers of a given list of number using lambda function.

In [35]:
```
lint = [2, 4, -6, -9, 11, -12, 14, -5, 17]
def sum_P_N(l):
    sump = 0
    sumn = 0
    for positive in list(filter(lambda x: x if x >= 0 else "", l)):
        sump += positive
    for negative in list(filter(lambda x: x if x < 0 else "", l)):
        sumn += negative

    return "Sum if Positive is {} and sum of negative is {}".format(sump, sumn)

sum_P_N(lint)
```

Out[35]:
```
'Sum if Positive is 48 and sum of negative is -32'
```

24) Write a Python program to find the list with maximum and minimum length using lambda

In [36]:
```
l = [[0], [1, 3], [5, 7], [9, 11], [13, 15, 17]]

def max_length_list(l):
    max_length = max(len(x) for x in l)
    max_list = max(l, key = lambda i: len(i))
    return(max_length, max_list)

max_length_list(l)
```

Out[36]:
```
(3, [13, 15, 17])
```

In [37]:
```
def min_length_list(l):
    min_length = min(len(x) for x in l)
    min_list = min(l, key = lambda i: len(i))
    return(min_length, min_list)

min_length_list(l)
```

Out[37]:
```
(1, [0])
```

27) Write a Python program to sort each sublist of strings in a given list of lists using lambda

In [38]:
```
l = [["green", 'orange'], ["black", "white"], ["white", "black", "orange"]]

def sort_nestedlist(l):
    l1 = []
    for i in l:
        a = sorted(i, key = lambda x: x[0])
        l1.append(a)
    return l1
sort_nestedlist(l)
```

Out[38]:
```
[['green', 'orange'], ['black', 'white'], ['black', 'orange', 'white']]
```

28) Write a Python program to sort a given list of lists by length and value using lambda

In [39]:
```
l = [[2], [0], [1, 3], [0, 7], [9, 11], [13, 15, 17]]

sorted(l, key = lambda x: (len(x), x))
```

Out[39]:
```
[[0], [2], [0, 7], [1, 3], [9, 11], [13, 15, 17]]
```

29) Write a Python program to find the maximum value in a given heterogeneous list using lambda

In [40]:
```
l = ["Python", 3, 2, 4, 5, "version"]

max(list(filter(lambda x: isinstance(x, int), l)))
```

Out[40]:
```
5
```

30) Write a Python program to sort a given matrix in ascending order according to the sum of its rows using lambda

In [41]:
```
l = [[1, 2, 3], [2, 4, 5], [1, 1 ,1]]
sorted(l, key = lambda x: sum(x))
```

Out[41]:
```
[[1, 1, 1], [1, 2, 3], [2, 4, 5]]
```

31) Write a Python program to extract specified size of strings form a given list of string values using lambda.

In [42]:
```
l = ["Python", "list", "exercises", "practice", "solution"]

def ret_str_specifiedLen(list_input, length):
    return list(filter(lambda x: x if len(x) == length else "", list_input))

ret_str_specifiedLen(l, 8)
```

Out[42]:
```
['practice', 'solution']
```

32) Write a Python program to count float number in a given mixed list using lambda

In [43]:
```
l = [1, "abcd", 3.12, 1.2, 4, "xyz", 5, "pqr", 7, -5, -12.22]
list(filter(lambda x: type(x) == float, l))
```

Out[43]:
```
[3.12, 1.2, -12.22]
```

33) Write a Python program to check whether a given string contains a capital letter, a lower case letter, a number and a minimum length using lambda.

In [44]:
```
valid = lambda x: any(x.isupper() for x in x) and any(x.islower() for x in x) and any(
valid("Shubham12")
```

Out[44]:
```
True
```

34) Write a Python program to filter the height and width of students, which are stored in a dictionary using lambda

In [45]:
```
d = {"Cierra Vega" : (6.2, 70), "Alden Centrell" : (5.9, 65), "Kierra Gentry" : (6.0,
dict(filter(lambda x : (x[1][0], x[1][1]) > (6, 70), d.items()))
```

Out[45]:
```
{'Cierra Vega': (6.2, 70)}
```

35) Write a Python program to check whether a specified list is sorted or not using lambda

In [46]:
```
l = [1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 17]
```

```
def sorted_list_check(l):
    l_sorted = list(sorted(l, key = lambda x : x))
    if l_sorted == l:
        return True
    else:
        return False

sorted_list_check(l)
```

Out[46]: True

36) Write a Python program to extract the nth element form a given list of tuples using lambda

In [47]:
```
l  = [("Greyson Fulton", 98, 99), ("Brady Kent", 97, 96), ("Wyatt Knott", 91, 94), ("B

def filter_specific(l, n):
    return list(map(lambda x: (x[n]), l))

filter_specific(l, 0)
```

Out[47]: ['Greyson Fulton', 'Brady Kent', 'Wyatt Knott', 'Beau Turnbull']

37) Write a Python program to extract the nth element form a given list of tuples using lambda

In [48]:
```
filter_specific(l, 1)
```

Out[48]: [98, 97, 91, 94]

38) Write a Python program to remove all elements from a given list present in another list using lambda

In [49]:
```
l1 = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

l2 = [2, 4, 6, 8]

list(filter(lambda x: x not in l2, l1))
```

Out[49]: [1, 3, 5, 7, 9, 10]

OR

In [50]:
```
l1 = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

l2 = [2, 4, 6, 8]

list(filter(lambda x: x if x not in l2 else "", l1))
```

Out[50]: [1, 3, 5, 7, 9, 10]

39) Write a Python program to find the element of a given list of string that contain specific substring using lambda

In [51]:
```
l = ["red", "black", "white", "green", "orange"]
def sub_str_search(l, sub_str):
    return list(filter(lambda x: sub_str in x, l))

sub_str_search(l, "ack")
```

Out[51]:
```
['black']
```

In [52]:
```
sub_str_search(l, "bmw")
```

Out[52]:
```
[]
```

40) Write a Python program to find the nasted lists elements, which are present in another list using lambda

In [53]:
```
l1 = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14]
l2 = [[12, 18, 23, 25, 45], [7, 11, 19, 24, 28], [1, 5, 8, 18, 15, 16]]

[list(filter(lambda x: x in l1, sublist)) for sublist in l2]
```

Out[53]:
```
[[12], [7, 11], [1, 5, 8]]
```

41) Write a Python program to reverse the list elements using lambda

In [54]:
```
l = ["Red", "Green", "Blue", "White", "Black"]
list(map(lambda x: x[::-1], l))
```

Out[54]:
```
['deR', 'neerG', 'eulB', 'etihW', 'kcalB']
```

42) Write a Python program to calculate the product of a given list of numbers using lambda

In [55]:
```
from functools import reduce
l = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

reduce(lambda x, y: x*y, l)
```

Out[55]:
```
3628800
```

43) Write a Python program to multiply all the numbers in a given list using lambda

In [56]:
```
l = [4, 3, 2, 2, -1, 18]

reduce(lambda x, y : x*y, l)
```

Out[56]:
```
-864
```

In [57]:
```
l1 = [2.2, 4.12, 6.6, 8.1, 8.3]
round(reduce(lambda x, y: x*y, l1), 2)
```

Out[57]:
```
4021.86
```

44) Write a Python program to calculate the average value of the numbers in a given tuple of tuples using lambda.

In [58]:
```
t = ((10, 10, 10), (30, 45, 56), (81, 80, 39), (1, 2, 3))
tuple(map(lambda x : sum(x) / float(len(x)), zip(*t)))
```

Out[58]:
```
(30.5, 34.25, 27.0)
```

45) Write a Python program to convert string element to integer inside a given tuple using lambda.

In [59]:
```
t = (('233', 'ABCD', '33'), ('1416', 'EFGH', '55'), ('2345', 'WERT', '34'))
tuple(map(lambda x : (int(x[0]), int(x[2])), t))
```

Out[59]:
```
((233, 33), (1416, 55), (2345, 34))
```

46) Write a Python program to find index position and value of the maximum and minimum values in a given list of numbers using lambda.

In [60]:
```
l = [12, 33, 23, 10.11, 67, 89, 45, 66.7, 23, 12, 11, 10.25, 54]
max(enumerate(l), key = lambda x : x[1])
```

Out[60]:
```
(5, 89)
```

In [61]:
```
min(enumerate(l), key = lambda x : x[1])
```

Out[61]:
```
(3, 10.11)
```

47) Write a Python program to sort a given mixed list of integers and strings using lambda. Numbers must be sorted before strings.

In [62]:
```
l = [19, 'red', 12, 'green', 'blue', 10, 'white', 'green', 1]
list(sorted(l, key = lambda x : str(x)))
```

Out[62]:
```
[1, 10, 12, 19, 'blue', 'green', 'green', 'red', 'white']
```

48) Write a Python program to sort a given list of strings(numbers) numerically using lambda.

In [63]:
```
l = ['4', '12', '45', '7', '0', '100', '200', '-12', '-500']
list(sorted(l , key = lambda x : int(x)))
```

Out[63]:
```
['-500', '-12', '0', '4', '7', '12', '45', '100', '200']
```

49) Write a Python program to count the occurrences of the items in a given list using lambda.

In [64]:
```
l = [3, 4, 5, 8, 0, 3, 8, 5, 0, 3, 1, 5, 2, 3, 4, 2]
for i,j in enumerate(set(l)):
    print((l[i], l.count(i)))
```

```
(3, 2)
(4, 1)
(5, 2)
(8, 4)
(0, 2)
(3, 3)
(8, 0)
```

50) Write a Python program to remove specific words from a given list using lambda

In [65]:
```
l1 = ['orange', 'red', 'green', 'blue', 'white', 'black']
l2 = ['orange', 'black']
list(filter(lambda x: x not in l2 , l1))
```

Out[65]:
```
['red', 'green', 'blue', 'white']
```

51) Write a Python program to find the maximum and minimum values in a given list of tuples using lambda function.

In [66]:
```
l = [('V', 62), ('VI', 68), ('VII', 72), ('VIII', 70), ('IX', 74), ('X', 65)]
(max(l, key = lambda x : x[1])[1], min(l, key = lambda x : x[1])[1])
```

Out[66]:
```
(74, 62)
```

52) Write a Python program to remove None value from a given list using lambda function.

In [67]:
```
l = [12, 0, None, 23, None, -55, 234, 89, None, 0, 6, -12]
list(filter(lambda x : x != None, l))
```

Out[67]:
```
[12, 0, 23, -55, 234, 89, 0, 6, -12]
```