Questions on Lambda Functions

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Credits W3School for questions

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 [71]:
```
a = lambda x : x + 15
a(10)
```

Out[71]:
```
25
```

In [72]:
```
b = lambda x, y : x * y
b(4,5)
```

Out[72]:
```
20
```

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

In [73]:
```
def multiplier(n) :
    return lambda x : x * n
```

In [74]:
```
output = multiplier(5)

print("Quintuple of 3 is: " ,output(3))
```

```
Quintuple of 3 is:  15
```

3. Write a Python program to sort a list of tuples using Lambda.

In [75]:
```
l = [('English', 88), ('Science', 90), ('Maths', 97), ('Social sciences', 82)]

sorted(l, key = lambda x : x[1])
```

Out[75]:
```
[('Social sciences', 82), ('English', 88), ('Science', 90), ('Maths', 97)]
```

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

In [76]:
```
d = [{'make': 'Nokia', 'model': 216, 'color': 'Black'}, {'make': 'Mi Max', 'model': '2', 'color': 'Gold'}, {'

sorted(d, key = lambda x : x['color'])
```

Out[76]:
```
[{'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 [77]:
```
lint = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

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

Out[77]:
```
[2, 4, 6, 8, 10]
```

In [78]:
```
odd = list(filter(lambda x : x % 2 != 0 , lint))
odd
```

Out[78]:
```
[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 [79]:
```
lint = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

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

Out[79]:
```
[1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
```

In [80]:
```
cube = list(map(lambda x : x ** 3, lint))
cube
```

Out[80]:
```
[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 [81]:
```
start_with = lambda x : True if x.startswith('S') else False

start_with("Shubham")
```

Out[81]:
```
True
```

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

In [82]:
```
import datetime as dt

now = dt.datetime.now()
```

In [83]:
```
year = now.year
month = now.month
day = now.day
time = now.time()
```

In [84]:
```
year
```

Out[84]:
```
2022
```

In [85]:
```
month
```

Out[85]:
```
9
```

In [86]:
```
day
```

Out[86]:
```
5
```

In [87]:
```
print(time)
```

```
16:51:59.237346
```

9. Write a Python program to check whether a given string is number or not using Lambda.

In [88]:
```
num_check  = lambda x : x.replace('.','').replace('-','').isdigit()
```

In [89]:
```
num_check('-6.6789')
```

Out[89]:
```
True
```

In [90]:
```
num_check('A4567')
```

Out[90]:
```
False
```

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

In [91]:
```
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 [92]:
```
intersection
```

Out[92]:
```
[2, 4, 6, 8]
```

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

In [93]:
```
l = [-1, 2, -3, 5, 7, 8, 9, -10]

sorted( l, key = lambda x: x > 0, reverse= True)
```

Out[93]:
```
[2, 5, 7, 8, 9, -1, -3, -10]
```

13. Write a Python program to count the even, odd numbers in a given array of integers using Lambda.

In [94]:
```
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 list is: ", len(l) - even)
```

```
Requirement already satisfied: PyLaTeX in c:\users\shubham\anaconda3\lib\site-packages (1.4.1)
Requirement already satisfied: ordered-set in c:\users\shubham\anaconda3\lib\site-packages (from PyLaTeX) (4.
1.0)
```

In [95]:
```
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 list is:  7
```

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

In [96]:
```
weekdays = ['Monday', 'Tuesday', 'Wednesday', 'Thursday', 'Friday', 'Saturday', 'Sunday']

list(filter(lambda x : len(x) == 6 , weekdays))
```

Out[96]:
```
['Monday', 'Friday', 'Sunday']
```

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

In [97]:
```
l1 = [3,5,7]
l2 = [1,3,5]

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

Out[97]:
```
[4, 8, 12]
```

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

In [98]:
```
l = [['S ROY', 1.0], ['B BOSE', 3.0], ['N KAR', 2.0], ['C DUTTA', 1.0], ['G GHOSH', 1.0]]

list(sorted(l, key = lambda x : x[1], reverse= True))[1]
```

Out[98]:
```
['N KAR', 2.0]
```

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

In [99]:
```
l = [19, 65, 57, 39, 152, 639, 121, 44, 90, 190]

list(filter(lambda x : x % 13 == 0 or x % 19 == 0 , l))
```

Out[99]:
```
[19, 65, 57, 39, 152, 190]
```

18. Write a Python pro

gram to find palindromes in a given list of strings using Lambda.

In [100…
```
l = ['php', 'w3r', 'Python', 'abcd', 'Java', 'aaa']

list(filter(lambda x : x if x == x[::-1] else '', l))
```

Out[100]:
```
['php', 'aaa']
```

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

In [101…
```
l = ['bcda', 'abce', 'cbda', 'cbea', 'adcb']

from collections import Counter

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

Out[101]:
```
['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 [102…
```
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[102]:
```
[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 [103…
```
l = [2, 4, 6, 9, 11]

list(map(lambda x : x * 2, l))
```

Out[103]:
```
[4, 8, 12, 18, 22]
```

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

In [104…
```
sample_names = ['sally', 'Dylan', 'rebecca', 'Diana', 'Joanne', 'keith']

filtered = list(filter(lambda x: x[0] == x[0].upper() and x[1:] == x[1:].lower(), sample_names))

len("".join(filtered))
```

Out[104]:
```
16
```

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

In [105…
```
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 of Positive is {} and sum of negative is {}".format(sump, sumn)

sum_P_N(lint)
```

Out[105]:
```
'Sum of Positive is 48 and sum of negative is -32'
```

26. Write a Python program to find the list with maximum and minimum length

using lambda.

In [106…
```
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[106]:
```
(3, [13, 15, 17])
```

In [107…
```
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[107]:
```
(1, [0])
```

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

In [108…
```
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[108]:
```
[['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 [109…
```
l = [[2], [0], [1, 3], [0, 7], [9, 11], [13, 15, 17]]

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

Out[109]:
```
[[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 [110…
```
l = ['Python', 3, 2, 4, 5, 'version']

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

Out[110]:
```
5
```

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

In [111…
```
l = [[1, 2, 3], [2, 4, 5], [1, 1, 1]]

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

Out[111]:
```
[[1, 1, 1], [1, 2, 3], [2, 4, 5]]
```

31. Write a Python program to extract specified size of strings from a give list of string values using lambda.

In [112…
```
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[112]:
```
['practice', 'solution']
```

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

In [113…
```
l = [1, 'abcd', 3.12, 1.2, 4, 'xyz', 5, 'pqr', 7, -5, -12.22]

list(filter(lambda x: type(x) == float, l))
```

Out[113]:
```
[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 [114…
```
valid = lambda x : any(x.isupper() for x in x) and any(x.islower() for x in x) and any(x.isdigit() for x in x

valid("Shubham12")
```

Out[114]:
```
True
```

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

In [115…
```
d = {'Cierra Vega': (6.2, 70), 'Alden Cantrell': (5.9, 65), 'Kierra Gentry': (6.0, 68), 'Pierre Cox': (5.8, 6

dict(filter(lambda x : (x[1][0], x[1][1]) > (6, 70) , d.items()))
```

Out[115]:
```
{'Cierra Vega': (6.2, 70)}
```

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

In [116…
```
l = [1, 2, 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[116]:
```
True
```

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

In [117…
```
l = [('Greyson Fulton', 98, 99), ('Brady Kent', 97, 96), ('Wyatt Knott', 91, 94), ('Beau Turnbull', 94, 98)]

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

filter_specific(l, 0)
```

Out[117]:
```
['Greyson Fulton', 'Brady Kent', 'Wyatt Knott', 'Beau Turnbull']
```

In [118…
```
filter_specific(l, 1)
```

Out[118]:
```
[98, 97, 91, 94]
```

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

In [119…
```
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[119]:
```
[1, 3, 5, 7, 9, 10]
```

OR

In [120…
```
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[120]:
```
[1, 3, 5, 7, 9, 10]
```

39. Write a Python program to find the elements of a given list of strings that contain specific substring using lambda.

In [121…
```
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[121]:
```
['black']
```

In [122…
```
sub_str_search(l, 'bmw')
```

Out[122]:
```
[]
```

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

In [123…
```
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[123]:
```
[[12], [7, 11], [1, 5, 8]]
```

In [124…
```
### 41
```

In [125…
```
l = ['Red', 'Green', 'Blue', 'White', 'Black']

list(map(lambda x : x[::-1] , l))
```

Out[125]:
```
['deR', 'neerG', 'eulB', 'etihW', 'kcalB']
```

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

In [126…
```
from functools import reduce
l = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

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

Out[126]:
```
3628800
```

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

In [127…
```
l = [4, 3, 2, 2, -1, 18]

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

Out[127]:
```
-864
```

In [128…
```
l1 = [2.2, 4.12, 6.6, 8.1, 8.3]
round(reduce(lambda x,y : x*y, l1), 2)
```

Out[128]:
```
4021.86
```

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

In [129…
```
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[129]:
```
(30.5, 34.25, 27.0)
```

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

In [130…
```
t = (('233', 'ABCD', '33'), ('1416', 'EFGH', '55'), ('2345', 'WERT', '34'))

tuple(map(lambda x : (int(x[0]), int(x[2])), t))
```

Out[130]:
```
((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 [131…
```
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[131]:
```
(5, 89)
```

In [132…
```
min(enumerate(l), key = lambda x : x[1])
```

Out[132]:
```
(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 [133…
```
l = [19, 'red', 12, 'green', 'blue', 10, 'white', 'green', 1]

list(sorted(l, key = lambda x : str(x)))
```

Out[133]:
```
[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 [134…
```
l = ['4', '12', '45', '7', '0', '100', '200', '-12', '-500']

list(sorted(l , key = lambda x : int(x)))
```

Out[134]:
```
['-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 [135…
```
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 [136…
```
l1 = ['orange', 'red', 'green', 'blue', 'white', 'black']
l2 = ['orange', 'black']

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

Out[136]:
```
['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 [137…
```
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[137]:
```
(74, 62)
```

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

In [138…
```
l = [12, 0, None, 23, None, -55, 234, 89, None, 0, 6, -12]

list(filter(lambda x : x != None, l))
```

Out[138]:
```
[12, 0, 23, -55, 234, 89, 0, 6, -12]
```

In [ ]: