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NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL) » Programming, Data Structures And Algorithms Using Python (course)

Announcements (announcements)

About the Course (https://swayam.gov.in/nd1_noc19_cs40/preview) Ask a Question (forum)

Progress (student/home) Mentor (student/mentor)

Course outline

- **How to access the portal**
- **Week 1: Introduction**
- **Week 1 Quiz**
- **Week 2: Basics of Python**
- **Week 2 Quiz**
- **Week 2 Programming Assignment**
- **Week 3: Lists, inductive function**

Online Test 1, Question 8

Due on 2019-09-26, 11:30 IST

definitions, sorting

Week 3 Programming Assignment

Week 4: Sorting, Tuples, Dictionaries, Passing Functions, List Comprehension

Week 4 Quiz

Week 4 Programming Assignment

Week 5: Exception handling, input/output, file handling, string processing

Week 5 Programming Assignment

Week 6: Backtracking, scope, data structures; stacks, queues and heaps

Week 6 Quiz

Week 7: Classes, objects and user defined datatypes

Week 7 Quiz

Instructions

This is the first of two online programming tests.

- These tests account for 25% of the total evaluation for the course.
- The duration of the test is 2 hours.
- The first test will be from 9:30-11:30 am and the second from 8:00-10:00 pm, on Thursday, 26 September 2019.
- You can attempt either of the tests. The best score will be counted..

Note: In this question, you have to write a Python function. Your function should return the value specified in the problem description. Do not print any messages or diagnostic information. Your code wll be evaluated automatically by comparing your program's output with the expected output, so any spurious output from your program will cause your answer to be reported as wrong. You can assume that inputs to your functions will be of the correct type, as specified in the question.

There are some "public" test cases where you can see how your program does when you use "Compile and Run". Finally, you should "Submit" your code for evaluation. Your solution will be checked against "private" test cases, which you cannot see. You will get a score on 100 based on how many private test cases you solve correctly.

Question 8

Write a Python function `maxaggregate(l)` that takes a list of pairs of the form (name,score) as argument, where name is a string and score is an integer. Each pair is to be interpreted as the score of the named player. For instance, an input of the form [('Kohli',73),('Ashwin',33),('Kohli',7), ('Pujara',122),('Ashwin',90)] represents two scores of 73 and 7 for Kohli, two scores of 33 and 90 for Ashwin and one score of 122 for Pujara. Your function should compute the players who have the highest aggregate score (aggegrate = total, so add up all scores for that name) and return the list of names of these players as a list, sorted in alphabetical order. If there is a single player, the list will contain a single name.

For instance, `maxaggregate([('Kohli',73),('Ashwin',33), ('Kohli',7),('Pujara',122),('Ashwin',90)])` should return `['Ashwin']` because the aggregate score of Kolhi is 80, of Ashwin is 123 and of Pujara is 122, of which 123 is the highest.

Week 8: Dynamic programming, wrap-up

Week 8 Programming Assignment

Download videos

Text Transcripts

Online Programming Test - Sample

Online Programming Test 1, 26 Sep 2019, 09:30-11:30

- Online Test 1, Question 1 (/noc19_cs40/progassignment?name=113)
- Online Test 1, Question 2 (/noc19_cs40/progassignment?name=114)
- Online Test 1, Question 3 (/noc19_cs40/progassignment?name=115)
- Online Test 1, Question 4 (/noc19_cs40/progassignment?name=116)
- Online Test 1, Question 5 (/noc19_cs40/progassignment?name=117)
- Online Test 1, Question 6 (/noc19_cs40/progassignment?name=118)

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	maxaggregate([('Kohli',73),('Ashwin',33),('Kohli',7),('Pujara',142),('Ashwin',90)])	['Pujara']\n	['Pujara']\n	Passed
Test Case 2	maxaggregate([('Kohli',73),('Ashwin',33),('Kohli',7),('Pujara',142),('Ashwin',109)])	['Ashwin', 'Pujara']\n	['Ashwin', 'Pujara']\n	Passed
Test Case 3	maxaggregate([('Kohli',73)])	['Kohli']\n	['Kohli']\n	Passed
Test Case 4	maxaggregate([('Kohli',73),('Ashwin',33),('Kohli',69),('Pujara',142),('Ashwin',109)])	['Ashwin', 'Kohli', 'Pujara']\n	['Ashwin', 'Kohli', 'Pujara']\n	Passed

Due Date Exceeded.

4 out of 4 tests passed.

You scored 100.0/100.

Your last recorded submission was :

```
from collections import defaultdict
def maxaggregate(l):
    result = defaultdict(list)
    for i, j in l:
        result[i].append(j)
    result = dict(result)
    aggregate_score = {}
    for k, v in result.items():
        aggregate_score.update({k:sum(v)})
    itemMaxValue = max(aggregate_score.items(), key=lambda x: x[1])
    listOfKeys = list()
    for key, value in aggregate_score.items():
        if value == itemMaxValue[1]:
            listOfKeys.append(key)
    listOfKeys.sort()

    return listOfKeys
import ast

def tolist(inp):
  inp = ast.literal_eval(inp)
  return (inp)

fncall = input()
lparen = fncall.find("(")
rparen = fncall.rfind(")")
fname = fncall[:lparen]
```

- Online Test 1, Question 7 (/noc19_cs40/progassig name=119)
- **Online Test 1, Question 8 (/noc19_cs40/progassignment? name=120)**

```
28 farg = fncall[lparen+1:rparen]
29
30 if fname == "maxaggregate":
31   arg = tolist(farg)
32   print(maxaggregate(arg))
```