Online Test 2, Question 8

Due on 2021-03-09, 22:00 IST

Question 8

Write a Python function `maxdifference(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),('Kohli',66),('Ashwin',90)]` represents three scores of 73, 66 and 7 for Kohli, two scores of 33 and 90 for Ashwin and one score of 122 for Pujara. Your function should compute the difference between the maximum and minimum score for each player and return the list of players for whom this difference is maximum. The list should be sorted in ascending order by the name of the player.

For instance, `maxdifference([('Kohli',73),('Ashwin',33), ('Kohli',7),('Pujara',122),('Kohli',66),('Ashwin',90)]))` should return `['Kohli']` because Kohli's difference is 66 (73 - 7), Ashwin's difference is 57 (90 - 33) and Pujara's difference is 0 (122 - 122).

Sample Test Cases

	Input	Output
Test Case 1	`maxdifference([('Kohli',73),('Ashwin',33),('Kohli',7), ('Purjara',22),('Pujara',88),('Ashwin',90)])`	`['Kohli']`
Test Case 2	`maxdifference([('Kohli',73),('Ashwin',33),('Kohli',82), ('Kohli',7),('Pujara',100),('Pujara',25),('Pujara',35), ('Ashwin',108)])`	`['Ashwin', 'Kohli', 'Pujara']`

Test Case 3	`maxdifference([('Kohli',73)])`	`['Kohli']`
Test Case 4	`maxdifference([('Kohli',73),('Ashwin',33),('Kohli',69),('Pujara',36),('Pujara',60),('Ashwin',57)])`	`['Ashwin', 'Pujara']`
Test Case 5	`maxdifference([('Kohli',73),('Ashwin',23),('Kohli',17),('Pujara',142),('Kohli',45),('Ashwin',60)])`	`['Kohli']`
Test Case 6	`maxdifference([('Kohli',73),('Ashwin',32),('Pujara',75),('Ashwin',44),('Kohli',7),('Pujara',22),('Ashwin',98),('Kolhi',68)])`	`['Ashwin', 'Kohli']`

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

Sample solutions (Provided by instructor)

```
def maxdifference(l):
  maximum = {}
  minimum = {}
  for (name,score) in l:
    try:
      maximum[name] = max(maximum[name],score)
      minimum[name] = min(minimum[name],score)
    except KeyError:
      maximum[name] = score
      minimum[name] = score

  maxdiff = -1
  maxlist = []

  for name in maximum.keys():
    thisdiff = maximum[name] - minimum[name]
    if thisdiff == maxdiff:
      maxlist.append(name)
    if thisdiff > maxdiff:
      maxdiff = thisdiff
      maxlist = [name]

  return(sorted(maxlist))

import ast

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

fncall = input()
lparen = fncall.find("(")
rparen = fncall.rfind(")")
fname = fncall[:lparen]
farg = fncall[lparen+1:rparen]

if fname == "maxdifference":
  arg = tolist(farg)
  print(maxdifference(arg))

```

- **Week 7: Classes, objects and user defined datatypes ()**
- **Week 7 Quiz ()**
- **Week 8: Dynamic programming, wrap-up ()**
- **Week 8 Programming Assignment ()**
- **Text Transcripts ()**
- **Books ()**
- **Download Videos ()**
- **Online Programming Test - Sample ()**
- **Online Programming Test 1, 01 Dec 2020, 10:00-12:00 ()**
- **Online Programming Test 2, 01 Dec 2020, 20:00-22:00 ()**
- **Online Programming Test 1, 09 Mar 2021, 10:00-12:00 ()**

Online Programming Test 2, 09 Mar 2021, 20:00-22:00 ()

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