

Name of Participant: Thummuru Sreenivasulu

Reg_no: 182023029

Course: AIML

Date: 12.02.2024

Assignment-2

Question:1

Task:-

Given the names and grades for each student in a class of N students, store them in a nested list and print the name(s) of any student(s) having the second lowest grade.

Note: If there are multiple students with the second lowest grade, order their names alphabetically and print each name on a new line.

Example

Records = [[“chi”, 20.0]], [“beta”, 50.0], [“alpha”, 50.0]

The ordered list of scores is [20.0, 50.0], so the second lowest score is 50.0. There are two students with that score: [“beta”, “alpha”]. Ordered alphabetically, the names are printed as:

```
alpha
```

```
beta
```

Input Format

The first line contains an integer , n, the number of students.

The 2N subsequent lines describe each student over lines.

- The first line contains a student’s name.
- The second line contains their grade.

Constraints

- $2 \leq N \leq 5$
- There will always be one or more students having the second lowest grade.

Solution – Python

```
if __name__ == '__main__':  
    alist = []  
    for i in range(int(input('value:'))):  
        name = input('enter_name:')  
        score = float(input('score:'))  
        alist.append([name, score])  
  
    second_highest = sorted(set([score for name, score in  
    alist]))[1]  
  
    print('\n'.join(sorted([name for name, score in alist if score  
    == second_highest])))
```

OUTPUT:

```
3.py - C:/Users/sreenivas/Desktop/SRINU/AI/AIML/3.py (3.12.1)
File Edit Format Run Options Window Help
if __name__ == '__main__':
    alist = []
    for i in range(int(input('value:'))):
        name = input('enter_name:')
        score = float(input('score:'))
        alist.append([name, score])
    second_highest = sorted(set([score for name, score in alist]))[1]
    print('\n'.join(sorted([name for name, score in alist if score == second_highest])))
```

```
IDLE Shell 3.12.1
Python 3.12.1 (tags/v3.12.1:2305ca5, Dec 7 2023, 22:03:25) [MSC v.1937 64 bit (AMD 64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\sreenivas\Desktop\SRINU\AI\AIML\3.py
value:4
enter_name:sreenu
score:40.5
enter_name:srikanth
score:40.5
enter_name:madhu
score:20
enter_name:giri
score:50
sreenu
srikanth
>>>
```

Explanation:

There are 4 students in this class whose names and grades are assembled to build the following list:

```
python students = [['sreenu', 40.5], ['srikanth', 40.5], [ 'madhu', 20], ['giri, 50]]
```

The lowest grade of 20 belongs to madhu. The second lowest grade of 40.5 belongs to both sreenu and srikanth, so we order their names alphabetically and print each name on a new line.

Question:2

Task:-

Given an array of integers `nums` and an integer `target`, return *indices of the two numbers such that they add up to `target`*.

You may assume that each input would have ***exactly one solution***, and you may not use the *same* element twice.

You can return the answer in any order.

Example 1:

Input: `nums = [2,7,11,15], target = 9`

5

Solution – Python

```
def twoSum(self, nums, target):  
    seen = {}  
    for i, v in enumerate(nums):  
        remaining = target - v  
        if remaining in seen:  
            return [seen[remaining], i]  
        seen[v] = i  
    return []
```

class Solution(object):

def twoSum(self, nums, target):

d = {}

```
for i, num in enumerate(nums):
```

```
    t = target - num
```

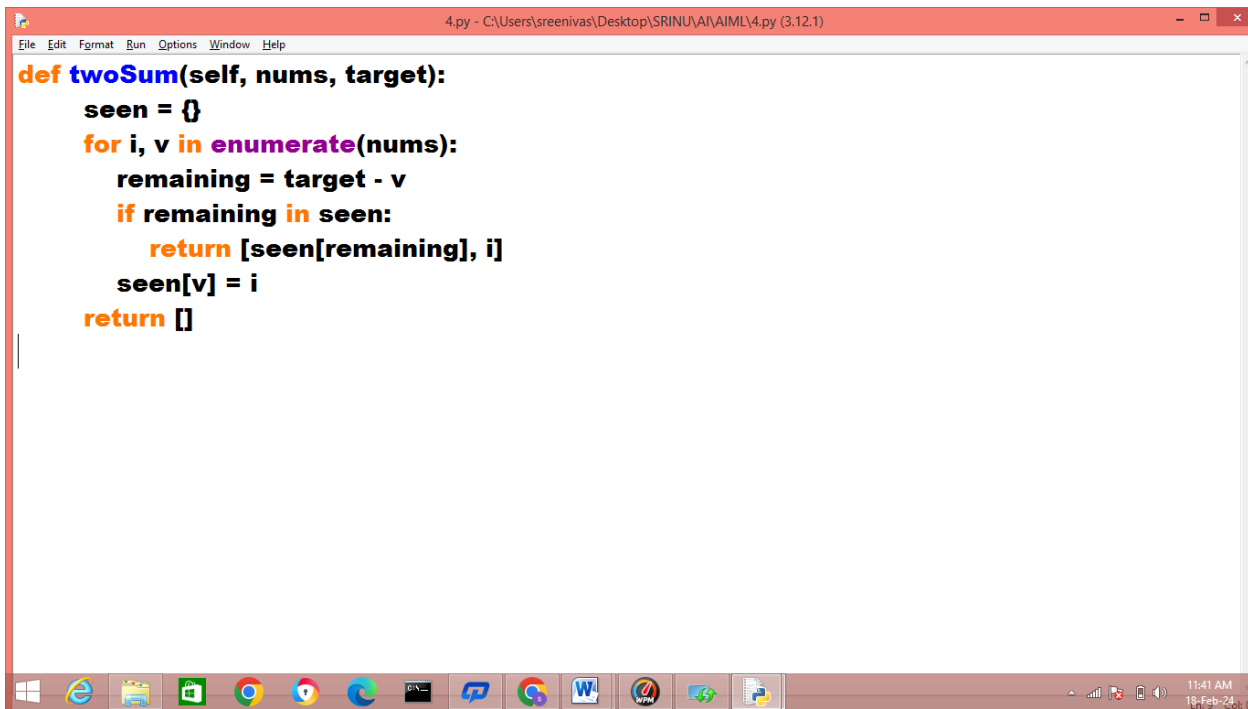
```
    if t in d:
```

```
        return [d[t], i]
```

```
    d[num] = i
```

```
return []
```

OUTPUT:

A screenshot of a Python IDE window titled '4.py - C:\Users\sreenivas\Desktop\SRINU\AI\AIML\4.py (3.12.1)'. The code in the editor is:

```
def twoSum(self, nums, target):  
    seen = {}  
    for i, v in enumerate(nums):  
        remaining = target - v  
        if remaining in seen:  
            return [seen[remaining], i]  
        seen[v] = i  
    return []
```

The IDE has a menu bar with 'File', 'Edit', 'Format', 'Run', 'Options', 'Window', and 'Help'. The Windows taskbar is visible at the bottom with various application icons and a system tray showing the time as 11:41 AM on 18-Feb-24.

Input: nums = [2, 7, 11, 15], target = 9

Output: [0, 1]

Output: Because nums [0] + nums [1] == 9, we return [0, 1].

Constraints:

2 <= nums. Length <= 10⁴

~~$-10^9 \leq \text{nums}[i] \leq 10^9$~~

$-10^9 \leq \text{target} \leq 10^9$

Only one valid answer exists.