manikandan26052004 Create README.md 0808d9a · 8 minutes ago

223 lines (162 loc) · 6.74 KB

🔢 Hackerrank:# 🏆 Student Topper Finder

This Python program helps determine the **top-performing student** based on the total marks across five subjects. It uses a dictionary to store each student's marks and identifies the topper using simple calculations and built-in functions.

🎯 Aim

To maintain a dictionary of students with their marks in five subjects, calculate their **total marks**, store them in a new dictionary, and identify the **student with the highest total (topper)**.

🧠 Algorithm

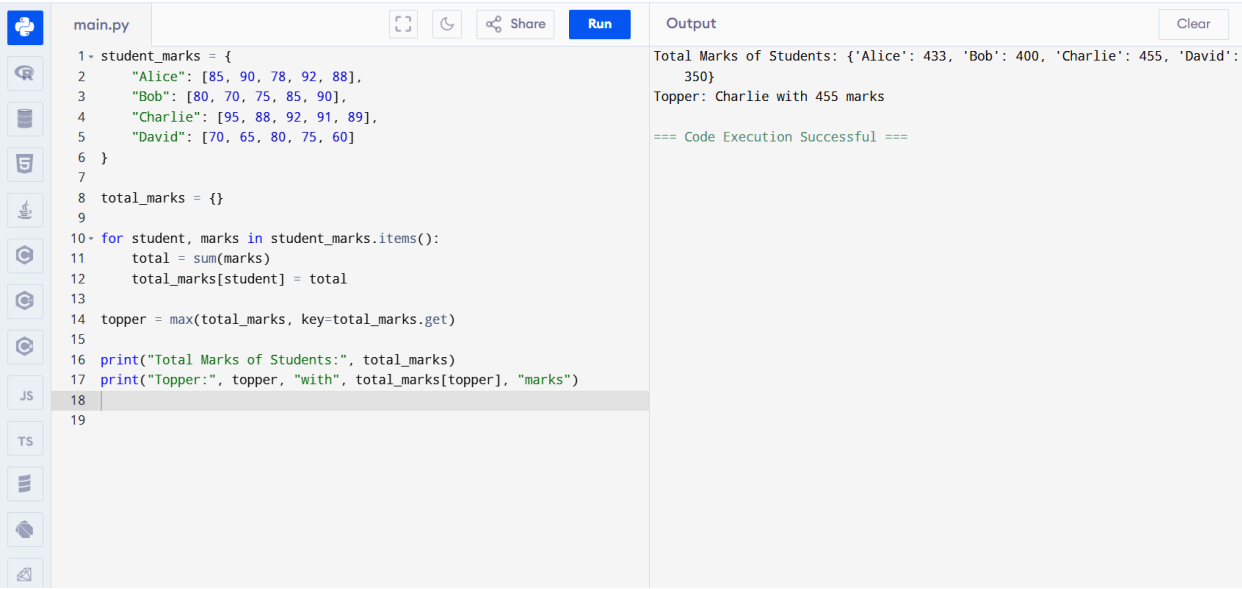
1. **Start** the program.
2. Create a dictionary `student_marks`:
   - Keys → Student names.
   - Values → List of marks in five subjects.
3. Initialize an empty dictionary `total_marks`.
4. Loop through `student_marks`:
   - Calculate the total marks using `sum()`.
   - Store the result in `total_marks`.
5. Use `max()` on `total_marks` to find the student with the highest total.

6. Print:
    - The `total_marks` dictionary.
    - The **topper's name and score**.

💻 PROGRAM:

```
student_marks = {
    "Alice": [85, 90, 78, 92, 88],
    "Bob": [80, 70, 75, 85, 90],
    "Charlie": [95, 88, 92, 91, 89],
    "David": [70, 65, 80, 75, 60]
}

total_marks = {}

for student, marks in student_marks.items():
    total = sum(marks)
    total_marks[student] = total

topper = max(total_marks, key=total_marks.get)

print("Total Marks of Students:", total_marks)
print("Topper:", topper, "with", total_marks[topper], "marks")
```

OUTPUT



RESULT

Thus, the program is executed successfully

🔄 Hackerrank : # 📦 Python Word Wrap

ensuring each line does not exceed a specified width.

🎯 Aim

To write a Python function that takes a long string and a specified width, and returns the string formatted with line breaks such that each line has **at most the given width**.

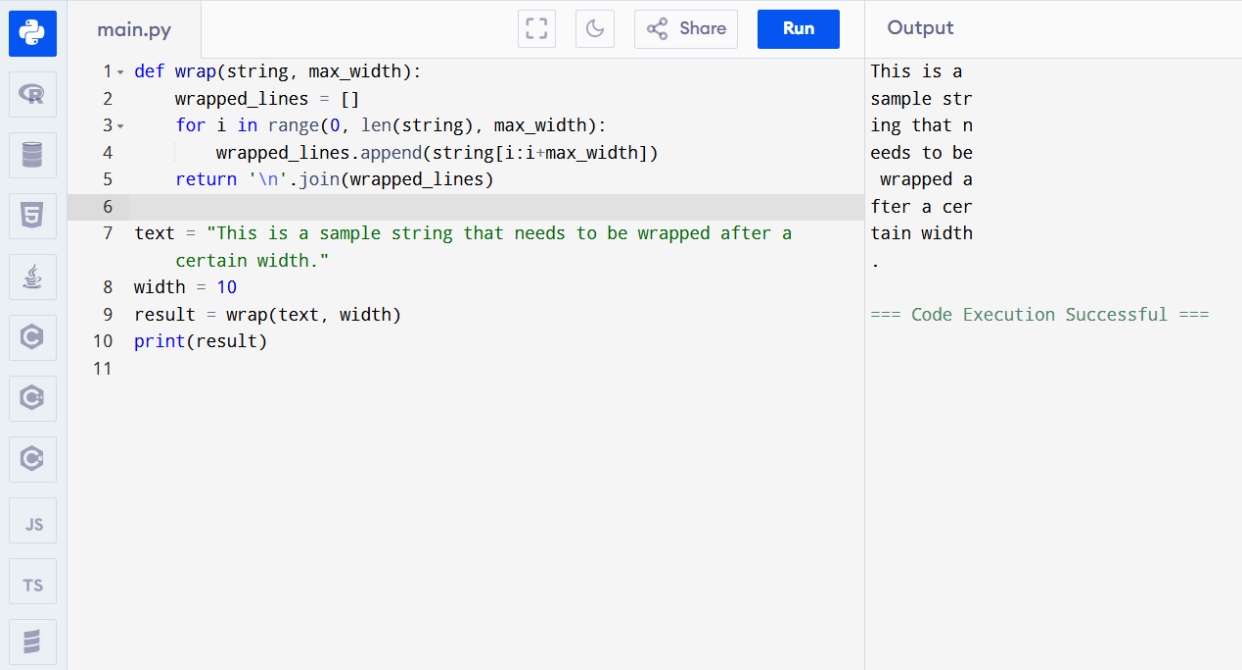
🧠 Algorithm

1. **Start** the program.
2. Define a function `wrap(string, max_width)`:
   - Create an empty list `wrapped_lines` to store parts of the string.
   - Loop through the string using steps of `max_width`.
   - In each iteration, extract a substring of length `max_width`.
   - Append this substring to the list.
3. Join the list with `\n` to create the final string.
4. Return the result.
5. **End** the program.

🧪 Program

```
def wrap(string, max_width):
    wrapped_lines = []
    for i in range(0, len(string), max_width):
        wrapped_lines.append(string[i:i+max_width])
    return '\n'.join(wrapped_lines)

text = "This is a sample string that needs to be wrapped after a certain
width."
width = 10
result = wrap(text, width)
print(result)
```

Sample Output



Result

Thus, the program is executed successfully

🎓 Hackerrank:Python Program to Find Students with the Second Lowest Grade

This program reads student names and their corresponding grades, identifies the **second lowest grade**, and prints the names of all students who have that grade in **alphabetical order**.

🎯 Aim

To write a Python program to:

- Read a list of students and their grades.
- Identify the second lowest grade.
- Print the names of students who have that grade, sorted alphabetically.

🧠 Algorithm

1. **Read** an integer `n` representing the number of students.
2. **Read** each student's name and grade, and store them as a sublist inside a list.
3. **Extract** all the grades and sort them.
4. **Identify** the second lowest grade from the sorted grade list.
5. **Collect** names of all students whose grade matches the second lowest grade.
6. **Sort** the names alphabetically.
7. **Print** each name on a new line.

💻 Program

```
n = int(input())
students = []

for _ in range(n):
    name = input()
    grade = float(input())
    students.append([name, grade])

grades = sorted(set([g for _, g in students]))
second_lowest = grades[1]

names = sorted([name for name, grade in students if grade ==
second_lowest])

for name in names:
    print(name)
```

Output

Result

Thus, the program is executed successfully

🏆 Hackerrank:Runner-Up Score Finder in Python

🎯 AIM:

To write a Python program that takes a list of scores from participants and finds the **runner-up score** (i.e., the second-highest score), eliminating any duplicates.

🧠 ALGORITHM:

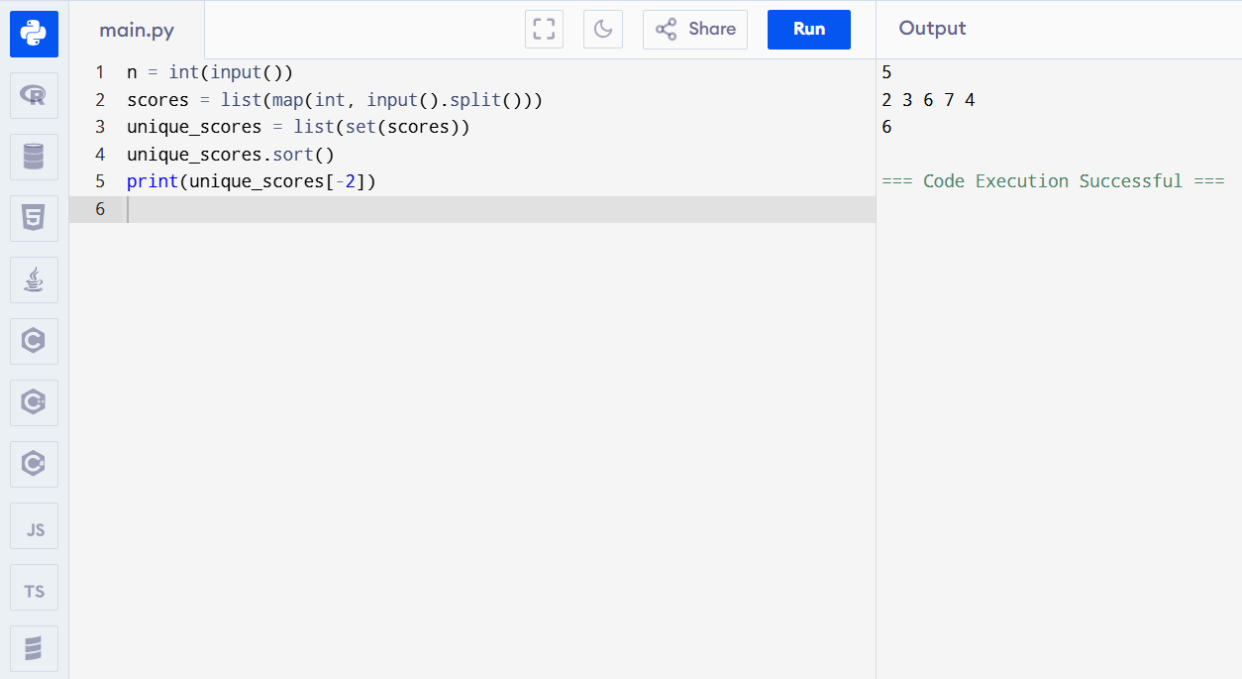
1. **Start**
2. Create a variable `n` and get its value from the user (number of participants)
3. Read the list of `n` scores from the user using `input().split()` and convert them to integers
4. Store the scores in a list
5. Use `set()` to remove any duplicate scores
6. Convert the set back to a list and sort it in ascending order
7. Print the second-last element of the sorted list (i.e., the runner-up score)

8. **Stop**

💻 PROGRAM:

```
n = int(input())
scores = list(map(int, input().split()))
unique_scores = list(set(scores))
unique_scores.sort()
print(unique_scores[-2])
```

OUTPUT



RESULT

Thus, the program is executed successfully

🔍 Hackerrank:Python Program to Check if a String Ends with a Numeric Digit

This Python program checks whether the last character of a given input string is a **numeric digit (0–9)**.

🎯 Aim

To write a Python program that checks if a given string ends with a number using Python's built-in string methods.

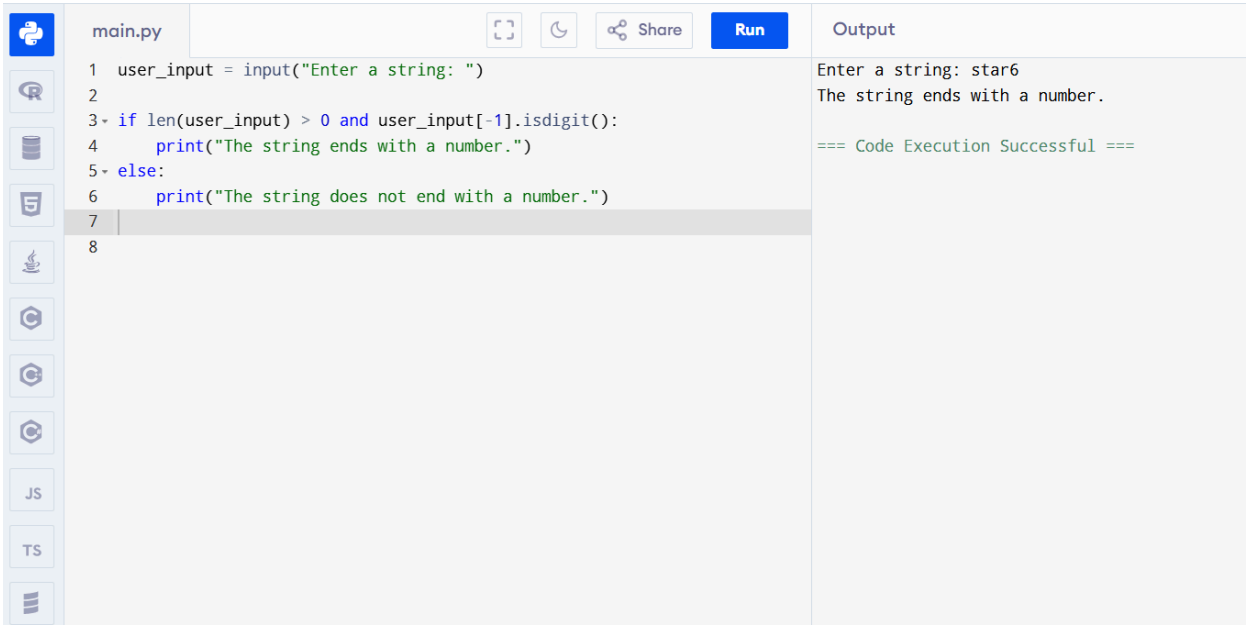
🧠 Algorithm

1. **Start the program.**
2. **Input** a string from the user.
3. **Access** the last character using indexing (`string[-1]`).
4. **Check** if the last character is a digit using the `.isdigit()` method.
5. **If true**, print that the string ends with a number.
6. **Else**, print that the string does not end with a number.
7. **End the program.**

💻 Program

```
user_input = input("Enter a string: ")

if len(user_input) > 0 and user_input[-1].isdigit():
    print("The string ends with a number.")
else:
    print("The string does not end with a number.")
```

Output



Result

Thus, the program is executed successfully