Introduction to Sets ★

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A set is an unordered collection of elements without duplicate entries.

When printed, iterated or converted into a sequence, its elements will appear in an arbitrary order.

Example

```
>>> print set()
set([])

>>> print set('HackerRank')
set(['a', 'c', 'e', 'H', 'k', 'n', 'r', 'R'])

>>> print set([1,2,1,2,3,4,5,6,0,9,12,22,3])
set([0, 1, 2, 3, 4, 5, 6, 9, 12, 22])

>>> print set((1,2,3,4,5,5))
set([1, 2, 3, 4, 5])

>>> print set(set(['H','a','c','k','e','r','r','a','n','k']))
set(['a', 'c', 'r', 'e', 'H', 'k', 'n'])

>>> print set({'Hacker' : 'DOSHI', 'Rank' : 616 })
set(['Hacker', 'Rank'])

>>> print set(enumerate(['H','a','c','k','e','r','r','a','n','k']))
set([(6, 'r'), (7, 'a'), (3, 'k'), (4, 'e'), (5, 'r'), (9, 'k'), (2, 'c'), (0, 'H'), (1, 'a'), (8, 'n')])
```

Basically, sets are used for membership testing and eliminating duplicate entries.

Task

Now, let's use our knowledge of sets and help Mickey.

Ms. Gabriel Williams is a botany professor at District College. One day, she asked her student Mickey to compute the average of all the plants with distinct heights in her greenhouse.

Formula used:

$$Average = \frac{Sum\ of\ Distinct\ Heights}{Total\ Number\ of\ Distinct\ Heights}$$

Input Format

The first line contains the integer, N, the total number of plants.

The second line contains the N space separated heights of the plants.

Constraints

$0 < N \leq 100$

Output Format

Output the average height value on a single line.

Sample Input

```
10
161 182 161 154 176 170 167 171 170 174
```

Sample Output

```
169.375
```

Explanation

Here, set$([154, 161, 167, 170, 171, 174, 176, 182])$ is the set containing the distinct heights. Using the sum() and len() functions, we can compute the average.

$$Average = \frac{1355}{8} = 169.375$$

Change Theme Python 3

```
def average(heights):
    heights = set(heights)
    length = len(heights)

    result = sum(heights) / length

    return result


if __name__ == '__main__':
    n = int(input())
    arr = list(map(int, input().split()))
    result = average(arr)
    print(result)
```

Line: 11 Col: 21

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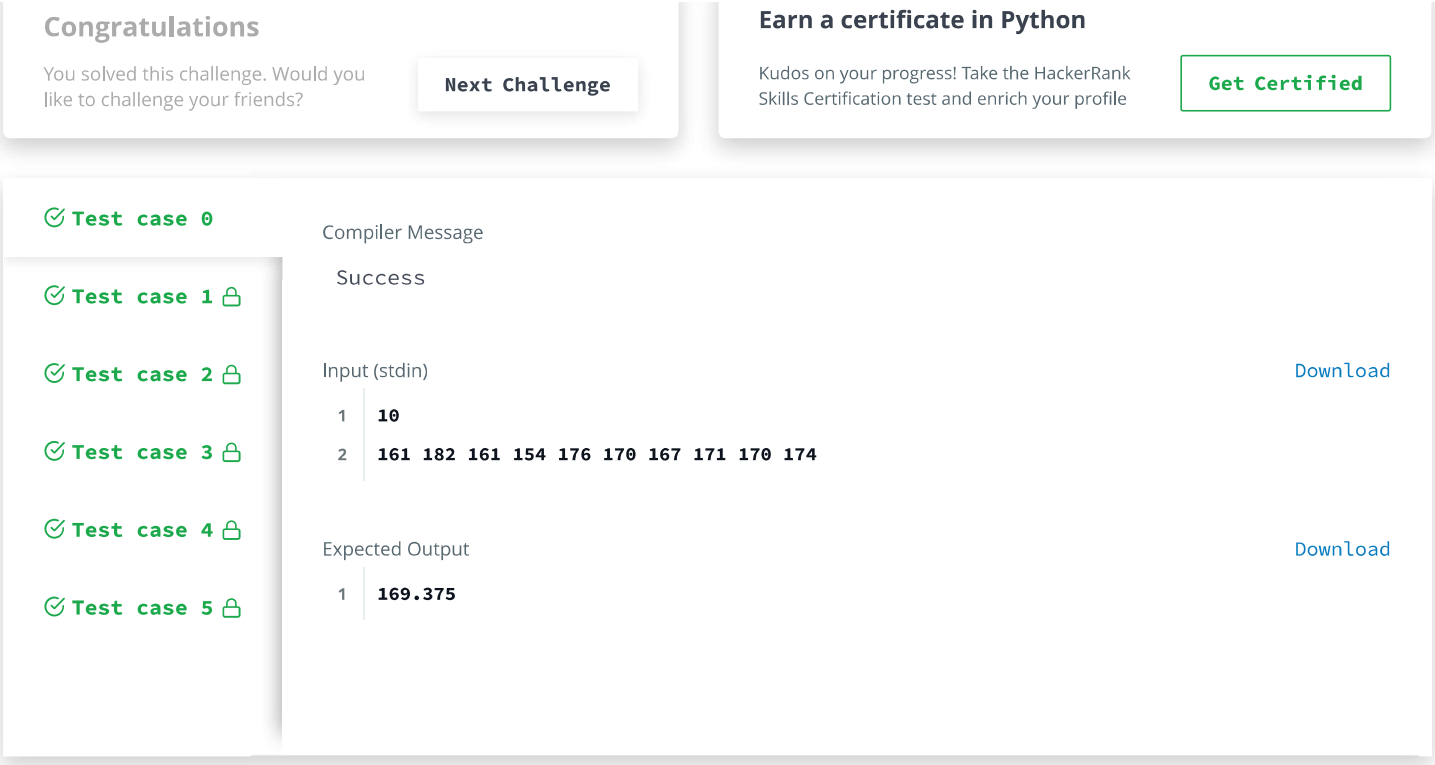
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