

Ramdeobaba University, Nagpur

Department of Computer Science and Engineering

Session: 2025-26

Technical Skills

III Semester

Name: Vardhan Ingole

Section: A4

Batch: B3

Roll No: 43

Task-1 submission

Q1): Fibonacci Finding

https://www.hackerrank.com/challenges/fibonacci-finding-easy/problem?utm_source=chatgpt.com

HackerRank

PrepareCertifyCompete

Search

Prepare > Mathematics > Number Theory > Fibonacci Finding (easy)

Fibonacci Finding (easy) ★

Points: 0 Rank: 303636

Your Fibonacci Finding (easy) submission got 30.00 points. [Share](#) [Post](#)

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ProblemSubmissionsLeaderboardDiscussionsEditorialTopics

You're given three numbers: A , B , and N , and all you have to do is to find the number F_N where

$$\begin{aligned} F_0 &= A \\ F_1 &= B \\ F_i &= F_{i-1} + F_{i-2} \text{ for } i \geq 2 \end{aligned}$$

As the number can be very large, output it modulo $10^9 + 7$.

Consider the following link: http://en.wikipedia.org/wiki/Fibonacci_number#Matrix_form

Input Format

First line contains a single integer T - the number of tests. T lines follow, each containing three integers: A , B and N .

Constraints

Authorbayleef

DifficultyEasy

Max Score30

Submitted By12314

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hackerank.com/challenges/fibonacci-finding-easy/problem?utm_source=chatgpt.com

School

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Next Challenge

Test case 0

Test case 1

Test case 2

Test case 3

Test case 4

Test case 5

Test case 6

Compiler Message

Success

Input (stdin)

Download

8

2 3 1

9 1 7

9 8 3

2 4 9

1 7 2

1 8 1

4 3 1

3 7 5

Q2): Extra Long Factorials

<https://www.hackerrank.com/challenges/extra-long-factorials/problem>

The screenshot shows the HackerRank interface for the 'Extra Long Factorials' challenge. The page is in the 'Problem' tab, displaying the problem description, function signature, and constraints. The problem asks to calculate the factorial of a given integer n , where n can be as large as 10^5 . The factorial is defined as $n! = n \times (n-1) \times (n-2) \times \dots \times 3 \times 2 \times 1$. The input consists of a single integer n . The constraints state that n is between 1 and 10^5 . The page also shows the author's name (vatsalchanana), difficulty (Medium), max score (20), and the number of submissions (342348). There are links for 'View discussions', 'View editorial', and 'View top submissions'. The 'RATE THIS CHALLENGE' section shows 5 stars. The 'MORE DETAILS' section has links to 'Download problem statement' and 'Download sample test cases'.

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29 more points to get your first star!

Rank: 4421075 | Points: 1/30

Extra Long Factorials ★

Problem | Submissions | Leaderboard | Discussions | Editorial

The factorial of the integer n , written $n!$, is defined as:

$$n! = n \times (n-1) \times (n-2) \times \dots \times 3 \times 2 \times 1$$

Calculate and print the factorial of a given integer.

For example, if $n = 30$, we calculate $30 \times 29 \times 28 \times \dots \times 2 \times 1$ and get 265252859812191058636308480000000.

Function Description

Complete the `extraLongFactorials` function in the editor below. It should print the result and return.

`extraLongFactorials` has the following parameter(s):

- n : an integer

Note: Factorials of $n > 20$ can't be stored even in a 64-bit long long variable. Big integers must be used for such calculations. Languages like Java, Python, Ruby etc. can handle big integers, but we need to write additional code in C/C++ to handle huge values. We recommend solving this challenge using `BigInteger`.

Input Format

Input consists of a single integer n .

Constraints

Author: vatsalchanana
Difficulty: Medium
Max Score: 20
Submitted By: 342348

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- View discussions
- View editorial
- View top submissions

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★★★★★

MORE DETAILS

- Download problem statement
- Download sample test cases

The screenshot shows the HackerRank interface for the 'Extra Long Factorials' challenge, displaying the solution and test cases. The page is in the 'Submissions' tab, showing a 'Success' message and the input/output for the test cases. The input is 25, and the expected output is 15511210043330985984000000. The page also shows the compiler message and the input/output for the test cases. The 'Test case 0' is highlighted, showing the input 25 and the expected output 15511210043330985984000000. The 'Test case 1' through 'Test case 6' are also listed, all showing 'Success'.

You are now 4 points away from the 1st star for your problem solving badge.

Congratulations

You solved this challenge. Would you like to challenge your friends? [f](#) [t](#) [in](#)

Next Challenge

Test case 0

Test case 1

Test case 2

Test case 3

Test case 4

Test case 5

Test case 6

Compiler Message

Success

Input (stdin)

Download

1 25

Expected Output

Download

1 15511210043330985984000000

Q3): Append and Delete Algorithm Implementation

<https://www.hackerrank.com/challenges/append-and-delete/problem>

The screenshot shows the HackerRank interface for the 'Append and Delete' problem. The page is titled 'Append and Delete' with a star icon. The breadcrumb trail is 'Prepare > Algorithms > Implementation > Append and Delete'. The user's rank is 2753005 and they have 41/100 points. The problem description states: 'You have two strings of lowercase English letters. You can perform two types of operations on the first string: 1. Append a lowercase English letter to the end of the string. 2. Delete the last character of the string. Performing this operation on an empty string results in an empty string. Given an integer, k , and two strings, s and t , determine whether or not you can convert s to t by performing exactly k of the above operations on s . If it's possible, print Yes. Otherwise, print No. Example, $s = [a, b, c]$, $t = [d, e, f]$, $k = 6$. To convert s to t , we first delete all of the characters in 3 moves. Next we add each of the characters of t in order. On the 6th move, you will have the matching string. Return Yes. If there were more moves available, they could have been eliminated by performing multiple deletions on an empty string. If there were fewer than 6 moves, we would not have succeeded in creating the new string. Function Description: Complete the appendAndDelete function in the editor below. It should return a string, either Yes or No. appendAndDelete has the following parameter(s): s : a string consisting of lowercase English letters, t : a string consisting of lowercase English letters, k : an integer representing the number of operations to perform. The right sidebar shows the author 'zemen', difficulty 'Easy', max score '20', and submitted by '168600'. There are links for 'View discussions', 'View editorial', 'View top submissions', 'Rate this challenge' (5 stars), and 'More details' (Download problem statement, Download sample test cases).

The screenshot shows the HackerRank interface for the 'Append and Delete' problem, displaying the solution result. The user has earned 20.00 points and is 59 points away from the 2nd star. The progress bar shows 16% completion (41/100 points). A green banner says 'Congratulations' and 'You solved this challenge. Would you like to challenge your friends?'. Below the banner, there is a list of test cases (0 to 6) with status icons. The 'Compiler Message' section shows 'Success'. The 'Input (stdin)' section shows the input: 'hackerhappy', 'hackerrank', and '9'. The 'Expected Output' section shows the output: 'Yes'. There are 'Download' links for the input and output sections. A 'Next Challenge' button is also visible.

Q4): `itertools.permutations()` python

https://www.hackerrank.com/challenges/itertools-permutations/problem?utm_source=chatgpt.com

hackerrank.com/challenges/itertools-permutations/problem?utm_source=chatgpt.com

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Search

25 more points to get your first star!

Rank: 3200065 | Points: 10/35

itertools.permutations() ★

Problem | Submissions | Leaderboard | Discussions | Editorial

itertools.permutations(iterable[, r])

This tool returns successive *r* length permutations of elements in an iterable.

If *r* is not specified or is None, then *r* defaults to the length of the iterable, and all possible full length permutations are generated.

Permutations are printed in a lexicographic sorted order. So, if the input iterable is sorted, the permutation tuples will be produced in a sorted order.

Sample Code

```
>>> from itertools import permutations
>>> print permutations(['1','2','3'])
<itertools.permutations object at 0x02A45210>
>>>
>>> print list(permutations(['1','2','3']))
[('1', '2', '3'), ('1', '3', '2'), ('2', '1', '3'), ('2', '3', '1'), ('3', '1', '2'), ('3', '2', '1')]
>>>
>>> print list(permutations(['1','2','3'],2))
[('1', '2'), ('1', '3'), ('2', '1'), ('2', '3'), ('3', '1'), ('3', '2')]
>>>
>>> print list(permutations('abc',3))
[('a', 'b', 'c'), ('a', 'c', 'b'), ('b', 'a', 'c'), ('b', 'c', 'a'), ('c', 'a', 'b'), ('c', 'b', 'a')]
```

Author [deleted]
Difficulty Easy
Max Score 10
Submitted By 204890

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MORE DETAILS

Download problem statement
Download sample test cases

hackerrank.com/challenges/itertools-permutations/problem?utm_source=chatgpt.com

Congratulations

You solved this challenge. Would you like to challenge your friends? [f](#) [t](#) [in](#)

Next Challenge

Test case 0 ✓

Test case 1 ✓

Test case 2 ✓

Test case 3 ✓

Test case 4 ✓

Test case 5 ✓

Compiler Message

Success

Input (stdin)

Download

1 HACK 2

Expected Output

Download

1 AC
2 AH
3 AK
4 CA
5 CH
6 CK

Q5): itertools.combinations() python

https://www.hackerrank.com/challenges/itertools-combinations/problem?utm_source=chatgpt.com

hackerank.com/challenges/itertools-combinations/problem?utm_source=chatgpt.com

HackerRank | Prepare | Certify | Compete

Search

15 more points to get your first star!

Rank: 2948670 | Points: 20/35

itertools.combinations() ★

Problem | Submissions | Leaderboard | Discussions | Editorial

itertools.combinations(iterable, r)

This tool returns the r length subsequences of elements from the input iterable.

Combinations are emitted in lexicographic sorted order. So, if the input iterable is sorted, the combination tuples will be produced in sorted order.

Sample Code

```
>>> from itertools import combinations
>>>
>>> print list(combinations('12345',2))
[('1', '2'), ('1', '3'), ('1', '4'), ('1', '5'), ('2', '3'), ('2', '4'), ('2', '5'), ('3', '4'), ('3', '5'), ('4', '5')]
>>>
>>> A = [1,1,3,3,3]
>>> print list(combinations(A,4))
[(1, 1, 3, 3), (1, 1, 3, 3), (1, 1, 3, 3), (1, 1, 3, 3), (1, 3, 3, 3), (1, 3, 3, 3), (1, 3, 3, 3)]
```

Task

You are given a string S .

Your task is to print all possible combinations, up to size k , of the string in lexicographic sorted order.

Author: [deleted]

Difficulty: Easy

Max Score: 10

Submitted By: 167487

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MORE DETAILS

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hackerank.com/challenges/itertools-permutations/problem?utm_source=chatgpt.com

Congratulations

You solved this challenge. Would you like to challenge your friends? [f](#) [t](#) [in](#)

Next Challenge

Test case 0 ✓

Test case 1 ✓

Test case 2 ✓

Test case 3 ✓

Test case 4 ✓

Test case 5 ✓

Compiler Message

Success

Input (stdin)

Download

1 HACK 2

Expected Output

Download

1 AC

2 AH

3 AK

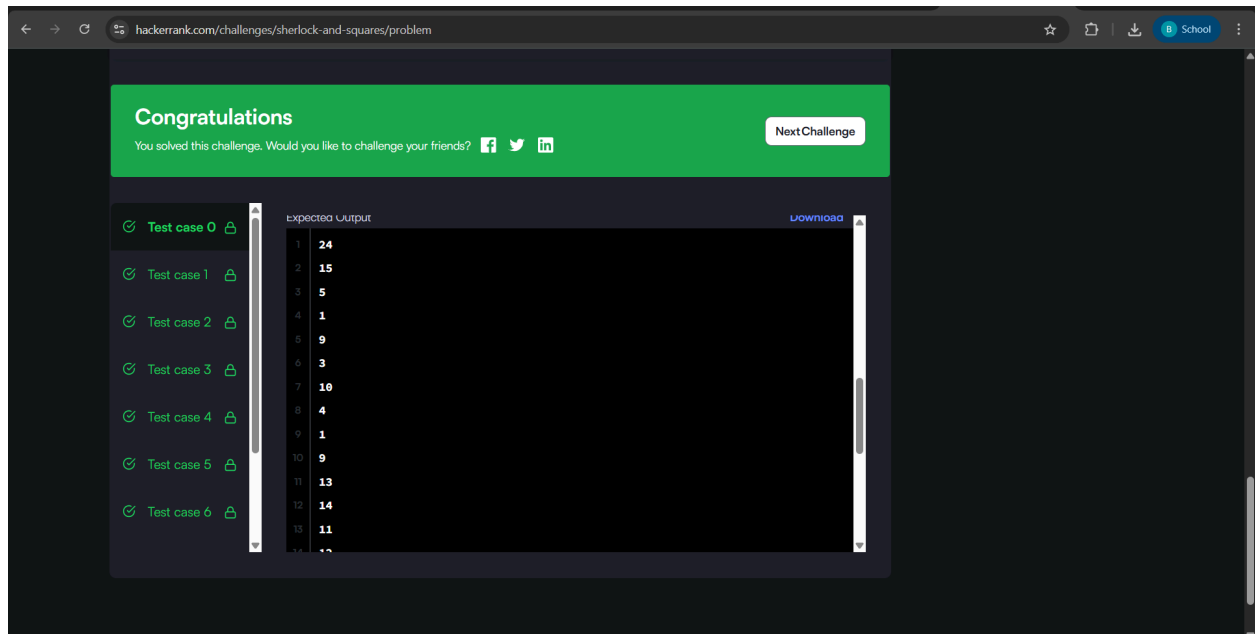
4 CA

5 CH

6 CK

Q6): Sherlock and Squares Algorithm Implementation

<https://www.hackerrank.com/challenges/sherlock-and-squares/problem>



Q7): Permuting Two Arrays

<https://www.hackerrank.com/challenges/two-arrays/problem?isFullScreen=true>

HackerRank | Prepare > Algorithms > Greedy > Permuting Two Arrays

There are two n -element arrays of integers, A and B . Permute them into some A' and B' such that the relation $A'[i] + B'[i] \geq k$ holds for all i where $0 \leq i < n$. There will be q queries consisting of A , B , and k . For each query, return YES if some permutation A' , B' satisfying the relation exists. Otherwise, return NO.

Example
 $A = [0, 1]$
 $B = [0, 2]$
 $k = 1$
 A valid A' , B' is $A' = [1, 0]$ and $B' = [0, 2]$: $1 + 0 \geq 1$ and $0 + 2 \geq 1$. Return YES.

Function Description
 Complete the `twoArrays` function in the editor below. It should return a string, either YES or NO.

`twoArrays` has the following parameter(s):

- `int k`: an integer
- `int A[n]`: an array of integers
- `int B[n]`: an array of integers

Returns
 - string: either YES or NO

Input Format
 The first line contains an integer q , the number of queries.

The next q sets of 3 lines are as follows:

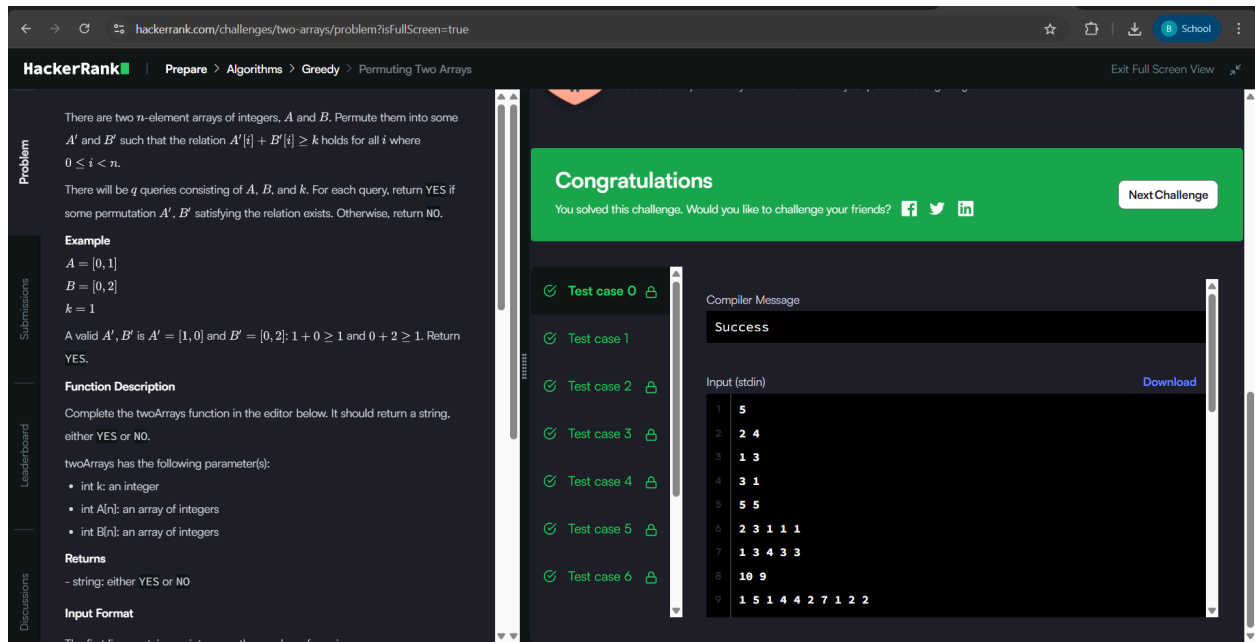
- The first line contains two space-separated integers n and k , the size of both arrays A and B , and the relation

```

154  char* rtrim(char* str) {
159      *(end + 1) = '\0';
160      return str;
161  }
162
163  char** split_string(char* str) {
164      char** splits = NULL;
165      char* token = strtok(str, " ");
166      int spaces = 0;
167      while (token) {
168          splits = realloc(splits, sizeof(char*) * ++spaces);
169          if (!splits) return splits;
170          splits[spaces - 1] = token;
171          token = strtok(NULL, " ");
172      }
173      return splits;
174  }
175
176  int parse_int(char* str) {
177      char* endptr;
178      int value = strtol(str, &endptr, 10);
179      if (endptr == str || *endptr != '\0') exit(EXIT_FAILURE);
180      return value;
181  }
182
  
```

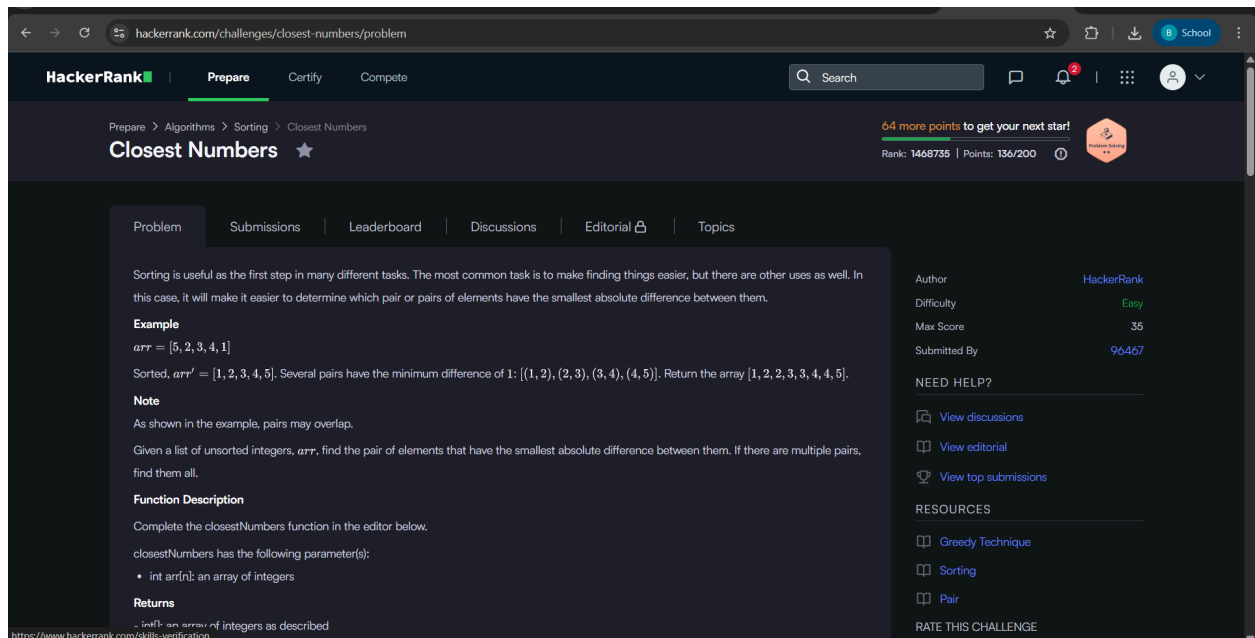
Line: 182 Col: 1

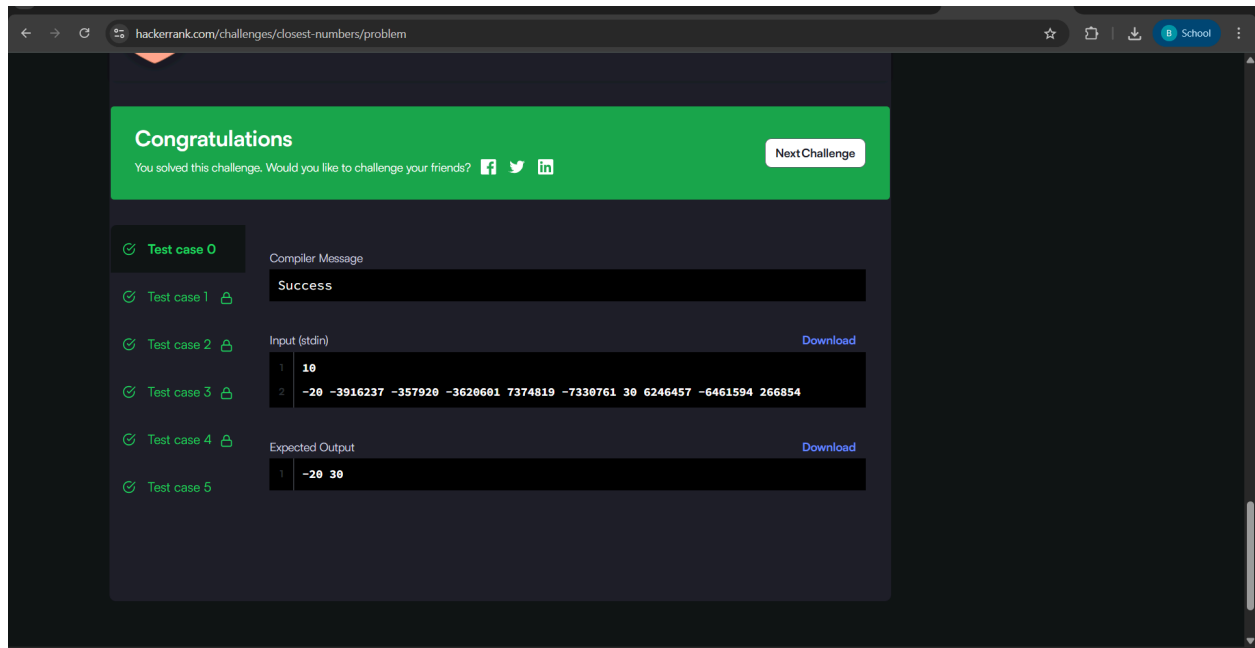
[Upload Code as File](#) ☐ Test against custom input [Run Code](#) [Submit Code](#)



Q8): Closest numbers (sorting)

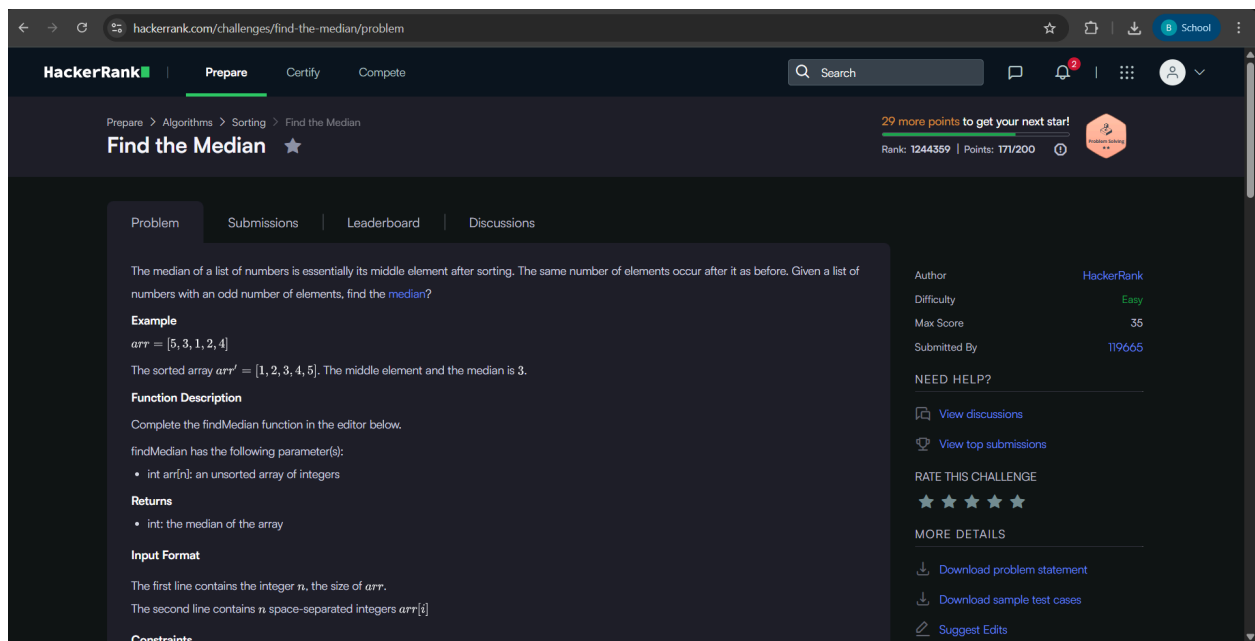
<https://www.hackerrank.com/challenges/closest-numbers/problem>

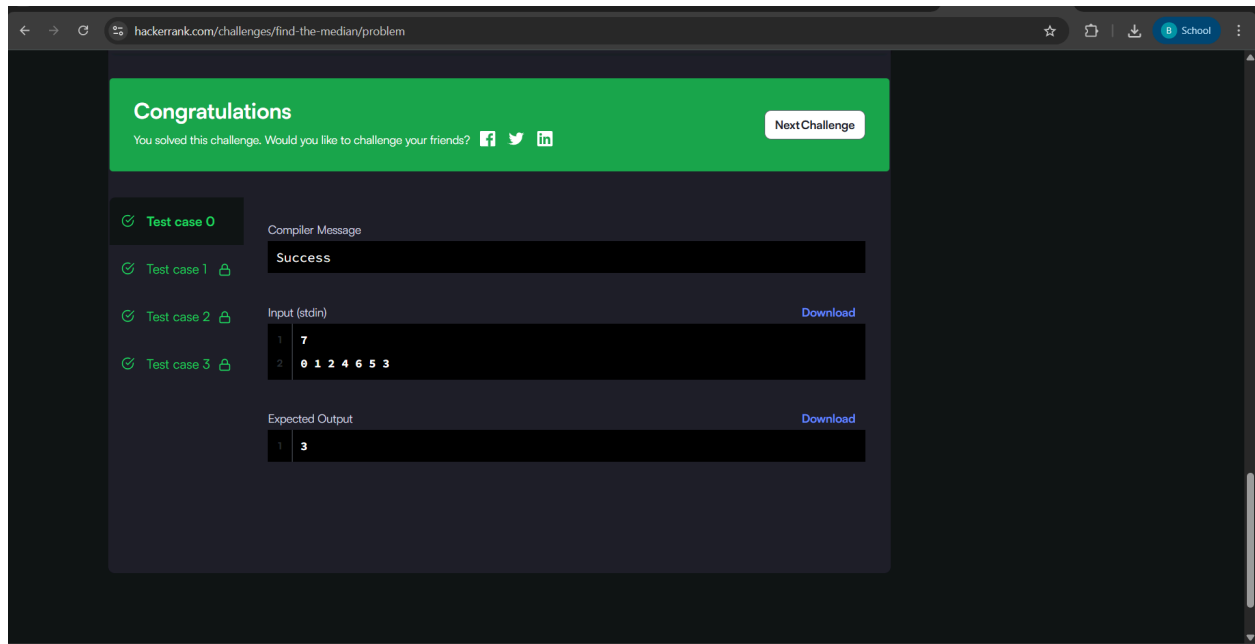




Q9): Find the Median (Sorting)

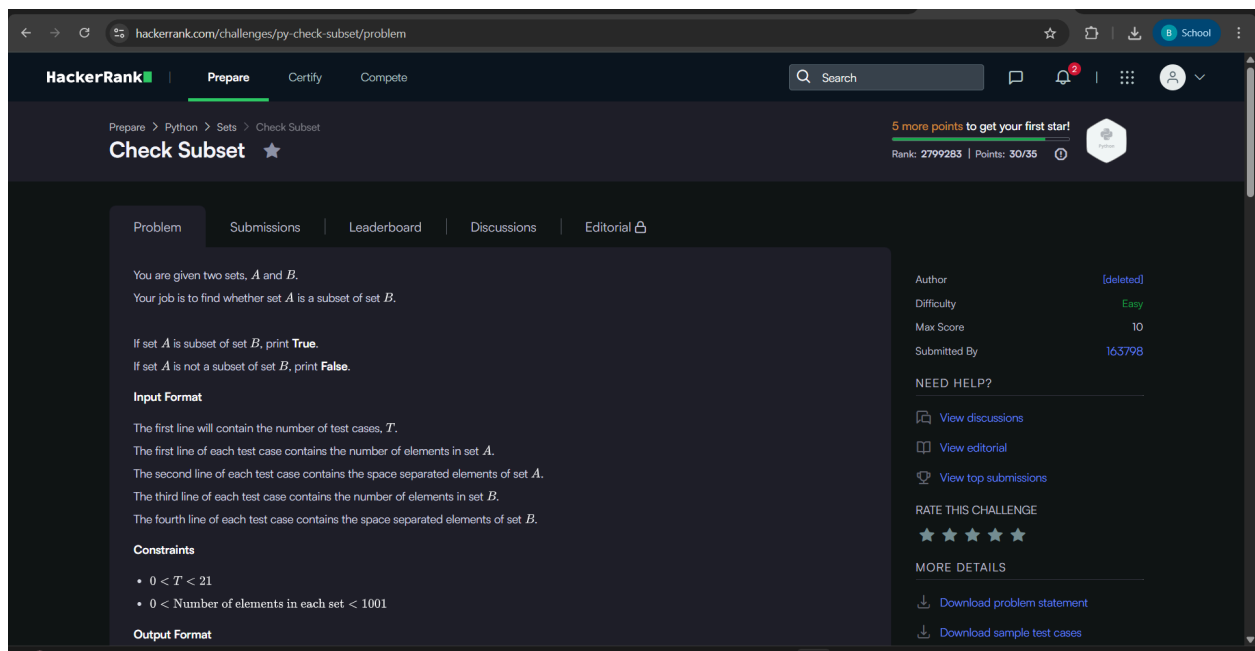
<https://www.hackerrank.com/challenges/find-the-median/problem>

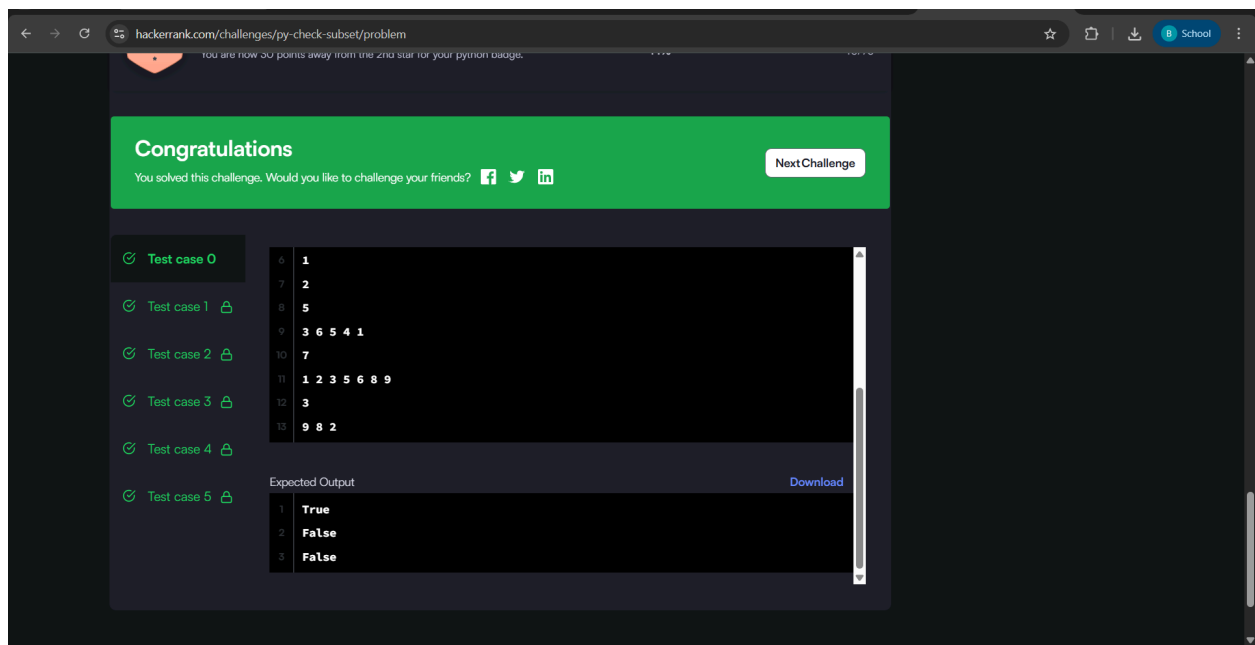
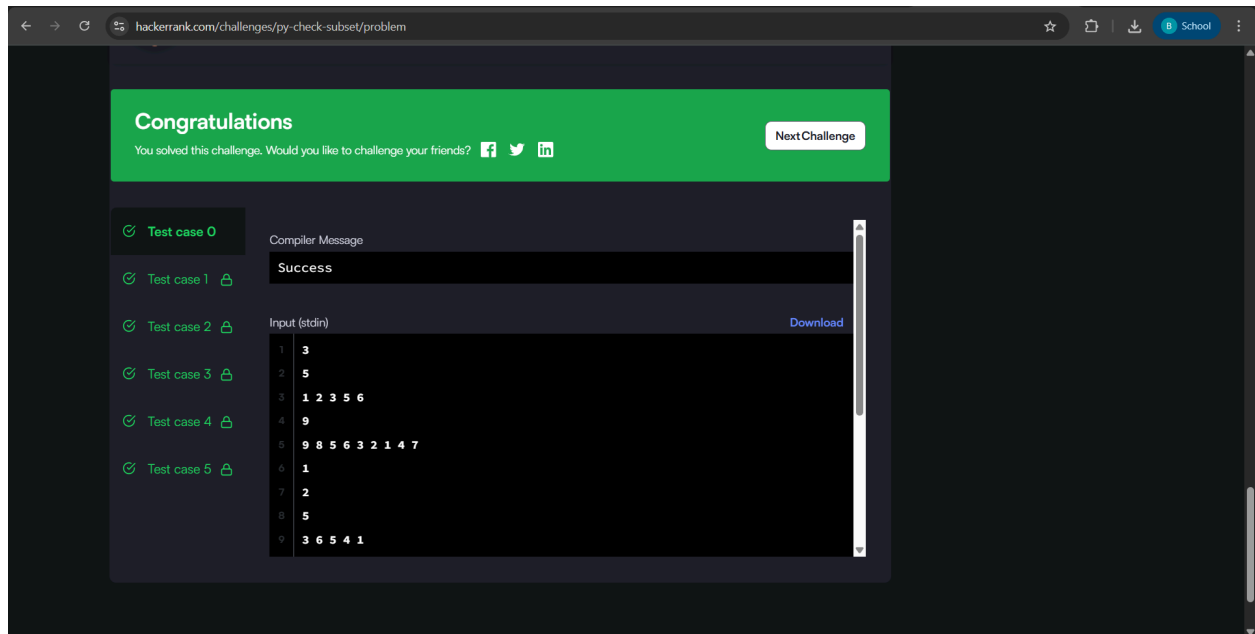




Q10): Check Subset (sets)

<https://www.hackerrank.com/challenges/py-check-subset/problem>





Q11): String Split and Join (Python Strings)

<https://www.hackerrank.com/challenges/python-string-split-and-join/problem>

hackerrank.com/challenges/python-string-split-and-join/problem

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School

Prepare > Python > Strings > String Split and Join

String Split and Join

20 more points to get your next star!
Rank: 2358642 | Points: 50/70

ProblemSubmissionsLeaderboardDiscussionsEditorial

In Python, a string can be split on a delimiter.

Example:

```
>>> a = "this is a string"
>>> a = a.split(" ") # a is converted to a list of strings.
>>> print a
['this', 'is', 'a', 'string']
```

Joining a string is simple:

```
>>> a = "-".join(a)
>>> print a
this-is-a-string
```

Task

You are given a string. Split the string on a " " (space) delimiter and join using a - hyphen.

Function Description

Complete the split_and_join function in the editor below.

Authorshashank21j

DifficultyEasy

Max Score10

Submitted By772522

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hackerrank.com/challenges/python-string-split-and-join/problem

Congratulations

You solved this challenge. Would you like to challenge your friends?

[Next Challenge](#)

Test case 0

Test case 1

Compiler Message

Success

Input (stdin)

1this is a string

Expected Output

1this-is-a-string