Experiment 7

String

Student Name: Bhanu Pundir
UID: 20BCS1439
Branch: BE CSE
Section/Group: 620-B
Semester: 5th
Date of performance: 28 Oct 2022
Subject Name: CC Lab
Subject Code: 20CSP-314

1. Aim/Overview of the practical:

To Demonstrate the concept of String Data Structure

A numeric string, , is beautiful if it can be split into a sequence of two or more positive integers, , satisfying the following conditions:

https://www.hackerrank.com/challenges/separate-the-numbers/problem?isFullScreen=true

2. Apparatus / Simulator Used:

- Windows 7 or above
- Google Chrome

3. Objective:

- To understand the concept of String Data Structure.
- To implement the concept of String Data Structure.
- To learn different approaches used to separate the numbers.

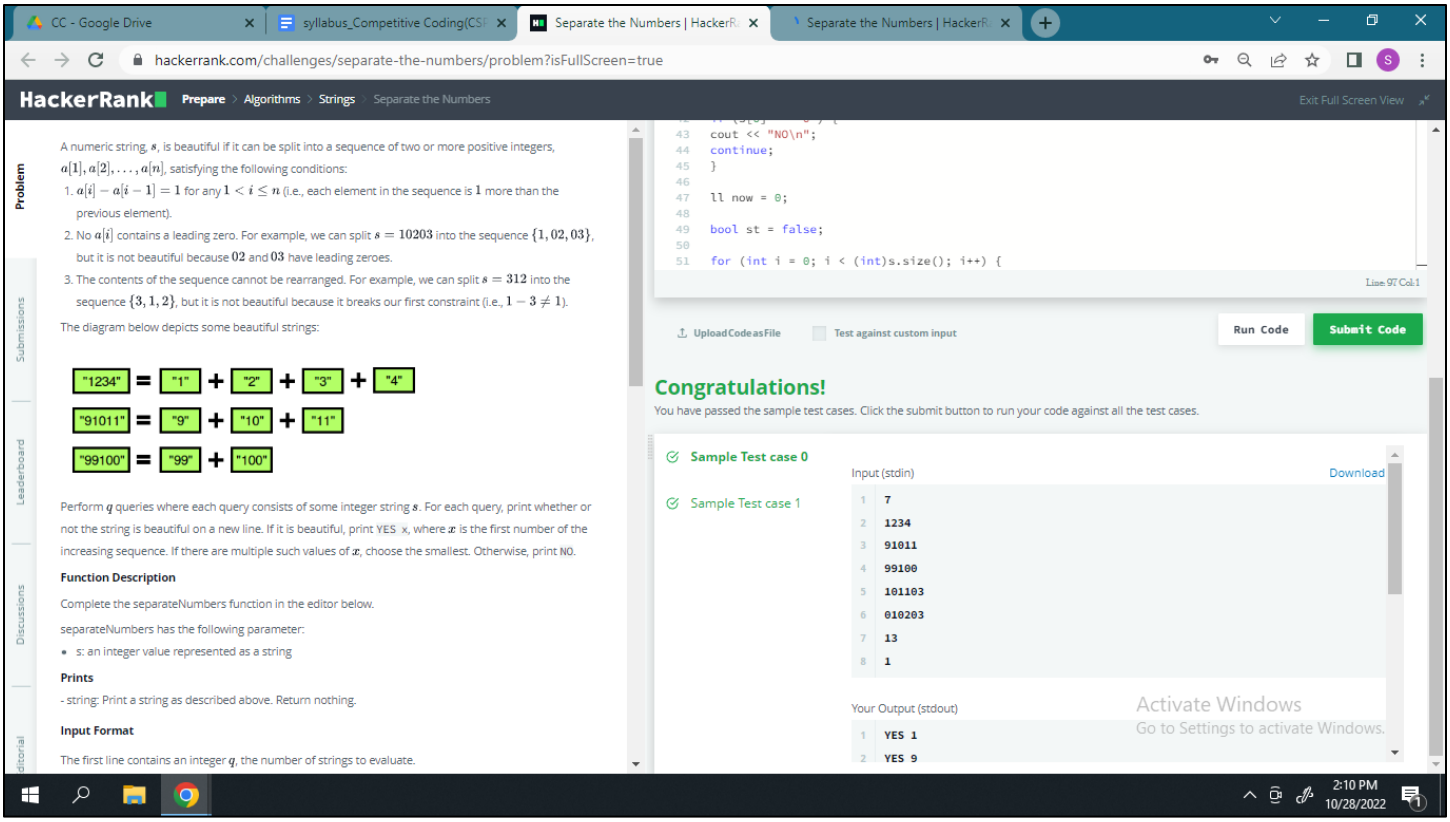
4. Code:

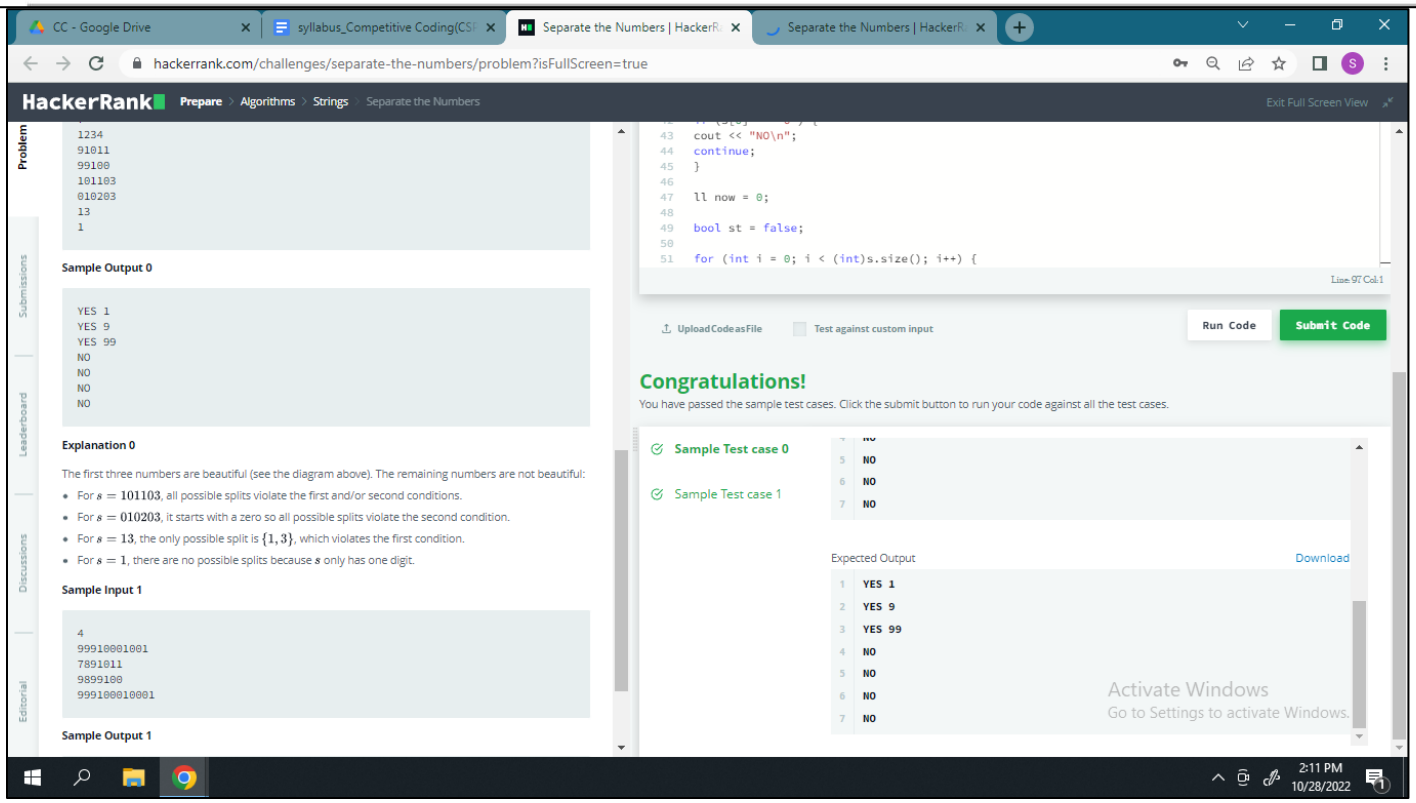
```
#include <bits/stdc++.h>

#define ll long long
#define ld double
#define pii pair <ll, ll>
```

```
#define mp make_pair

using namespace std;

int main() {
int q;

cin >> q;

while (q--) {
string s;

cin >> s;

if (s[0] == '0') {
cout << "NO\n";
continue;
}

ll now = 0;

bool st = false;

for (int i = 0; i < (int)s.size(); i++) {
now *= 10;
now += s[i] - '0';

ll res = 0;

if (s[i + 1] == '0') {
continue;
}

int cnt = 1;
```

```
for (int j = i + 1; j < (int)s.size(); j++) {
res *= 10;
res += s[j] - '0';

if (res == now + cnt) {
if (j + 1 == (int)s.size()) {
st = true;
break;
}

if (s[j + 1] == '0') {
break;
}

res = 0;
cnt++;
}
}

if (st) {
break;
}
}

if (st) {
cout << "YES " << now << endl;
} else {
cout << "NO\n";
}
}

return 0;
}
```

5. Result/Output/Writing Summary:

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Separate the Numbers
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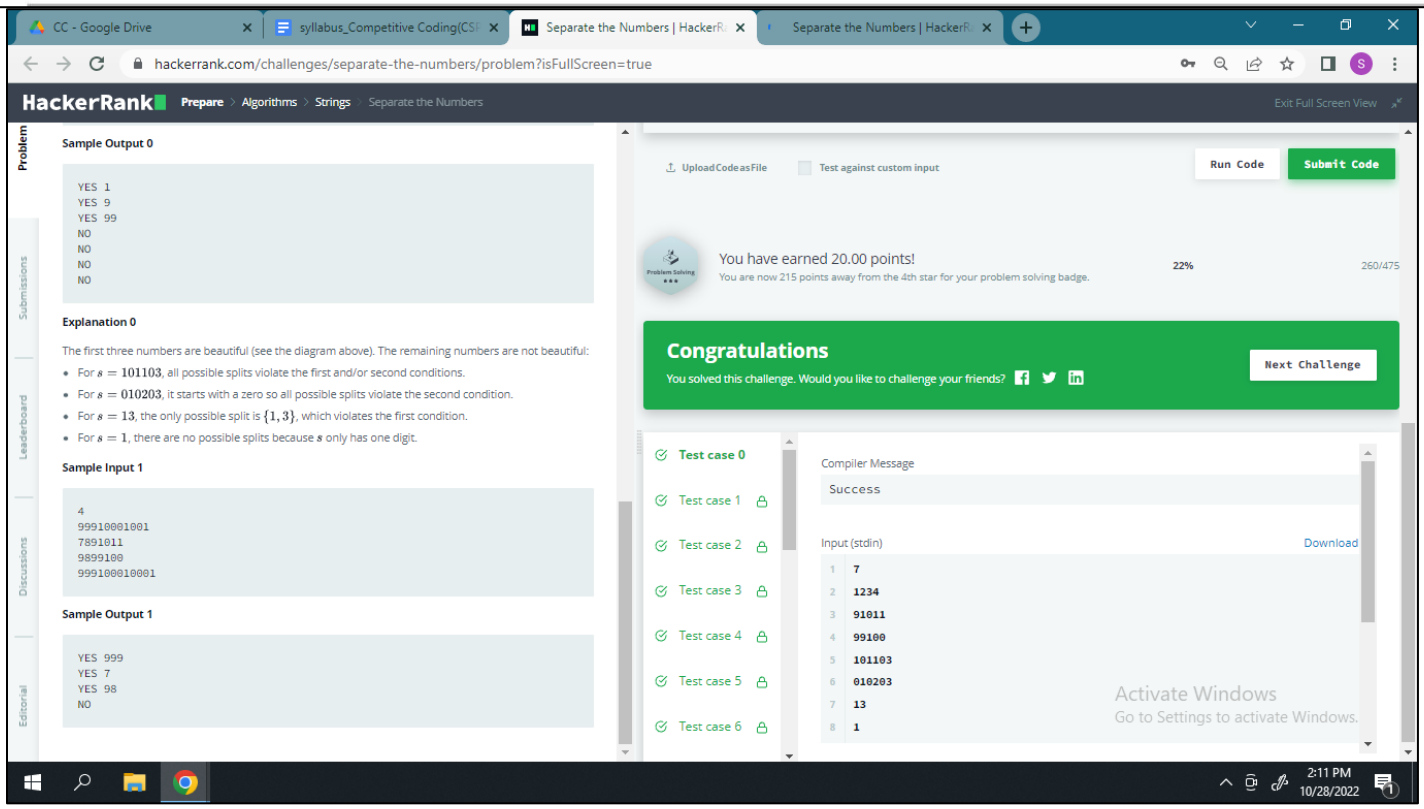
Problem
Submissions
Leaderboard
Discussions
Editorial
1234
91011
99100
101103
010203
13
1
Sample Output 0
YES 1
YES 9
YES 99
NO
NO
NO
NO
Explanation 0
The first three numbers are beautiful (see the diagram above). The remaining numbers are not beautiful:
For $s = 101103$, all possible splits violate the first and/or second conditions.
For $s = 010203$, it starts with a zero so all possible splits violate the second condition.
For $s = 13$, the only possible split is $\{1, 3\}$, which violates the first condition.
For $s = 1$, there are no possible splits because s only has one digit.
Sample Input 1
4
99910001001
7891011
9899100
999100010001
Sample Output 1
cout << "NO\n";
continue;
}
ll now = 0;
bool st = false;
for (int i = 0; i < (int)s.size(); i++) {
Line: 97 Col: 1
Upload Code as File
Test against custom input
Run Code
Submit Code
Congratulations!
You have passed the sample test cases. Click the submit button to run your code against all the test cases.
Sample Test case 0
Sample Test case 1
NO
NO
NO
Expected Output
Download
YES 1
YES 9
YES 99
NO
NO
NO
NO
Activate Windows
Go to Settings to activate Windows.
2:11 PM
10/28/2022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Prepare
Algorithms
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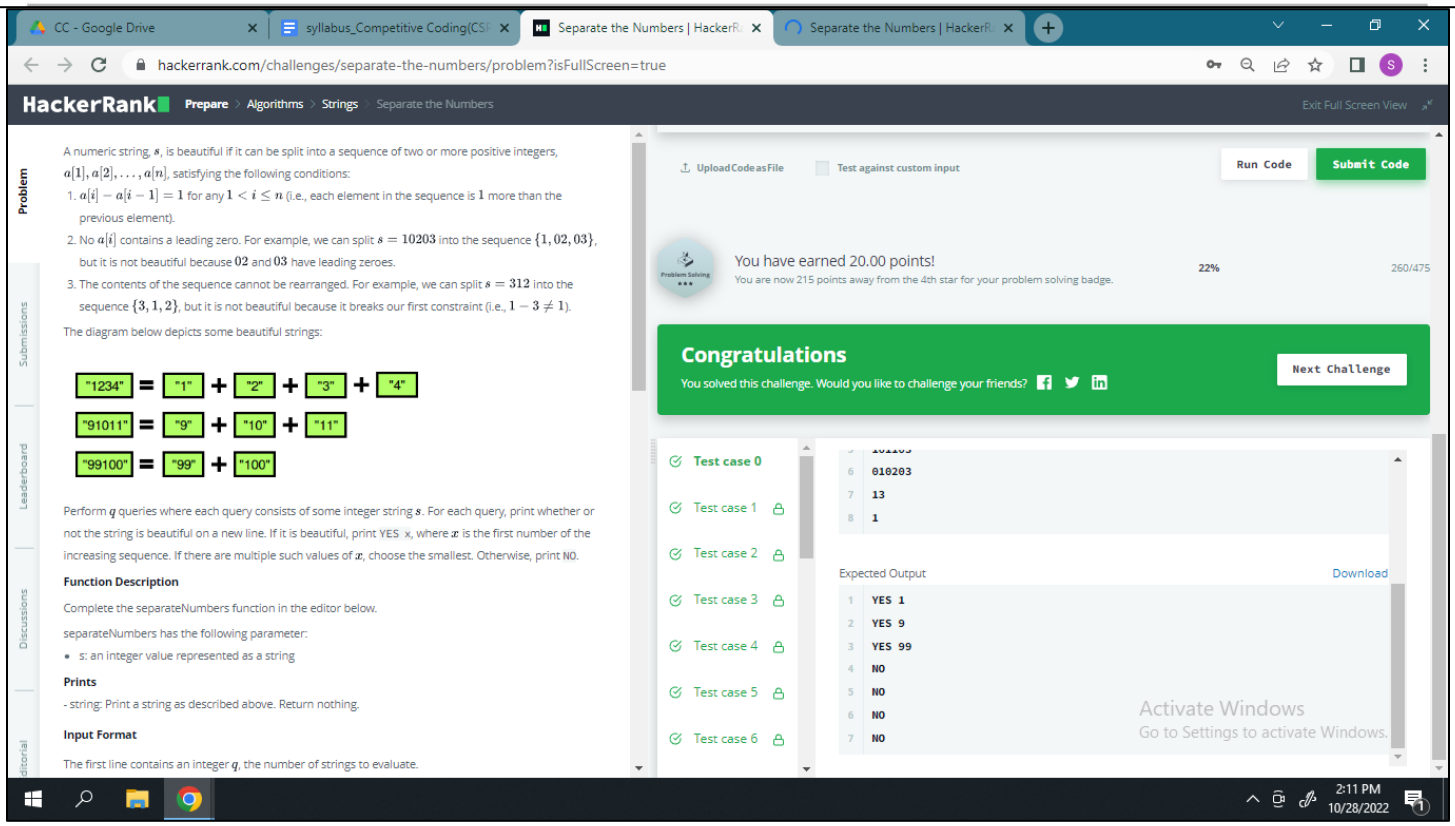
Separate the Numbers
Exit Full Screen View
Problem
Submissions
Leaderboard
Discussions
Editorial
Sample Output 0
YES 1
YES 9
YES 99
NO
NO
NO
NO
Explanation 0
The first three numbers are beautiful (see the diagram above). The remaining numbers are not beautiful:
For $s = 101103$, all possible splits violate the first and/or second conditions.
For $s = 010203$, it starts with a zero so all possible splits violate the second condition.
For $s = 13$, the only possible split is $\{1, 3\}$, which violates the first condition.
For $s = 1$, there are no possible splits because s only has one digit.
Sample Input 1
4
99910001001
7891011
9899100
999100010001
Sample Output 1
YES 999
YES 7
YES 98
NO
Upload Code as File
Test against custom input
Run Code
Submit Code
You have earned 20.00 points!
You are now 215 points away from the 4th star for your problem solving badge.
22%
260/475
Congratulations
You solved this challenge. Would you like to challenge your friends?
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
7
1234
91011
99100
101103
010203
13
1
Activate Windows
Go to Settings to activate Windows.
2:11 PM
10/28/2022



Experiment 7.2

1. Aim/Overview of the practical:

To Demonstrate the concept of String Data Structure

A pangram is a string that contains every letter of the alphabet. Given a sentence determine whether it is a pangram in the English alphabet. Ignore case. Return either pangram or not pangram as appropriate.

https://www.hackerrank.com/challenges/pangrams/problem?isFullScreen=true

2. Apparatus / Simulator Used:

- Windows 7 or above
- Google Chrome

3. **Objective:**

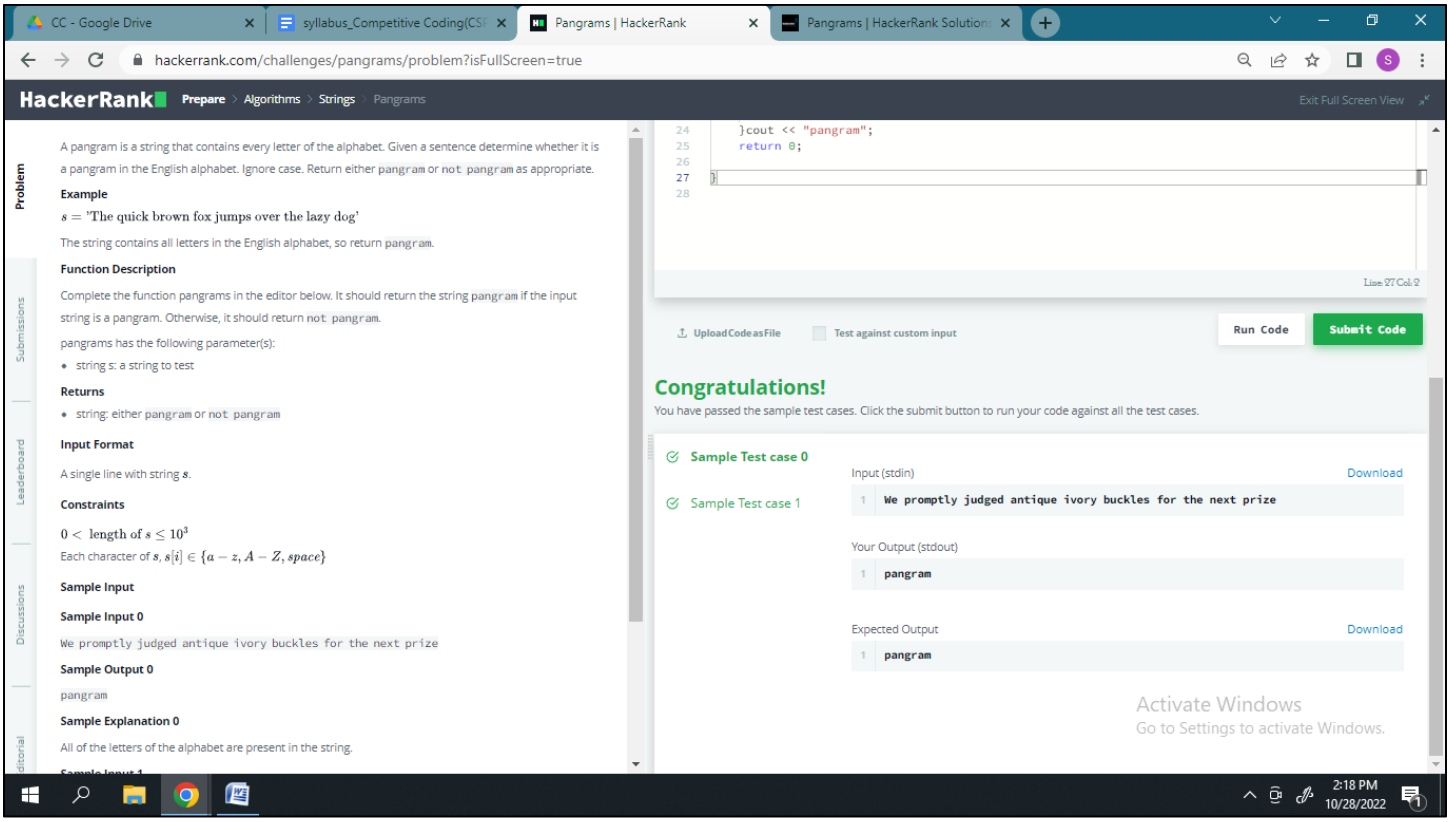
- To understand the concept of String Data Structure.
- To implement the concept of String Data Structure.
- To learn different approaches used to separate the numbers.

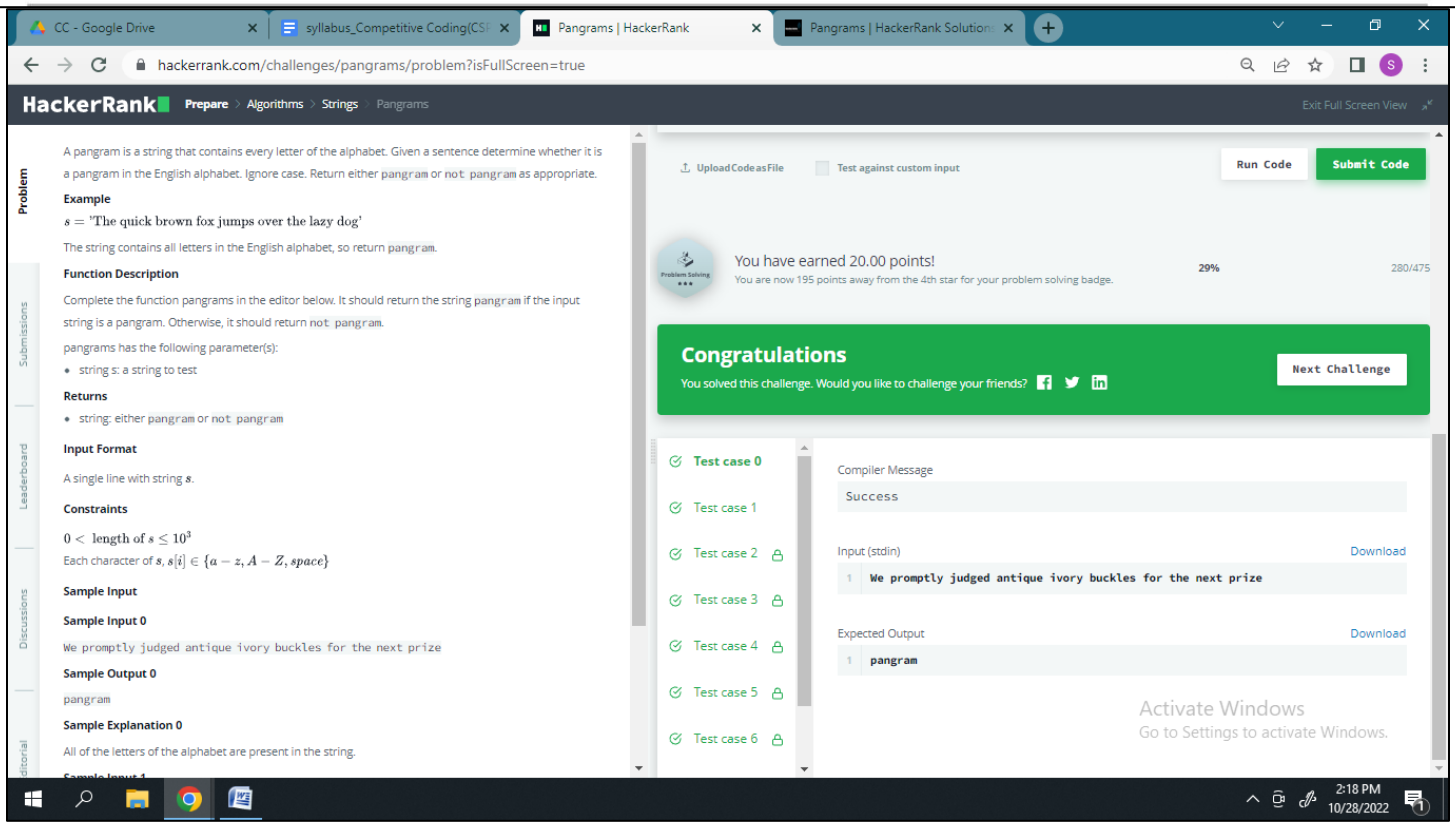
4. **Code:**

```
#include <bits/stdc++.h>
using namespace std;
int main()
{
    string a; getline(cin, a);map <char,int> he;
    for (int g=0;g<a.length(); g++)
    {
        if (a[g]>='A' && a[g]<='Z')
        {
            a[g]=char(a[g]-'A'+'a');
            he[a[g]]++;
        }
        if (a[g]>='a' && a[g]<='z')
        {
            he[a[g]]++;
        }
    }
    for (int g=0; g<26; g++)
    {
        if (!he[char('a'+g)])
        {
            cout << "not pangram"; return 0;
        }
    }cout << "pangram";
    return 0;

}
```

5. Result/Output/Writing Summary:

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Pangrams | HackerRank Solutions
hackerrank.com/challenges/pangrams/problem?isFullScreen=true
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Problem
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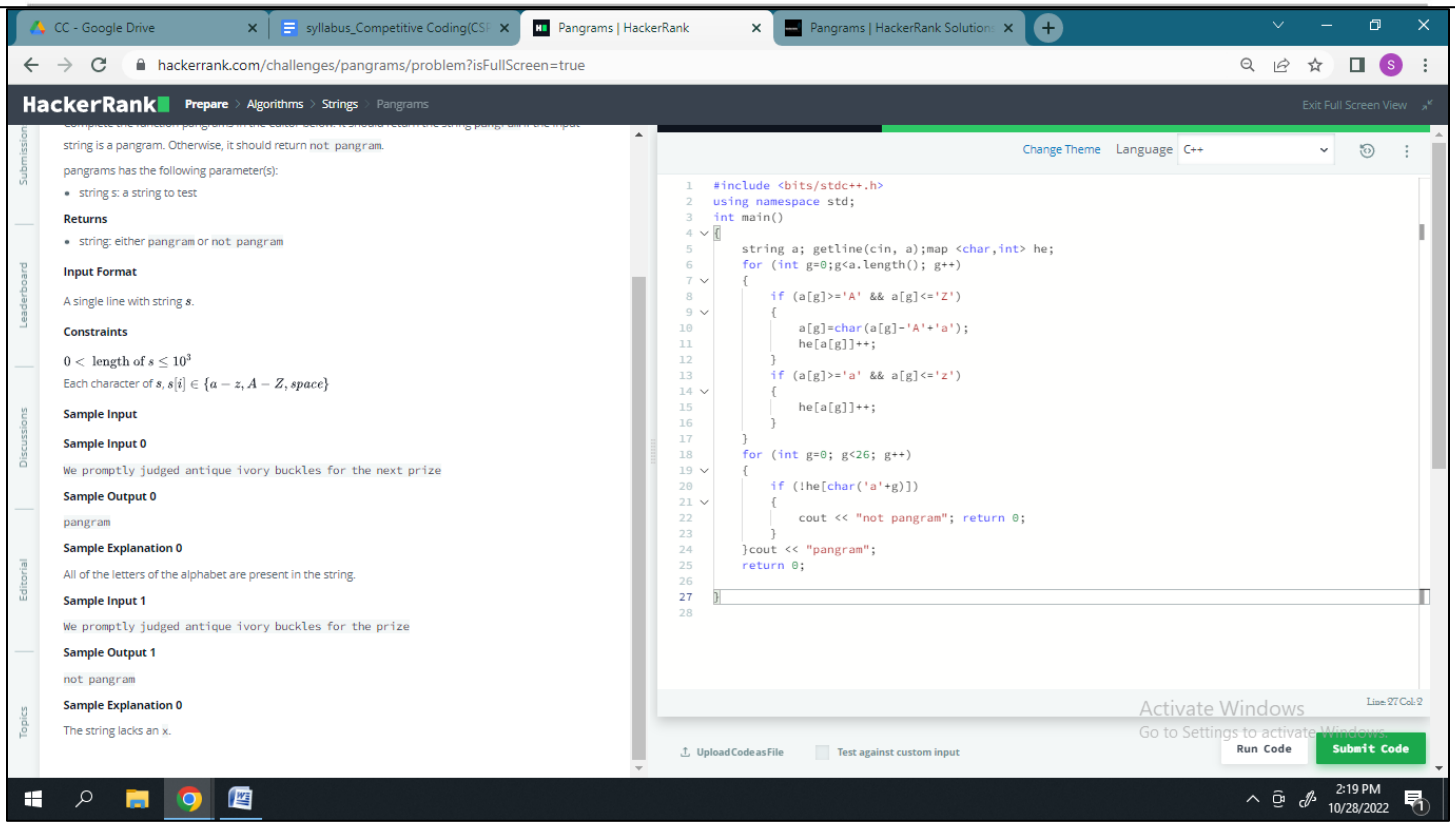
Leaderboard
Discussions
Editorial
A pangram is a string that contains every letter of the alphabet. Given a sentence determine whether it is a pangram in the English alphabet. Ignore case. Return either pangram or not pangram as appropriate.
Example
$s =$ 'The quick brown fox jumps over the lazy dog'
The string contains all letters in the English alphabet, so return pangram.
Function Description
Complete the function pangrams in the editor below. It should return the string pangram if the input string is a pangram. Otherwise, it should return not pangram.
pangrams has the following parameter(s):
string s: a string to test
Returns
string: either pangram or not pangram
Input Format
A single line with string s.
Constraints
$0 <$ length of $s \leq 10^3$
Each character of s, $s[i] \in \{a-z, A-Z, space\}$
Sample Input
Sample Input 0
We promptly judged antique ivory buckles for the next prize
Sample Output 0
pangram
Sample Explanation 0
All of the letters of the alphabet are present in the string.
Upload Code as File
Test against custom input
Run Code
Submit Code
You have earned 20.00 points!
You are now 195 points away from the 4th star for your problem solving badge.
29%
280/475
Congratulations
You solved this challenge. Would you like to challenge your friends?
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
We promptly judged antique ivory buckles for the next prize
Expected Output
Download
pangram
Activate Windows
Go to Settings to activate Windows.
2:18 PM
10/28/2022



Learning outcomes (What I have learnt):

- Learned about the concept of String Data Structure.
- Learned about implementing the concept of String Data Structure.
- Learned different approaches used to separate the numbers.

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			