

## Find minimum number in string

- You had a sequence of consecutive nonnegative integers. You appended all integers at the end of each other to form a string 'S' without any separators. While appending each integer in a string, you forgot to append exactly one integer from the sequence. Now all the integers from a string and you don't know which integer you have missed.
  - For example sequence 11, 12, 13 may form a string (without any separators) "1113" if you miss 12.
  - Your task is to find the missing number in the string such that it is possible to obtain a sequence of consecutive non-negative integers from the given string. If more than one missing integer is present or all the integers are already present or if the string is not valid then the answer will be -1 for all such cases.
- Note:**
- The string consists of only digits 0 to 9.
  - The numbers will have no more than six digits.

Detailed explanation (Input/output format, Notes, Images)

### Constraints:

- $1 \leq T \leq 100$
- $1 \leq |S| \leq 10^4$
- $0 \leq S[i] \leq 9$

Where  $|S|$  denotes the length of the given string 'S' and  $S[i]$  is the digit at index i.

Time Limit: 1 sec.

### Sample Input 1:

```
2  
89101113  
9899101102
```

### Sample Output 1:

```
12  
100
```

### → Approach:-

9899101102

- Since, the no. of digits is 6.
- We will make all possible number ie one digit, two digit, three digit and so on.
- We will make a record of the no. of missing number.

```
#include <bits/stdc++.h>
string missingNumber(string str)
{
    int len = str.length();
    for(int str_len = 1; str_len <= 6; str_len++) {
        string current = str.substr(0, str_len);
        int missingCnt = 0;
        string missingNum = "-1";

        int pos = str_len;
        while(pos < len) {
            int number = stoi(current);
            int nextNum = number + 1;
            string nextStr = to_string(nextNum);
            int nextLen = nextStr.length();
            if(str.substr(pos, nextLen) == nextStr) {
                pos += nextLen;
            } else {
                missingCnt++;
                if(missingCnt > 1) break;
                missingNum = to_string(nextNum);
            }
            current = nextStr;
        }
        if(missingCnt == 1) return missingNum;
    }
    return "-1";
}
```