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stringstream in C++ and its Applications

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A stringstream associates a string object with a stream allowing you to read from the string as if it were a stream (like cin). To use stringstream, we need to include ***sstream*** header file. The stringstream class is extremely useful in parsing input.

Basic methods are:

1. **clear()**- To clear the stream.
2. **str()**- To get and set string object whose content is present in the stream.
3. **operator <<-** Add a string to the stringstream object.
4. **operator >>-** Read something from the stringstream object.

Examples:

1. Count the number of words in a string

AD

Examples:

Input: *Asipu Pawan Kumar***Output:** *3*

Input: *Geeks For Geeks Ide*

Output: *4*

Below is the C++ program to implement the above approach-

C++

```
// C++ program to count words in
// a string using stringstream.
#include <iostream>
#include <sstream>
#include<string>
using namespace std;

int countWords(string str)
{
    // Breaking input into word
    // using string stream

    // Used for breaking words
    stringstream s(str);

    // To store individual words
    string word;

    int count = 0;
    while (s >> word)
        count++;
    return count;
}

// Driver code
int main()
{
    string s = "geeks for geeks geeks "
               "contribution placements";
    cout << " Number of words are: " << countWords(s);
    return 0;
}
```

Output

Number of words are: 6

Time complexity: $O(n \cdot \log(n))$.

Auxiliary space: $O(n)$.

2. Print frequencies of individual words in a string

Examples:**Input:** *Geeks For Geeks Quiz Geeks Quiz Practice Practice***Output:** *For -> 1**Geeks -> 3**Practice -> 2**Quiz -> 2***Input:** *Word String Frequency String***Output:** *Frequency -> 1**String -> 2**Word -> 1*

Below is the C++ program to implement the above approach-

C++

```
// C++ program to demonstrate use
// of stringstream to count
// frequencies of words.
#include <bits/stdc++.h>
#include <iostream>
#include <sstream>
#include <string>
using namespace std;

void printFrequency(string st)
{
    // Each word it mapped to
    // it's frequency
    map<string, int>FW;

    // Used for breaking words
    stringstream ss(st);

    // To store individual words
    string Word;

    while (ss >> Word)
        FW[Word]++;

    map<string, int>::iterator m;
    for (m = FW.begin(); m != FW.end(); m++)
        cout << m->first << "-> "
              << m->second << "\n";
}

// Driver code
```

```
int main()
{
    string s = "Geeks For Geeks Ide";
    printFrequency(s);
    return 0;
}
```

Output

For-> 1

Geeks-> 2

Ide-> 1

Time complexity: $O(n \cdot \log(n))$.

Auxiliary space: $O(n)$.

3. Convert Integer to string

Since, the insertion and extraction operators of string stream work with different data types. So that's why it works well with integers.

We will insert an integer into the string stream and after extracting that into a string, that integer value will become a string.

Code-

C++

```
// C++ program to demonstrate the
// use of a stringstream to
// convert int to string
#include <iostream>
#include <sstream>
using namespace std;

// Driver code
int main()
{
    int val=123;

    // object from the class stringstream
    stringstream geek;

    // inserting integer val in geek stream
    geek << val;

    // The object has the value 123
    // and stream it to the string x
    string x;
    geek >> x;
```

```
// Now the string x holds the
// value 123
cout<<x+"4"<<endl;
return 0;
}
```

Output-

1234

Time complexity: $O(n)$, n is the length of the integer

Auxiliary space: $O(n)$

[Removing spaces from a string using Stringstream](#)

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This article is contributed by **ASIPU PAWAN KUMAR**. If you like GeeksforGeeks and would like to contribute, you can also write an article using [write.geeksforgeeks.org](https://www.geeksforgeeks.org/write-to-geeksforgeeks/) or mail your article to review-team@geeksforgeeks.org. See your article appearing on the GeeksforGeeks main page and help other Geeks.

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