

Valid Anagram in C++																																																			
<pre>#include <iostream> #include <string> #include <unordered_map> class ValidAnagrams { public: static bool sol(const std::string& s1, const std::string& s2) { std::unordered_map<char, int> map; for (char ch : s1) { map[ch]++; } for (char ch : s2) { if (map.find(ch) == map.end()) { return false; } else if (map[ch] == 1) { map.erase(ch); } else { map[ch]--; } } return map.empty(); } }; int main() { std::string s1 = "abbcaad"; std::string s2 = "babacda"; std::cout << (ValidAnagrams::sol(s1, s2) ? "true" : "false") << std::endl; return 0; }</pre>		<div>Dry Run Table for <code>ValidAnagrams::sol(s1, s2)</code></div> <div>Input:</div> <div>s1 = "abbcaad"; s2 = "babacda";</div> <div>Step 1: Build Character Frequency Map (s1)</div> <table><tr><th>Iteration</th><th>Character (ch)</th><th>map[ch] (Updated)</th><th>map State</th></tr><tr><td>0</td><td>'a'</td><td>1</td><td>{ 'a': 1 }</td></tr><tr><td>1</td><td>'b'</td><td>1</td><td>{ 'a': 1, 'b': 1 }</td></tr><tr><td>2</td><td>'b'</td><td>2</td><td>{ 'a': 1, 'b': 2 }</td></tr><tr><td>3</td><td>'c'</td><td>1</td><td>{ 'a': 1, 'b': 2, 'c': 1 }</td></tr><tr><td>4</td><td>'a'</td><td>2</td><td>{ 'a': 2, 'b': 2, 'c': 1 }</td></tr><tr><td>5</td><td>'a'</td><td>3</td><td>{ 'a': 3, 'b': 2, 'c': 1 }</td></tr><tr><td>6</td><td>'d'</td><td>1</td><td>{ 'a': 3, 'b': 2, 'c': 1, 'd': 1 }</td></tr></table> <div>Final map after processing s1:</div> <div>{ 'a': 3, 'b': 2, 'c': 1, 'd': 1 }</div> <div>Step 2: Validate Using s2</div> <table><tr><th>Iteration</th><th>Character (ch)</th><th>Action</th><th>map[ch] (Updated)</th><th>map State</th></tr><tr><td>0</td><td>'b'</td><td>Decrement</td><td>1</td><td>{ 'a': 3, 'b': 1, 'c': 1, 'd': 1 }</td></tr><tr><td>1</td><td>'a'</td><td>Decrement</td><td>2</td><td>{ 'a': 2, 'b': 1, 'c': 1, 'd': 1 }</td></tr></table>			Iteration	Character (ch)	map[ch] (Updated)	map State	0	'a'	1	{ 'a': 1 }	1	'b'	1	{ 'a': 1, 'b': 1 }	2	'b'	2	{ 'a': 1, 'b': 2 }	3	'c'	1	{ 'a': 1, 'b': 2, 'c': 1 }	4	'a'	2	{ 'a': 2, 'b': 2, 'c': 1 }	5	'a'	3	{ 'a': 3, 'b': 2, 'c': 1 }	6	'd'	1	{ 'a': 3, 'b': 2, 'c': 1, 'd': 1 }	Iteration	Character (ch)	Action	map[ch] (Updated)	map State	0	'b'	Decrement	1	{ 'a': 3, 'b': 1, 'c': 1, 'd': 1 }	1	'a'	Decrement	2	{ 'a': 2, 'b': 1, 'c': 1, 'd': 1 }
Iteration	Character (ch)	map[ch] (Updated)	map State																																																
0	'a'	1	{ 'a': 1 }																																																
1	'b'	1	{ 'a': 1, 'b': 1 }																																																
2	'b'	2	{ 'a': 1, 'b': 2 }																																																
3	'c'	1	{ 'a': 1, 'b': 2, 'c': 1 }																																																
4	'a'	2	{ 'a': 2, 'b': 2, 'c': 1 }																																																
5	'a'	3	{ 'a': 3, 'b': 2, 'c': 1 }																																																
6	'd'	1	{ 'a': 3, 'b': 2, 'c': 1, 'd': 1 }																																																
Iteration	Character (ch)	Action	map[ch] (Updated)	map State																																															
0	'b'	Decrement	1	{ 'a': 3, 'b': 1, 'c': 1, 'd': 1 }																																															
1	'a'	Decrement	2	{ 'a': 2, 'b': 1, 'c': 1, 'd': 1 }																																															

	Iteration	Character (ch)	Action	map[ch] (Updated)	map State
	2	'b'	Remove from map	—	{ 'a': 2, 'c': 1, 'd': 1 }
	3	'a'	Decrement	1	{ 'a': 1, 'c': 1, 'd': 1 }
	4	'c'	Remove from map	—	{ 'a': 1, 'd': 1 }
	5	'd'	Remove from map	—	{ 'a': 1 }
	6	'a'	Remove from map	—	{ }
	Final map state: Empty {} , meaning both strings are anagrams.				
✔ Output: "true"					

Output:-
true