

Prompt	Scratchpad	Our Solution(s)	Video Explanation	Run Code
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Solution 1

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1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 ▾ #include <sstream>
4 using namespace std;
5
6 bool isImportantToken(string token);
7
8 // O(n) time | O(n) space - where n is the length of the path
9 ▾ string shortenPath(string path) {
10     bool startsWithSlash = path[0] == '/';
11     istringstream iss(path);
12     string token;
13
14     vector<string> tokens;
15     vector<string> filteredTokens;
16 ▾ while (getline(iss, token, '/')) {
17     tokens.push_back(token);
18 }
19 copy_if (tokens.begin(), tokens.end(), back_inserter(filteredTokens), isImportantToken);
20
21     vector<string> stack;
22     if (startsWithSlash) stack.push_back("");
23 ▾ for (string token : filteredTokens) {
24 ▾     if (token == "..") {
25 ▾         if (stack.size() == 0 || stack[stack.size() - 1] == "..") {
26             stack.push_back(token);
27 ▾         } else if (stack[stack.size() - 1] != "") {
28             stack.pop_back();
29         }
30 ▾     } else {
31         stack.push_back(token);
32     }
33 }
34
35     if (stack.size() == 1 && stack[0] == "") return "/";
36
37     ostringstream oss;
38 ▾ for (auto i = 0; i < stack.size(); i++) {
39     if (i != 0) oss << "/";
40     oss << stack[i];
41 }
42
43     return oss.str();
44 }
45
46 ▾ bool isImportantToken(string token) {
47     return token.length() && token != ".";
48 }
```

