

| Facing the sun in C++ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------|--------------|--|-------|----------|-----------|--------------|--------------|------------------|-------|----------|---|---|---|--------------------|---|---|---|---|---|----|---|---|---|---|---|-----|---|---|---|---|---|----|---|---|---|---|---|-----|---|---|---|---|---|----|---|---|
| <pre> #include <iostream> #include <vector> using namespace std; class FacingTheSun { public: static int countBuildings(vector<int>& ht) { int lmax = ht[0]; int count = 1; for (int i = 1; i < ht.size(); i++) { if (ht[i] > lmax) { count++; lmax = ht[i]; } } return count; } }; int main() { // Hardcoded input int n = 6; vector<int> ht = {7, 4, 8, 2, 9, 6}; // Call the countBuildings function to count // buildings facing the sun int result = FacingTheSun::countBuildings(ht); // Print the result cout << "Number of buildings facing the sun: " << result << endl; return 0; } </pre> | | | <p>Input:</p> <p>ht = {7, 4, 8, 2, 9, 6}</p> <p>🔍 Dry Run Table:</p> <table> <tr> <th>Index (i)</th><th>Height ht[i]</th><th>Current lmax</th><th>Is ht[i] > lmax?</th><th>Count</th><th>New lmax</th></tr> <tr> <td>0</td><td>7</td><td>7</td><td>- (first building)</td><td>1</td><td>7</td></tr> <tr> <td>1</td><td>4</td><td>7</td><td>No</td><td>1</td><td>7</td></tr> <tr> <td>2</td><td>8</td><td>7</td><td>Yes</td><td>2</td><td>8</td></tr> <tr> <td>3</td><td>2</td><td>8</td><td>No</td><td>2</td><td>8</td></tr> <tr> <td>4</td><td>9</td><td>8</td><td>Yes</td><td>3</td><td>9</td></tr> <tr> <td>5</td><td>6</td><td>9</td><td>No</td><td>3</td><td>9</td></tr> </table> <p>✅ Final Result:</p> <p>Number of buildings facing the sun = 3</p> <p>🖨️ Output:</p> <p>Number of buildings facing the sun: 3</p> | | | Index (i) | Height ht[i] | Current lmax | Is ht[i] > lmax? | Count | New lmax | 0 | 7 | 7 | - (first building) | 1 | 7 | 1 | 4 | 7 | No | 1 | 7 | 2 | 8 | 7 | Yes | 2 | 8 | 3 | 2 | 8 | No | 2 | 8 | 4 | 9 | 8 | Yes | 3 | 9 | 5 | 6 | 9 | No | 3 | 9 |
| Index (i) | Height ht[i] | Current lmax | Is ht[i] > lmax? | Count | New lmax | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 7 | 7 | - (first building) | 1 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 4 | 7 | No | 1 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 8 | 7 | Yes | 2 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 2 | 8 | No | 2 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 9 | 8 | Yes | 3 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 6 | 9 | No | 3 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of buildings facing the sun: 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |