**SOLUTION 2**

#include <iostream>

#include <vector>

#include <string>

#include <algorithm>

using namespace std;

int length(string s) {

int n = s.length();

int maxLength = 0;

vector<int> charIndex(128, -1);

int left = 0;

for (int right = 0; right < n; right++) {

if (charIndex[s[right]] >= left) {

left = charIndex[s[right]] + 1;

}

charIndex[s[right]] = right;

maxLength = max(maxLength, right - left + 1);

}

return maxLength;

}

int main() {

string s = "abcabcbb";

cout << "The length of the longest substring " << length(s) << endl;

s = "ananananannaaananan";

cout << "The length of the longest substring " << length(s) << endl;

return 0;

}

