

Reverse a number using stack

Given a number , write a program to reverse this number using stack.

Input Format

In the function an integer is passed

Output Format

Return an integer

Sample Input

456

Sample Output

654

Solution: reverseNumber.cpp

Stock Span Problem

Write a class `StockSpanner` which collects daily price quotes for some stock, and returns the *span* of that stock's price for the current day.

The span of the stock's price today is defined as the maximum number of consecutive days (starting from today and going backwards) for which the price of the stock was less than or equal to today's price.

For example, if the price of a stock over the next 7 days were [100, 80, 60, 70, 60, 75, 85], then the stock spans would be [1, 1, 1, 2, 1, 4, 6].

Input Format

In the function an integer vector is passed representing daily prices.

Output Format

Return an integer vector representing the *span* of that stock's price

Solution: stockSpannerStack.cpp & stockSpanner.cpp

Next Greater Element

Given an array, return the Next Greater Element for every element. The Next greater Element for an element x is the first greater element on the right side of x in the array. Elements for which no greater element exist, consider the next greater element as -1.

Input Format

In the function an integer vector is passed

Output Format

Return an integer vector containing the next greater element for each element

Sample Input

v = { 4, 5, 2, 25 }

Sample Output

{ 5, 25, 25, -1 }

Solution: nextGreaterElement.cpp

Duplicate Parentheses

Given a balanced expression, find if it contains duplicate parenthesis or not. A set of parenthesis are duplicate if the same subexpression is surrounded by multiple parenthesis.

Input Format

In the function a balanced string str is passed.

Output Format

Return a true if it contains duplicates else return false.

Sample Input 1

((a+b)+((c+d)))

Sample Output 1

true

Sample Input 2

((a+(b)))+(c+d))

Sample Output 2

true

Explanation

sample 1: The subexpression "c+d" is surrounded by two pairs of brackets.
sample 2: The subexpression "a+(b)" is surrounded by two pairs of brackets.

Solution: duplicateParantheses.cpp

Maximum Rectangular Area in Histogram

Find the largest rectangular area possible in a given histogram where the largest rectangle can be made of a number of contiguous bars. Assume that all bars have width of 1 unit.

Input Format

In the function an integer vector representing height of the bars is passed.

Output Format

Return an integer representing the maximum possible area.

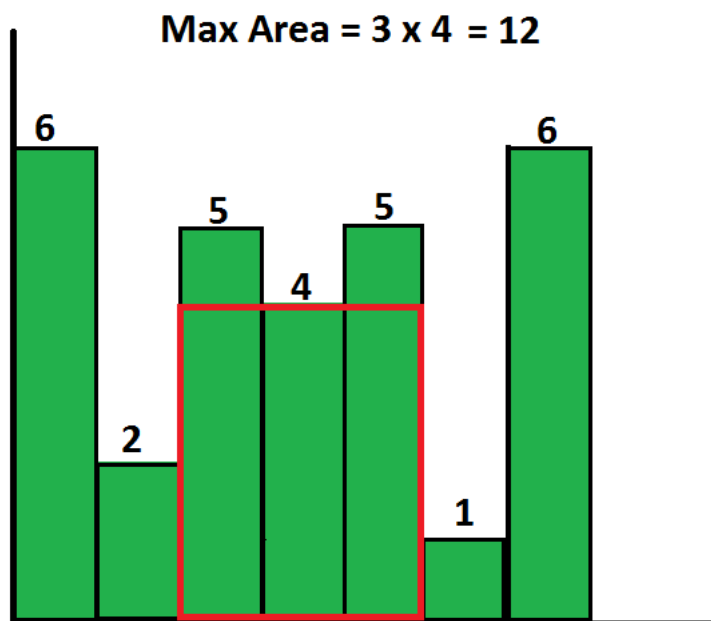
Sample Input

{6, 2, 5, 4, 5, 1, 6}

Sample Output

12

Explanation



Solution: maxRectAreaHist.cpp