

Maximal Rectangle

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Question

Solution

Total Accepted: **32845** Total Submissions: **146871** Difficulty: **Hard**

Given a 2D binary matrix filled with 0's and 1's, find the largest rectangle containing all ones and return its area.

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Python



```
1 class Solution(object):
2     def maximalRectangle(self, matrix):
3         """
4         :type matrix: List[List[str]]
5         :rtype: int
6         """
7         row = len(matrix)
8         col = 0 if row==0 else len(matrix[0])
9         map = [0 for i in range(col)]
10        stack = [0 for i in range(col)]
11        top=0;max=0
12        for i in range(row):
13            for j in range(col):
14                if matrix[i][j]=='1':map[j]+=1
15                else:map[j]=0
16                while top>0 and map[stack[top-1]]>map[j]:
17                    index = stack[top-1]
18                    top-=1
19                    area = (j if top==0 else j-stack[top-1]-1)*map[index]
20                    max = max if max>area else area
21                stack[top]=j
22                top+=1
23            while top>0:
24                index = stack[top-1]
25                top-=1
26                area = (col if top==0 else col-stack[top-1]-1)*map[index]
27                max = max if max>area else area
28        return max
```

Custom Testcase ☐

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