杂题混练

人员

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上周作业检查

Begin: 2025-01-04 10:02 CST   ☆ 👥 **2025-0104 ~ 0105 三队上课**   **End:** 2025-05-09 10:02 CST

Elapsed: 6:22:42:36   **Running**   **Remaining:** 118:01:17:23

				Setting	Clone	Update	Delete
Overview	Problem	Status	Rank (6:22:42:35)	Discuss			

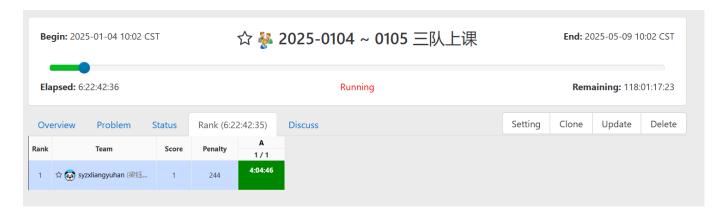| Rank	Team	Score	Penalty	A 1 / 1
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作业

https://vjudge.net/contest/684912

课堂表现

今天课上的 2 道题目都相对复杂一些, 有许多同学课上没做出来, 课下一定要抽时间补完这 2 道题目。

课堂内容

CF1016C Vasya And The Mushrooms

```cpp
#include <bits/stdc++.h>

using namespace std;

typedef long long LL;
const int maxn = 3e5 + 5;
int w[3][maxn];
LL p[3][maxn], pV[3][maxn], sV[3][maxn];

LL get_pre_sum(int row, int l, int r, LL c[][maxn]) {
  return (l>r ? 0 : c[row][r] - c[row][l-1]);
}

LL get_suf_sum(int row, int l, int r, LL c[][maxn]) {
  return (l>r ? 0 : c[row][l] - c[row][r+1]);
}

LL pre_value(int row, int l, int r, int id) {
```

```cpp
    return get_pre_sum(row,l,r,pV) + (id-1)*get_pre_sum(row,l,r,p);
}

LL suf_value(int row, int l, int r, int id) {
    return get_suf_sum(row,l,r,sV) + (id-1)*get_pre_sum(row,l,r,p);
}

LL calc(int n, int x, int y, int id) {
    LL res = 0;
    if (x == 1) {
        if (y&1) {
            // (1,y) ~ (1,n)   (2,y) ~ (2,n)
            res = pre_value(1,y,n,id) + suf_value(2,y,n,id+n-y+1);
        } else {
            // (1,y) ~ (1,n)   (2,y+1) ~ (2,n)
            res = pre_value(1,y,n,id) + suf_value(2,y+1,n,id+n-y+1);
        }
    } else {
        if (y&1) {
            // (2,y) ~ (2,n)   (1,y+1) ~ (1,n)
            res = pre_value(2,y,n,id) + suf_value(1,y+1,n,id+n-y+1);
        } else {
            // (2,y) ~ (2,n)   (1,y) ~ (1,n)
            res = pre_value(2,y,n,id) + suf_value(1,y,n,id+n-y+1);
        }
    }
    return res;
}

int main()
{
    int n; cin >> n;
    for (int i = 1; i <= 2; ++i) {
        for (int j = 1; j <= n; ++j) cin >> w[i][j];
    }

    for (int i = 1; i <= 2; ++i) {
        for (int j = 1; j <= n; ++j) {
            p[i][j] = p[i][j-1] + w[i][j];
            pV[i][j] = pV[i][j-1] + 1LL*j*w[i][j];
        }
        for (int j = n; j >= 1; --j) {
            sV[i][j] = sV[i][j+1] + 1LL*(n-j+1)*w[i][j];
        }
    }

    int id = 0;
    LL res = 0, sum = 0;
    for (int j = 1; j <= n; ++j) {
        if (j&1) {
            for (int i = 1; i <= 2; ++i) {
                res = max(res, sum + calc(n, i, j, id));
                sum += 1LL*id*w[i][j]; ++id;
            }
```

```cpp
    } else {
      for (int i = 2; i >= 1; --i) {
        res = max(res, sum + calc(n, i, j, id));
        sum += 1LL*id*w[i][j]; ++id;
      }
    }
  }
  cout << res << endl;
  return 0;
}
```

CF1437E Make It Increasing

```cpp
#include <bits/stdc++.h>

using namespace std;

const int maxn = 5e5 + 5;
const int inf = 0x3f3f3f3f;
int a[maxn], b[maxn];

int LIS(int l, int r) {
  int low = a[l], up = a[r];
  vector<int> vec;
  for (int i = l; i <= r; ++i) {
    if (a[i]<low || a[i]>up) continue;
    if (vec.empty() || a[i]>=vec.back()) vec.push_back(a[i]);
    else *upper_bound(vec.begin(), vec.end(), a[i]) = a[i];
  }
  return vec.size();
}

int main()
{

  int n, m; cin >> n >> m;
  for (int i = 1; i <= n; ++i) cin >> a[i], a[i] -= i;
  for (int i = 1; i <= m; ++i) cin >> b[i];

  for (int i = 2; i <= m; ++i) {
    if (a[b[i-1]] > a[b[i]]) { cout << -1 << endl; return 0; }
  }

  b[0] = 0, b[m+1] = n+1;
  a[0] = -inf, a[n+1] = inf;

  int res = 0;
  for (int i = 0; i <= m; ++i) res += (b[i+1]-b[i]+1) - LIS(b[i], b[i+1]);
  cout << res << endl;
```

```
    return 0;
}
```

```
    return 0;
}
```