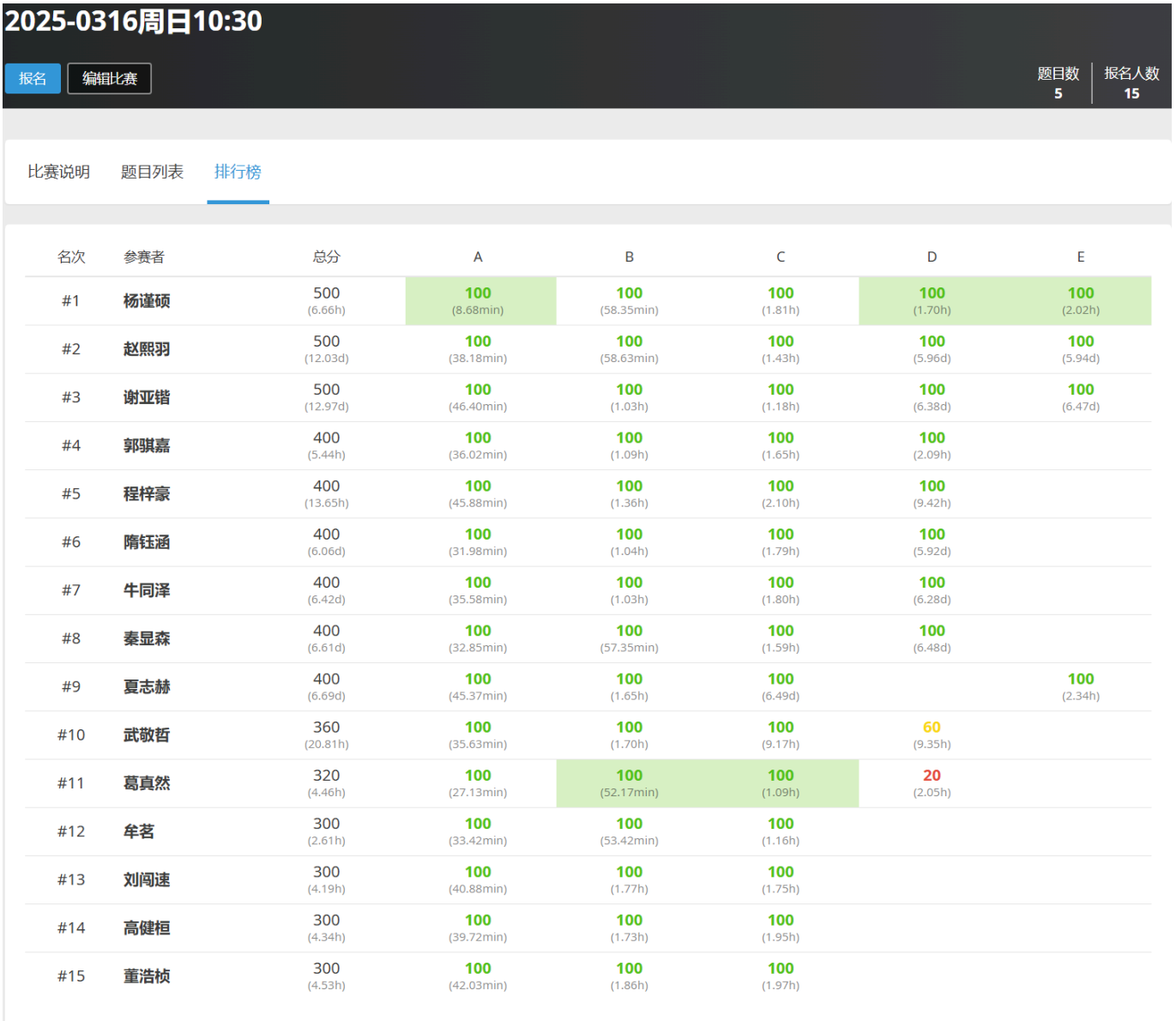
前缀最小最大值

人员

程梓豪、隋钰涵、赵熙羽、高健桓、杨瑾硕、董浩桢、牛同泽、秦显森、郭骐嘉、夏志赫、刘闯速、武敬哲、谢亚锴 到课

上周作业检查

https://www.luogu.com.cn/contest/236357



2025-0316周日10:30

报名 编辑比赛

题目数 5 | 报名人数 15

比赛说明 题目列表 排行榜

名次	参赛者	总分	A	B	C	D	E
#1	杨谨硕	500 (6.66h)	100 (8.68min)	100 (58.35min)	100 (1.81h)	100 (1.70h)	100 (2.02h)
#2	赵熙羽	500 (12.03d)	100 (38.18min)	100 (58.63min)	100 (1.43h)	100 (5.96d)	100 (5.94d)
#3	谢亚锴	500 (12.97d)	100 (46.40min)	100 (1.03h)	100 (1.18h)	100 (6.38d)	100 (6.47d)
#4	郭骐嘉	400 (5.44h)	100 (36.02min)	100 (1.09h)	100 (1.65h)	100 (2.09h)	
#5	程梓豪	400 (13.65h)	100 (45.88min)	100 (1.36h)	100 (2.10h)	100 (9.42h)	
#6	隋钰涵	400 (6.06d)	100 (31.98min)	100 (1.04h)	100 (1.79h)	100 (5.92d)	
#7	牛同泽	400 (6.42d)	100 (35.58min)	100 (1.03h)	100 (1.80h)	100 (6.28d)	
#8	秦显森	400 (6.61d)	100 (32.85min)	100 (57.35min)	100 (1.59h)	100 (6.48d)	
#9	夏志赫	400 (6.69d)	100 (45.37min)	100 (1.65h)	100 (6.49d)		100 (2.34h)
#10	武敬哲	360 (20.81h)	100 (35.63min)	100 (1.70h)	100 (9.17h)	60 (9.35h)	
#11	葛真然	320 (4.46h)	100 (27.13min)	100 (52.17min)	100 (1.09h)	20 (2.05h)	
#12	牟茗	300 (2.61h)	100 (33.42min)	100 (53.42min)	100 (1.16h)		
#13	刘闯速	300 (4.19h)	100 (40.88min)	100 (1.77h)	100 (1.75h)		
#14	高健桓	300 (4.34h)	100 (39.72min)	100 (1.73h)	100 (1.95h)		
#15	董浩桢	300 (4.53h)	100 (42.03min)	100 (1.86h)	100 (1.97h)		

作业

https://www.luogu.com.cn/contest/237832 (课上讲了 A~E 题, 课后作业是 F G 题)

课堂表现

今天的 B C D 三道题有一些相似性, 都是通过减少循环来做。同学们课上整体吸收做题情况不错, 课下也得再好好复习一下。

课堂内容

P1318 积水面积

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

using namespace std;

const int maxn = 5000 + 5;
int w[maxn];

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

    int res = 0;
    for (int i = 2; i <= n-1; ++i) {
        int lmaxx = 0, rmaxx = 0;
        for (int j = 1; j <= i-1; ++j) lmaxx = max(lmaxx, w[j]);
        for (int j = i+1; j <= n; ++j) rmaxx = max(rmaxx, w[j]);
        res += max(min(lmaxx,rmaxx)-w[i], 0);
    }
    cout << res << endl;
    return 0;
}
```

U545755 积水面积2

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

using namespace std;

typedef long long LL;
const int maxn = 1e6 + 5;
int w[maxn];
int p_maxx[maxn], s_maxx[maxn];

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

    for (int i = 1; i <= n; ++i) p_maxx[i] = max(p_maxx[i-1], w[i]);
    for (int i = n; i >= 1; --i) s_maxx[i] = max(s_maxx[i+1], w[i]);
```

```
    LL res = 0;
    for (int i = 2; i <= n-1; ++i) {
        int lmaxx = p_maxx[i-1], rmaxx = s_maxx[i+1];
        res += max(min(lmaxx,rmaxx)-w[i], 0);
    }
    cout << res << endl;
    return 0;
}
```

U545760 找两数之差的最小值

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

using namespace std;

const int maxn = 1e6 + 5;
int w[maxn], p_minn[maxn];

int main()
{
    int n; cin >> n;
    for (int i = 1; i <= n; ++i) cin >> w[i];
    p_minn[1] = w[1];
    for (int i = 2; i <= n; ++i) p_minn[i] = min(p_minn[i-1], w[i]);

    int res = -2e9-10;
    for (int i = 2; i <= n; ++i) res = max(res, w[i]-p_minn[i-1]);
    cout << res << endl;
    return 0;
}
```

P1115 最大子段和

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

using namespace std;

const int maxn = 2e5 + 5;
int w[maxn], p[maxn];
int p_min[maxn];

int main()
{
  int n; cin >> n;
  int res = -1000;
  for (int i = 1; i <= n; ++i) {
    cin >> w[i], p[i] = p[i-1] + w[i];
    p_min[i] = min(p_min[i-1], p[i]);
```

```
    res = max(res, p[i] - p_min[i-1]);
  }
  cout << res << endl;
  return 0;
}
```

P2678 [NOIP 2015 提高组] 跳石头

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

using namespace std;

const int maxn = 5e4 + 5;
int w[maxn];
int L, n, m;

bool check(int mid) {
  int cnt = 0, last = 0;
  for (int i = 1; i <= n; ++i) {
    if (w[i]-last >= mid) last = w[i];
    else cnt++;
  }
  return cnt <= m;
}

int main()
{
  cin >> L >> n >> m;
    for (int i = 1; i <= n; ++i) cin >> w[i];
    w[n+1] = L, n++;

    int l = 1, r = L;
    while (l <= r) {
    int mid = (l + r) / 2;
    if (check(mid)) l = mid+1;
    else r = mid-1;
    }
    cout << r << endl;
  return 0;
}
```