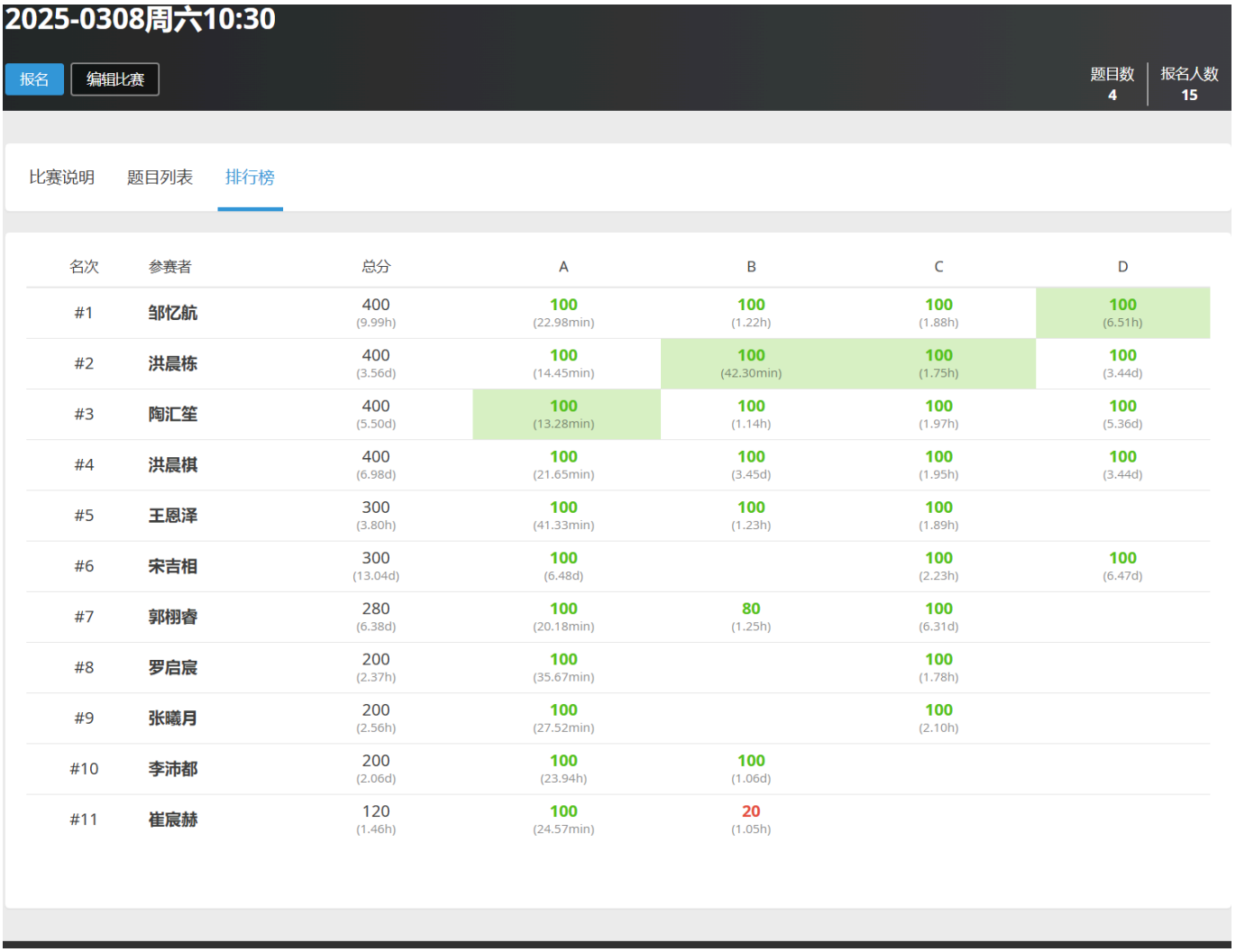
一维前缀和

人员

郭栩睿、洪晨栋、洪晨棋、陶汇笙、邹忆航、张曦月、崔宸赫、宋吉相、李沛都、罗启宸、王静嘉 到课

作业检查

上周作业链接: https://www.luogu.com.cn/contest/234727



2025-0308周六10:30

报名 编辑比赛

题目数 4 | 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
#1	邹忆航	400 (9.99h)	100 (22.98min)	100 (1.22h)	100 (1.88h)	100 (6.51h)
#2	洪晨栋	400 (3.56d)	100 (14.45min)	100 (42.30min)	100 (1.75h)	100 (3.44d)
#3	陶汇笙	400 (5.50d)	100 (13.28min)	100 (1.14h)	100 (1.97h)	100 (5.36d)
#4	洪晨棋	400 (6.98d)	100 (21.65min)	100 (3.45d)	100 (1.95h)	100 (3.44d)
#5	王恩泽	300 (3.80h)	100 (41.33min)	100 (1.23h)	100 (1.89h)	
#6	宋吉相	300 (13.04d)	100 (6.48d)		100 (2.23h)	100 (6.47d)
#7	郭栩睿	280 (6.38d)	100 (20.18min)	80 (1.25h)	100 (6.31d)	
#8	罗启宸	200 (2.37h)	100 (35.67min)		100 (1.78h)	
#9	张曦月	200 (2.56h)	100 (27.52min)		100 (2.10h)	
#10	李沛都	200 (2.06d)	100 (23.94h)	100 (1.06d)		
#11	崔宸赫	120 (1.46h)	100 (24.57min)	20 (1.05h)		

作业

https://www.luogu.com.cn/contest/236094 (课上讲了 A~D 这些题, 课后作业是 E 题)

课堂表现

今天新讲了一维前缀和的内容, 整体内容不是很难, 同学们课上整体做题表现都不错, 课下也要好好复习。

课堂内容

AT_abc307_d [ABC307D] Mismatched Parentheses

```cpp
#include <bits/stdc++.h>
using namespace std;

const int maxn = 2e5 + 5;
char s[maxn];
bool f[maxn];

int main ()
{
    int n; cin >> n;
    cin >> (s+1);

    stack<int> stk;
    int cnt = 0;
    for (int i = 1; i <= n; ++i) {
        char x = s[i];
        if (x == '(') {
            stk.push(i); cnt++;
        } else if (x == ')') {
            if (cnt == 0) stk.push(i);
            else {
                f[i] = true;
                while (s[stk.top()] != '(') {
                    f[stk.top()] = true; stk.pop();
                }
                f[stk.top()] = true; stk.pop();
                --cnt;
            }
        } else {
            stk.push(i);
        }
    }

    for (int i = 1; i <= n; ++i) {
        if (!f[i]) cout << s[i];
    }
    cout << endl;
    return 0;
}
```

B3612 【深进1.例1】求区间和

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

using namespace std;

const int maxn = 1e5 + 5;
int w[maxn], p[maxn];

int sum(int l, int r) { return (l<=r?p[r]-p[l-1]:0); }
```

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

  int m; cin >> m;
  while (m -- ) {
    int l, r; cin >> l >> r;
    cout << sum(l,r) << endl;
  }
  return 0;
}
```

P5638 【CSGRound2】光骓者的荣耀

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

using namespace std;

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

LL sum(int l, int r) { return (l<=r?p[r]-p[l-1]:0); }

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

  if (k >= n-1) { cout << 0 << endl; return 0; }

  LL res = p[n-1], maxx = 0;
  for (int i = 1; i <= n-1; ++i) {
    int j = i + k - 1;
    maxx = max(maxx, sum(i, j));
  }
  cout << res - maxx << endl;
  return 0;
}
```

P8772 [蓝桥杯 2022 省 A] 求和

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

using namespace std;
```

```
typedef long long LL;
const int maxn = 2e5 + 5;
int w[maxn]; LL p[maxn];

LL sum(int l, int r) { return (l<=r?p[r]-p[l-1]:0); }

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

  LL res = 0;
  for (int i = 1; i <= n-1; ++i) res += w[i] * sum(i+1, n);
  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;
}
```