综合混练.md 2025-05-31

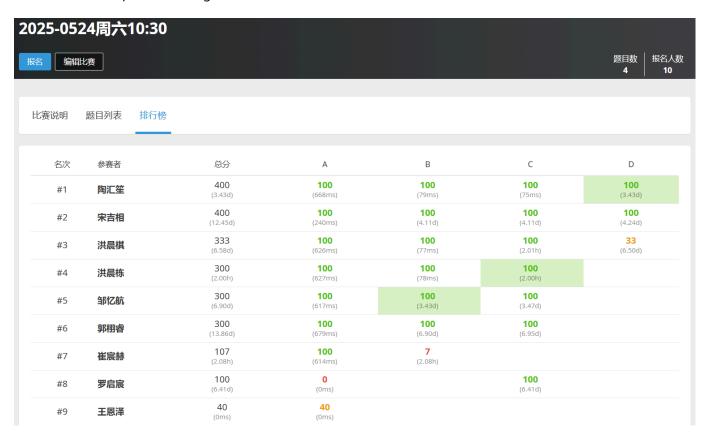
综合混练

人员

洪晨栋、洪晨棋、郭栩睿、宋吉相、邹忆航、罗启宸、王恩泽 到课, 陶汇笙 线上

作业检查

上周作业链接: https://www.luogu.com.cn/contest/248472



作业

https://www.luogu.com.cn/contest/249803 (课上讲了 A ~ B 这些题, 课后作业是 C 题)

课堂表现

今天课上的题目整体都比较难,同学们课上可能只是听懂了,但不一定完全掌握,课后也一定要拿纸笔好好分析分析。

课堂内容

P1843 奶牛晒衣服

二分, 判断 mid 秒能否把所有衣服都烘干即可

#include <bits/stdc++.h>

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```
using namespace std;
typedef long long LL;
const int maxn = 5e5 + 5;
int w[maxn];
int n, a, b;
int get_up(int x, int y) { return (x+y-1)/y; }
bool check(int mid) {
 int res = 0;
 for (int i = 1; i <= n; ++i) {
   if (a*mid >= w[i]) continue;
   res += get_up(w[i]-a*mid, b);
   if (res > mid) return false;
  }
  return true;
}
int main()
{
    cin >> n >> a >> b;
    for (int i = 1; i <= n; ++i) cin >> w[i];
    int l = 1, r = 5e5 + 5;
    while (1 <= r) {
    int mid = (1 + r) / 2;
   if (check(mid)) r = mid-1;
    else 1 = mid+1;
    cout << 1 << endl;</pre>
  return 0;
}
```

U514680 expressway

差分维护每条高速公路需要走多少遍, 最后对每条高速公路进行考虑, 看两种买票的策略哪种情况花销更小。

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

using namespace std;

typedef long long LL;
const int maxn = 1e5 + 5;
int w[maxn], a[maxn], b[maxn], c[maxn];
int f[maxn], p[maxn];

void solve(int l, int r) {
  if (1 > r) swap(l, r);
  f[l]++, f[r]--;
}
```

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

  for (int i = 2; i <= m; ++i) solve(w[i-1], w[i]);
  for (int i = 1; i <= n-1; ++i) p[i] = p[i-1] + f[i];

  LL res = 0;
  for (int i = 1; i <= n-1; ++i) {
    LL x1 = (LL)a[i]*p[i];
    LL x2 = c[i] + (LL)b[i]*p[i];
    res += min(x1, x2);
  }
  cout << res << endl;
  return 0;
}</pre>
```

P11272 「Diligent-OI R1 B」 DlgtArray

- 1. 当 k > r-l 时, 无解
- 2. 当 k == r-l 时, [l,r] 这个区间里可以是 全1 或者是 r-l个1
- 3. 当 k < r-l 时, [l,r] 这个区间里必须是 k个1

```
#include <bits/stdc++.h>
using namespace std;
const int maxn = 1e6 + 5;
int w[maxn], p[maxn];
int get_sum(int 1, int r) { return p[r] - p[1-1]; }
int main()
  int n, T; cin >> n >> T;
 for (int i = 1; i \le n; ++i) scanf("%d",&w[i]), p[i] = p[i-1] + w[i];
  while (T -- ) {
   int 1, r, k; scanf("%d%d%d",&1,&r,&k);
   if (k > r-1) cout << -1 << "\n";
    else {
     if (k==r-l && get_sum(l,r)==r-l+1) cout << 0 << "\n";
      else cout << abs(k-get_sum(l,r)) << "\n";</pre>
    }
  }
  return 0;
```

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