二维前缀和 + 一维差分

人员

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作业检查

赵熙羽、牟茗、辛帅辰、高健桓、韩承睿、谢亚锴、徐浩然、夏硕承 完成 A B C 三道作业题

作业

https://www.luogu.com.cn/contest/194988 A B C D 题必做，E 题要求大家至少拿到 48 分

课堂表现

同学们课上听讲都比较认真，不过课下也要好好进行复习，再多写几遍。

课堂内容

T486219 replace

思维题，需要画图找规律

```
#include<iostream>
#include<algorithm>
using namespace std;
int main(){
    long long n,k;
    cin>>n>>k;
    cout<<min(n%k,k-n%k)<<endl;
    return 0;
}
```

P2004 领地选择

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

using namespace std;

const int maxn = 1000 + 5;
int a[maxn][maxn], p[maxn][maxn];

int sum(int x1, int y1, int x2, int y2) {
    return p[x2][y2] - p[x1-1][y2] - p[x2][y1-1] + p[x1-1][y1-1];
}
```

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

    for (int i = 1; i <= n; i++) {
        for (int j = 1; j <= m; j++) {
            p[i][j] = p[i-1][j] + p[i][j-1] - p[i-1][j-1] + a[i][j];
        }
    }

    int maxx = -1e9;
    int x_ = 0, y_ = 0;
    for (int i = 1; i+c-1 <= n; i++) {
        for (int j = 1; j+c-1 <= m; j++) {
            // 左上角是 (i,j)
            // 那么对应右下角的坐标就是 (i+c-1, j+c-1)
            int t = sum(i, j, i+c-1, j+c-1);
            if (t > maxx) {
                maxx = t;
                x_ = i, y_ = j;
            }
        }
    }
    cout << x_ << " " << y_ << endl;
    return 0;
}
```

P2367 语文成绩

差分模板题, 构造一个 c 数组, c[i] = a[i] - a[i-1]

此时, a[i] = c[1] + c[2] + ... + c[i]

每次对 a[l] ~ a[r] 全部加 k, 则只需要做 c[l]+=k, c[r+1]-=k 即可

最后对 c 数组做一遍前缀和, 即可还原 a 数组

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

using namespace std;

const int maxn = 5e6 + 5;
int a[maxn], c[maxn];

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

```
    }

    for (int i = 1; i <= n; i++) {
        c[i] = a[i] - a[i-1];
    }

    while (p -- ) {
        int l, r, k; cin >> l >> r >> k;
        c[l] += k, c[r+1] -= k;
    }

    for (int i = 1; i <= n; i++) {
        a[i] = a[i-1] + c[i];
    }

    int minn = 1e9;
    for (int i = 1; i <= n; i++) {
        minn = min(minn, a[i]);
    }
    cout << minn << endl;
    return 0;
}
```