

CF1100F

区间查询线性基。

```
#include <bits/stdc++.h>
#define maxn 500086
using namespace std;

int n, q, x, y;
int b[maxn][31], pos[maxn][31];//debug: 数组开小调了一万年

inline void insert(int x, int y){
    int z = y;
    for(int i = 30, j = 1 << 30;j;i--, j >>= 1){
        if(x & j){
            if(!b[y][i]){
                b[y][i] = x, pos[y][i] = z;
                break;
            }else{
                if(z > pos[y][i]) swap(x, b[y][i]), swap(z, pos[y][i]);
                x ^= b[y][i];
            }
        }
    }
}

inline int query(int l, int r){
    int ans = 0;
    for(int i = 30;~i;i--){
        //printf("%d %d %d--\n", i, b[r][i], pos[r][i]);
        if(pos[r][i] >= l && (ans ^ b[r][i]) > ans) ans ^= b[r][i];
    }
    return ans;
}

int main(){
    scanf("%d", &n);
    for(int i = 1;i <= n;i++){
        //for(int j = 0;j <= 30;j++) b[i][j] = b[i - 1][j], pos[i][j] = pos[i - 1][j];
        memcpy(b[i], b[i - 1], sizeof(b[i - 1])), memcpy(pos[i], pos[i - 1], sizeof(pos[i - 1]));
        scanf("%d", &x);
        insert(x, i);
    }
    scanf("%d", &q);
    while(q--){
        scanf("%d%d", &x, &y);
        printf("%d\n", query(x, y));
    }
}
```

```
}
```

CF461B

树上连通块，树形dp[]

```
#include <bits/stdc++.h>
#define maxn 100086
using namespace std;

const int p = 1e9 + 7;

vector<int> v[maxn];
int f[maxn][2];
int ans;

void dfs(int i){
    for(int j = 0;j < v[i].size();j++){
        int to = v[i][j];
        dfs(to);
        f[i][1] = (1ll * f[i][1] * (f[to][0] + f[to][1]) + 1ll * f[i][0] * f[to][1]) % p;
        f[i][0] = 1ll * f[i][0] * (f[to][0] + f[to][1]) % p;
    }
}

int n, x;

int main(){
    scanf("%d", &n);
    for(int i = 2;i <= n;i++) scanf("%d", &x), v[++x].push_back(i);
    for(int i = 1;i <= n;i++) scanf("%d", &x), f[i][x] = 1;
    dfs(1);
    printf("%d", f[1][1]);
}
```

CF300D

卷积dp[]

```
#include <bits/stdc++.h>
#define maxn 1086
#define maxm 105
```

```

using namespace std;

const int p = 7340033;

int t;
int n, K;
int dep;
int f[maxn / 10][maxn], g[maxn / 10][maxn];

int main(){
    for(int i = 0; i < maxn; i++) f[i][0] = g[i][0] = 1;
    for(int i = 1; i < maxn; i++){
        for(int j = 1; j < maxn; j++){
            for(int k = 0; k < j; k++){
                f[i][j] += 1ll * g[i - 1][k] * g[i - 1][j - 1 - k] % p;
                if(f[i][j] >= p) f[i][j] -= p;
            }
            for(int k = 0; k <= j; k++){
                g[i][j] += 1ll * f[i][k] * f[i][j - k] % p;
                if(g[i][j] >= p) g[i][j] -= p;
            }
        }
    }
    scanf("%d", &t);
    while(t--){
        scanf("%d%d", &n, &K), dep = 0;
        while((n & 1) && n >= 3) ++dep, n >>= 1;
        printf("%d\n", f[dep][K]);
    }
}

```

CF319C

斜率优化。

```

#include <bits/stdc++.h>
#define maxn 100086
using namespace std;

typedef long long ll;

int n;
ll a[maxn], b[maxn], f[maxn];
int q[maxn], l, r;

inline double k(int i, int j){
    return 1.0 * (f[i] - f[j]) / (b[j] - b[i]);
}

```

```
int main(){
    scanf("%d", &n);
    for(int i = 1;i <= n;i++) scanf("%lld", &a[i]);
    for(int i = 1;i <= n;i++) scanf("%lld", &b[i]);
    f[1] = 0, q[0] = 1;
    for(int i = 2;i <= n;i++){
        while(l < r && k(q[l], q[l + 1]) <= a[i]) ++l;
        f[i] = f[q[l]] + a[i] * b[q[l]];
        //printf("%d %d %lld--\n", i, q[l], f[i]);
        while(l < r && k(q[r], q[r - 1]) >= k(q[r], i)) --r;
        q[++r] = i;
    }
    printf("%lld", f[n]);
}
```

CF455D

数据结构，分块+deque[]

```
#include <bits/stdc++.h>
#define maxn 100086
#define maxm 320
using namespace std;

int f[maxm][maxn];
int n, sn;
int opt, l, r, k;
int m, x;
deque<int> q[maxm];
int lastans;

int main(){
    scanf("%d", &n), sn = (int)sqrt(n);
    for(int i = 1;i <= n;i++){
        scanf("%d", &x);
        int ii = (i - 1) / sn;
        q[ii].push_back(x), ++f[ii][x];
    }
    scanf("%d", &m);
    while(m--){
        scanf("%d", &opt);
        if(opt == 1){
            scanf("%d%d", &l, &r);
            l = (l + lastans - 1) % n + 1, r = (r + lastans - 1) % n + 1;
            if(l > r) swap(l, r);
            int ll = (l - 1) / sn, rr = (r - 1) / sn, li = (l - 1) % sn, ri
```

```

= (r - 1) % sn;
    //printf("%d %d %d %d--\n", ll, rr, li, ri);
    if(ll == rr){
        int x = q[ll][ri];
        q[ll].erase(q[ll].begin() + ri);
        q[ll].insert(q[ll].begin() + li, x);
    }else{
        int x = q[ll].back(); q[ll].pop_back(), --f[ll][x];
        for(int i = ll + 1; i < rr; i++){
            q[i].push_front(x), ++f[i][x];
            x = q[i].back(), q[i].pop_back(), --f[i][x];
        }
        q[rr].push_front(x), ++f[rr][x];
        x = q[rr][ri + 1], --f[rr][x], q[rr].erase(q[rr].begin() +
ri + 1); //debug: 已经pushfront了所以下标都要+1
        ++f[ll][x], q[ll].insert(q[ll].begin() + li, x);
    }
}else{
    scanf("%d%d%d", &l, &r, &k);
    l = (l + lastans - 1) % n + 1, r = (r + lastans - 1) % n + 1, k
= (k + lastans - 1) % n + 1;
    if(l > r) swap(l, r);
    int ll = (l - 1) / sn, rr = (r - 1) / sn, li = (l - 1) % sn, ri
= (r - 1) % sn;
    int ans = 0;
    if(ll == rr){
        for(int i = li; i <= ri; i++) ans += q[ll][i] == k;
    }else{
        for(int i = ll + 1; i < rr; i++) ans += f[i][k];
        //printf("%d %d %d--\n", ll, rr, li, ri);
        for(int i = li; i < sn; i++) ans += q[ll][i] == k;
        for(int i = 0; i <= ri; i++) ans += q[rr][i] == k;
    }
    printf("%d\n", lastans = ans);
}
}
}

```

CF383E

CF1045G

CF797D



CF979D



CF1093G



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