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/*
Segment Tree Lazy Propagation
update_tree: Replace numbers [i, j] with value
query_tree: Sum of numbers [i, j]
*/

LL arr[NN];
LL tree[NN*4], carry[NN*4];
bool visit[NN*4];

void build_tree(LL node, LL a, LL b)
{
    if(a > b) return;
    if(a == b)
    {
        tree[node] = arr[a];
        return;
    }
    LL left = node*2;
    LL right = left+1;
    LL mid = (a+b)/2;
    build_tree(left, a, mid);
    build_tree(right, mid+1, b);
    tree[node] = tree[left] + tree[right];
}

void update_node(LL node, LL a, LL b)
{
    tree[node] = (b-a+1)*carry[node];
    if(a != b)
    {
        LL left = node*2;
        LL right = left+1;
        carry[left] = carry[right] = carry[node];
        visit[left] = visit[right] = 1;
    }
    visit[node] = 0;
}

void update_tree(LL node, LL a, LL b, LL i, LL j, LL value)
{
    if(visit[node]) update_node(node, a, b);
    if(a > b || a > j || b < i) return;
    LL left = node*2;
    LL right = left+1;
    if(a >= i && b <= j)
    {
        tree[node] = (b-a+1)*value;
    }

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    if(a != b)
    {
        carry[left] = carry[right] = value;
        visit[left] = visit[right] = 1;
    }
    return;
}

LL mid = (a+b)/2;
update_tree(left, a, mid, i, j, value);
update_tree(right, mid+1, b, i, j, value);
tree[node] = tree[left] + tree[right];
}

LL query_tree(LL node, LL a, LL b, LL i, LL j)
{
    if(a > b || a > j || b < i) return 0;
    if(visit[node]) update_node(node, a, b);
    if(a >= i && b <= j) return tree[node];
    LL left = node*2;
    LL right = left+1;
    LL mid = (a+b)/2;
    LL q1 = query_tree(left, a, mid, i, j);
    LL q2 = query_tree(right, mid+1, b, i, j);
    return q1+q2;
}

int main()
{
    int n = 5;
    for(int i = 1; i <= n; i++) arr[i] = i;
    memset(visit, 0);
    build_tree(1, 1, n);
    update_tree(1, 1, n, 1, 3, 5);
    cout << query_tree(1, 1, n, 2, 4) << endl;
}

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