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1  #include<bits/stdc++.h>
2  #define ll long long
3  #define pll pair<ll,ll>
4  #define MAXP 1000000
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6  using namespace std;
7  pair<ll,ll>tree[4*MAXP];
8  vector<int>add[MAXN+5], del[MAXN+5];
9  struct Data{
10     int l,r,c,p;
11 }tariff[200005];
12 bool cmp(Data x, Data y){
13     return x.p<y.p;
14 }
15 void update(int node,int b,int e,int p,int c,int f){
16     if(b==p&&e==p){
17         tree[node].first += c*f;
18         tree[node].second += (1LL)*b*c*f;
19         return;
20     }
21     int lson = (node*2), rson = lson+1, m=(b+e)/2;
22     if(p<=m) update(lson, b, m, p, c, f);
23     else update(rson, m+1, e, p, c, f);
24     tree[node].first = tree[lson].first + tree[rson].first;
25     tree[node].second = tree[lson].second + tree[rson].second;
26 }
27 ll query(int node,int b,int e,int k){
28     if(tree[node].first<=k) return tree[node].second;
29     if(k==0) return 0;
30     if(b==e) return (1LL)*b*k;
31
32     int lson = (node*2), rson = lson+1, m=(b+e)/2;
33     if(tree[lson].first>=k) return query(lson, b, m, k);
34     else return tree[lson].second + query(rson, m+1, e, k-tree[lson].first);
35 }
36 int main(){
37     ios::sync_with_stdio(0); cin.tie(0); cout.tie(0);
38     int n,k,m; cin>>n>>k>>m;
39     for(int i=0; i<m; i++){
40         int l,r,c,p; cin>>l>>r>>c>>p;
41         tariff[i].l = l, tariff[i].r = r;
42         tariff[i].c = c, tariff[i].p = p;
43     }
44     //sort(tariff, tariff+m, cmp);
45     for(int i=0; i<m; i++){
46         add[tariff[i].l].push_back(i);
47         del[tariff[i].r+1].push_back(i);
48     }
49     memset(tree,0,sizeof(tree));
50
51     ll ans = 0;
52     for(int i=1; i<=n; i++){
53         for(int j=0; j<(int)add[i].size(); j++){
54             int p = tariff[add[i][j]].p;
55             int c = tariff[add[i][j]].c;
56             update(1, 1, MAXP, p, c, +1);
57         }
58         for(int j=0; j<(int)del[i].size(); j++){
59             int p = tariff[del[i][j]].p;
60             int c = tariff[del[i][j]].c;
61             update(1, 1, MAXP, p, c, -1);
62         }
63         ll ret = query(1,1,MAXP,k);
64         ans += ret;
65     }
66     cout << ans << endl;
67     return 0;
68 }

```