

army

```

1  #include <bits/stdc++.h>
2  using namespace std;
3  const int N = 1e3 + 10;
4  list <int> a[N];
5  int n,q;
6  signed main() {
7      ios::sync_with_stdio(0);
8      cin.tie(0);cout.tie(0);
9      cin >> n >> q;
10     for (int i = 1;i <= n;++i) {
11         int cnt;cin >> cnt;
12         while (cnt -- )
13             {
14                 int x;cin >> x;
15                 a[i].push_back(x);
16             }
17     }
18     while (q--) {
19         char opt;cin >> opt;
20         int x,y;
21         if (opt == 'U') {
22             cin >> x >> y;
23             for (auto p : a[y]) a[x].push_back(p);
24             a[y].clear();
25         }
26         if (opt == 'I') {
27             cin >> x >> y;
28             a[x].push_front(y);
29         }
30         if (opt == 'D') {
31             cin >> x >> y;
32             a[x].remove(y);
33         }
34         if (opt == 'Q') {
35             cin >> x;
36             if (a[x].empty()) cout << -1;
37             for (auto p : a[x]) cout << p << ' ';
38             cout << "\n";
39         }
40     }
41 }

```



```


1  /*
2  Am I allowed to cry?
3  */
4  #include <bits/stdc++.h>
5  using namespace std;
6  #define ll long long
7  #define FO(x)
8  {freopen(#x".in", "r", stdin);freopen(#x".out", "w", stdout);}
9
10 #define pii pair<int,int>
11 #define pll pair<ll,ll>
12 #define mp make_pair
13
14 const int N = 1e3 + 10;
15 const int dx[4] = {0,0,1,-1};
16 const int dy[4] = {1,-1,0,0};
17 char c[N][N];
18 int n ,m,dis[N][N];
19 signed main() {
20     ios::sync_with_stdio(false);
21     cin.tie(0);cout.tie(0);
22     cin >> n >> m;
23     pii s = mp(0,0),t = mp(0,0);
24     for (int i = 1; i <= n; i++) {
25         for (int j = 1; j <= m; j++) {
26             cin >> c[i][j];
27             if (c[i][j] == 'r') s = mp(i,j);
28             if (c[i][j] == 'a') t = mp(i,j);
29         }
30     }
31     queue <pii> q;
32     q.push(s);
33     memset(dis,0x3f,sizeof(dis));
34     dis[s.first][s.second] = 0;
35     while (!q.empty()) {
36         pii p = q.front();q.pop();
37         int x = p.first,y = p.second;
38         for (int i = 0;i < 4;++i) {
39             int nx = x + dx[i],ny = y + dy[i];
40             if (nx < 1 || nx > n || ny < 1 || ny > m || c[nx][ny] ==
41 '#') continue;
42             int now = 0;
43             if (c[nx][ny] == 'x') now = 2;
44             else now = 1;
45             if (dis[nx][ny] > dis[x][y] + now) {
46                 dis[nx][ny] = dis[x][y] + now;
47                 q.push(mp(nx,ny));
48             }
49         }
50     }
51 }

```

```

47     if (dis[t.first][t.second] == 0x3f3f3f3f) cout << -1 << endl;
48     else cout << dis[t.first][t.second] << endl;
49     return 0;
50 }

```




trade

```

1  /*
2  Am I allowed to cry?
3  */
4  #include <bits/stdc++.h>
5  using namespace std;
6  #define ll long long
7  #define FO(x)
8  {freopen(#x".in", "r", stdin);freopen(#x".out", "w", stdout);}
9  #define pii pair<int,int>
10 #define pll pair<ll,ll>
11 #define mp make_pair
12
13 signed main() {
14     ios::sync_with_stdio(false);
15     cin.tie(0);cout.tie(0);
16     int n;
17     cin >> n;
18     queue <int> q;
19     vector <int> ans1,ans2;
20
21     for (int i = 1; i <= n; i++) {
22         q.push(i);
23     }
24     while (q.size() > 1) {
25         ans1.push_back(q.front());q.pop();
26         q.push(q.front());q.pop();
27     }
28     for (auto x : ans1) cout << x << " ";
29     if (q.size()) cout << "\n" << q.front() << "\n";
30     return 0;
31 }

```

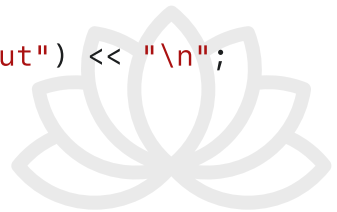


train

```

1  #include <bits/stdc++.h>
2  using namespace std;
3  const int N = 1e3 + 10;
4  int a[N],b[N];
5  bool ins[N];
6  int n,q;
7  signed main() {
8      ios::sync_with_stdio(0);
9      cin.tie(0);cout.tie(0);
10     cin >> n;
11     for (int i = 1;i <= n;++i) {
12         char c;cin >> c;
13         a[i] = c - '0';
14     }
15     for (int i = 1;i <= n;++i) {
16         char c;cin >> c;
17         b[i] = c - '0';
18     }
19     vector<int> ans;
20     int pos1 = 1;
21     ans.push_back(1);
22     stack<int>st;st.push(a[1]);
23     int pos2 = 1;
24     while (pos1 <= n && pos2 <= n) {
25         if (!st.empty() && st.top() == b[pos2]) {
26             st.pop();
27             ++pos2;
28             ans.push_back(0);
29         } else {
30             st.push(a[++pos1]);
31             ans.push_back(1);
32         }
33     }
34     // cerr << pos1 << " " << pos2 << "\n";
35     if (pos2 == n + 1) {
36         cout << "Yes\n";
37         for (auto x : ans) cout << (x ? "in" : "out") << "\n";
38     } else {
39         cout << "No\n";
40     }
41 }

```



value

```

1  /*
2  Am I allowed to cry?
3  */
4  #include <bits/stdc++.h>
5  using namespace std;
6  #define ll long long
7  #define FO(x)
8  {freopen(#x".in", "r", stdin);freopen(#x".out", "w", stdout);}
9  #define pii pair<int,int>
10 #define pll pair<ll,ll>
11 #define mp make_pair
12 const int N = 1e5 + 10;
13 ll a[N],st[N],top,n,L[N],R[N],sum[N];
14 signed main() {
15     ios::sync_with_stdio(false);
16     cin.tie(0);cout.tie(0);
17     cin >> n;
18     for (int i = 1;i <= n;++i) cin >> a[i];
19     for (int i = 1;i <= n;++i) {
20         while (top && a[st[top]] >= a[i]) --top;
21         L[i] = st[top] + 1;
22         st[++top] = i;
23     }
24     top = 0;
25     st[top] = n + 1;
26     for (int i = n;i >= 1;--i) {
27         while (top && a[st[top]] >= a[i]) --top;
28         R[i] = st[top] - 1;
29         st[++top] = i;
30     }
31     for (int i = 1;i <= n;++i) sum[i] = sum[i - 1] + a[i];
32     ll ans = 0;
33     for (int i = 1;i <= n;++i) {
34         cerr << L[i] << ' ' << R[i] << '\n';
35         ll val = (sum[R[i]] - sum[L[i] - 1]) * a[i];
36         ans = max(ans,val);
37     }
38     cout << ans << '\n';
39     return 0;
40 }

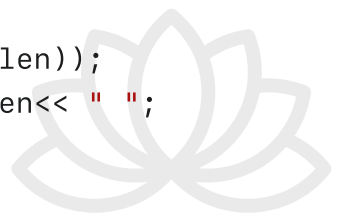
```



```

1  /*
2  Am I allowed to cry?
3  */
4  #include <bits/stdc++.h>
5  using namespace std;
6  #define ll long long
7  #define FO(x)
8  {freopen(#x".in", "r", stdin);freopen(#x".out", "w", stdout);}
9  #define pii pair<int,int>
10 #define pll pair<ll,ll>
11 #define mp make_pair
12 #define int ll
13 const int N = 2e5+5;
14 int n,a[N],q,s[N],m;
15 set <int> S;
16 signed main() {
17     ios::sync_with_stdio(false);
18     cin.tie(0);cout.tie(0);
19     cin >> m;
20     vector <int> a,v;
21     for (int i = 1;i <= m;++i) {
22         int x;cin >> x;
23         if (!S.count(x)) a.push_back(x);
24         S.insert(x);
25     }
26     sort(a.begin(),a.end());
27     for (int i = 0;i + 1 < a.size();++i) {
28         v.push_back(a[i+1] - a[i]);
29     }
30     sort(v.begin(),v.end());
31     vector <int> s(v.size() + 1,0);
32     for (int i = 0;i < v.size();++i) {
33         s[i+1] = s[i] + v[i];
34         // cerr << s[i+1] << " ";
35     }
36     cin >> q;
37     while (q--) {
38         int l,r;cin >> l >> r;
39         int len = r - l + 1;
40         int pos =
distance(v.begin(),lower_bound(v.begin(),v.end(),len));
41         cout << s[pos] + (v.size() - pos + 1) * len<< " ";
42     }
43     return 0;
44 }

```



```

1  /*
2  Am I allowed to cry?
3  */
4  #include <bits/stdc++.h>
5  using namespace std;
6  #define ll long long
7  #define FO(x)
8  {freopen(#x".in", "r", stdin);freopen(#x".out", "w", stdout);}
9  #define pii pair<int,int>
10 #define pll pair<ll,ll>
11 #define mp make_pair
12 const int N = 2e5+5;
13 int a[N],b[N],n,m;
14 signed main() {
15     ios::sync_with_stdio(false);
16     cin.tie(0);cout.tie(0);
17     cin >> n >> m;
18     for (int i = 1;i <= n;++i) cin >> a[i];
19     for (int i = 1;i <= m;++i) cin >> b[i];
20     vector <int> vec;
21     for (int i = 1;i <= n;++i) {
22         if (a[i]) vec.push_back(a[i]);
23     }
24     sort(vec.begin(),vec.end());
25     int pos = 0;
26     for (int i = 1;i <= n;++i) {
27         if (a[i]) a[i] = vec[pos++];
28     }
29     sort(b+1,b+m+1);
30     int p = 1;
31     for (int i = 1;i <= n;++i) {
32         if (!a[i]) a[i] = b[p++];
33     }
34     bool flag = 0;
35     for (int i = 1;i < n;++i) {
36         if (a[i] > a[i+1]) flag = 1;
37     }
38     if (flag) {
39         cout << -1 << "\n";
40         return 0;
41     }
42     for (int i = 1;i <= n;++i) cout << a[i] << " ";
43     return 0;
44 }

```




```

1  /*
2  Am I allowed to cry?
3  */
4  #include <bits/stdc++.h>
5  using namespace std;
6  #define ll long long
7  #define FO(x)
8  {freopen(#x".in", "r", stdin);freopen(#x".out", "w", stdout);}
9  #define pii pair<int,int>
10 #define pll pair<ll,ll>
11 #define mp make_pair
12 const int N = 1e5 + 10;
13 vector<int> g;
14 int n;
15 void solve(const vector <int> &g) {
16     vector <int> L,R;
17     int root = g.back();
18     cout << root;
19     int p = 0;
20     for (int i = 0;i + 1< g.size();++i) {
21         if (g[i] < root) L.push_back(g[i]);
22         else R.push_back(g[i]);
23     }
24     if (L.size()) {
25         cout << "<";
26         solve(L);
27         cout << ">";
28     }
29     if (R.size()) {
30         cout << "<";
31         solve(R);
32         cout << ">";
33     }
34 }
35 signed main() {
36     ios::sync_with_stdio(false);
37     cin.tie(0);cout.tie(0);
38     cin >> n;
39     for (int i = 1;i <= n;++i) {
40         int x;cin >> x;g.push_back(x);
41     }
42     solve(g);
43     return 0;
44 }

```



```

1  /*
2  Am I allowed to cry?
3  */
4  #include <bits/stdc++.h>
5  using namespace std;
6  #define ll long long
7  #define FO(x)
8  {freopen(#x".in", "r", stdin);freopen(#x".out", "w", stdout);}
9  #define pii pair<int,int>
10 #define pll pair<ll,ll>
11 #define mp make_pair
12 const int N = 2e5+5;
13 int dis[N],n,m;
14 vector <pii> G[N];
15 bool vis[N];
16 struct node {
17     int pos,dis;
18     friend bool operator < (const node &a,const node &b) {
19         return a.dis > b.dis;
20     }
21 };
22 bool Dijkstra(int s,int t) {
23     memset(dis,0x3f,sizeof(dis));
24     memset(vis,0,sizeof(vis));
25     dis[s] = 0;
26     priority_queue<node> q;
27     q.push({s,0});
28     while (!q.empty()) {
29         node p = q.top();q.pop();
30         int u = p.pos;
31         if (vis[u]) continue;
32         vis[u] = 1;
33         for (auto e : G[u]) {
34             int v = e.first,w = e.second;
35             if (dis[v] > dis[u] + w) {
36                 dis[v] = dis[u] + w;
37                 q.push({v,dis[v]});
38             }
39         }
40     }
41     return dis[t] != 0x3f3f3f3f;
42 }
43 int f[N];int s,t;
44 int dfs(int x) {
45     if (x == t) return 1;
46     cerr << "now :" << x << "\n";
47     if (f[x] != -1) return f[x];
48     int ans = 0;

```

```

48     for (auto p : G[x]) {
49         cerr << "to :" << p.first << " dis:" << dis[p.first] <<
"\n";
50         int v = p.first, w = p.second;
51         if (dis[v] < dis[x]) {
52             ans += dfs(v);
53         }
54     }
55
56     return f[x] = ans;
57 }
58 signed main() {
59     ios::sync_with_stdio(false);
60     cin.tie(0); cout.tie(0);
61     cin >> n >> m;
62     for (int i = 1; i <= m; i++) {
63         int u, v, w; cin >> u >> v >> w;
64         G[u].push_back({v, w});
65         G[v].push_back({u, w});
66     }
67     cin >> s >> t;
68     if (Dijkstra(t, s) == 0) {
69         cout << -1 << endl;
70     } else {
71         memset(f, -1, sizeof(f));
72         for (int i = 1; i <= n; i++) cerr << "dis[" << i << "]= " <<
dis[i] << "\n";
73         cout << dfs(s) << endl;
74     }
75     return 0;
76 }

```



最小生成树


```

1  /*
2  Am I allowed to cry?
3  */
4  #include <bits/stdc++.h>
5  using namespace std;
6  #define ll long long
7  #define FO(x)
8  {freopen(#x".in", "r", stdin);freopen(#x".out", "w", stdout);}
9  #define pii pair<int,int>
10 #define pll pair<ll,ll>
11 #define mp make_pair
12 const int N = 1e5 + 10;
13 int n,vis[N];
14 double dis (pll a,pll b) {
15     return sqrt((a.first - b.first) * (a.first - b.first) +
16     (a.second - b.second) * (a.second - b.second));
17 }
18 double minn[N];
19 pll p[N];
20 signed main() {
21     ios::sync_with_stdio(false);
22     cin.tie(0);cout.tie(0);
23     cin >> n;
24     for (int i = 1;i <= n;++i) {
25         cin >> p[i].first >> p[i].second;
26         minn[i] = 1e18;
27     }
28     minn[1] = 0;minn[0] = 1e18;
29     double ans = 0;
30     for (int i = 1;i <= n;++i) {
31         int idx = 0;
32         for (int j = 1;j <= n;++j) {
33             if (!vis[j] && minn[j] < minn[idx]) idx = j;
34         }
35         ans += minn[idx];
36         vis[idx] = 1;
37         for (int j = 1;j <= n;++j) {
38             if (!vis[j]) {
39                 double d = dis(p[idx],p[j]);
40                 if (d < minn[j]) minn[j] = d;
41             }
42         }
43     }
44     cout << fixed << setprecision(2) << ans << endl;
45     return 0;
46 }

```



