

Олимпиада «Ломоносов» по информатике
2025-2026 учебный год. Заключительный этап
Работа участника с id заявки 1552687, логином inf26f_339

Сводный итог по всем задачам в проверяющей системе

RunID	Time	Username	Prob	Lang	Result	Tests	Score
182	2:50:47	inf26f_339	6	g++	Partial solution	8	35
124	2:04:58	inf26f_339	3	g++	OK	23	100
105	1:49:40	inf26f_339	5	g++	OK	103	100
86	1:32:34	inf26f_339	4	g++	OK	103	100
17	0:43:31	inf26f_339	2	g++	OK	53	100
9	0:27:42	inf26f_339	1	g++	Partial solution	18	75
510 (пятьсот десять) технических баллов							
85 (восемьдесят пять) итоговых баллов							



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Посылка по задаче 1

```
[1] #include <iostream>
[2] #include <iomanip>
[3] #include <bits/stdc++.h>
[4] #include <ext/pb_ds/assoc_container.hpp>
[5] #include <ext/pb_ds/tree_policy.hpp>
[6] using namespace std;
[7] //
[8] using oset = __gnu_pbds::tree<int, __gnu_pbds::null_type, less<int>, __gnu_pbds::rb_tree_tag, __gnu_pbds::t
[9] bool cmp(string a, string b){
[10]     if(a.size()<b.size()){
[11]         return true;
[12]     }
[13]     if(a.size()>b.size()){
[14]         return false;
[15]     }
[16]     for(int i = 0; i< a.size(); i++){
[17]         if(a[i]<b[i]){
[18]             return true;
[19]         }
[20]     }
[21]     return false;
[22] }
[23] int main(){
[24]     ios::sync_with_stdio(false);
[25]     cin.tie(nullptr);
[26]     vector<string>v;
[27]     int k;
[28]     cin>>k;
[29]     string s;
[30]     int ans;
[31]     int counter;
[32]     string curr;
[33]     for(int i = 0; i< k; i++){
[34]         cin>>s;
[35]         ans = 0;
[36]         counter = 0;
[37]         curr.clear();
[38]         for(auto x:s){
[39]             if(x=='.'){
[40]                 ans+=counter;
[41]                 curr+=(char)('a'+ans);
[42]                 ans=0;
[43]                 counter=0;
[44]             }
[45]             if(x=='i'){
[46]                 counter++;
[47]             }
[48]             if(x=='v'){
[49]                 ans+=5;
[50]                 ans-=counter;
[51]                 counter=0;
[52]             }
[53]             if(x=='x'){
[54]                 ans+=10;
[55]                 ans-=counter;
[56]                 counter=0;
[57]             }
[58]         }
[59]         ans+=counter;
[60]         curr+=(char)('a'+ans);
[61]         //cout<<ans<<"\n";
[62]         v.push_back(curr);
[63]     }
[64]     sort(v.begin(), v.end(), cmp);
[65]     cout<<v[v.size()-1]<<"\n"<<v[0];
}
```

Посылка по задаче 2

```
[1] #include <iostream>
[2] #include <iomanip>
[3] #include <bits/stdc++.h>
[4] #include <ext/pb_ds/assoc_container.hpp>
[5] #include <ext/pb_ds/tree_policy.hpp>
[6] using namespace std;
[7] //using oset = __gnu_pbds::tree<int, __gnu_pbds::null_type, less<int>, __gnu_pbds::rb_tree_tag, __gnu_pbds::tree_order_statistics_node_update>;
[8]
[9] int main(){
[10]     ios::sync_with_stdio(false);
[11]     cin.tie(nullptr);
[12]     const int sz = (1e6)+1;
[13]     vector<bool>v(sz);
[14]     long long curr;
[15]     for(long long i = 2; i<(1e4); i++){
[16]         curr = 1+i+(i*i);
[17]         while(curr<sz){
[18]             v[curr]=true;
[19]             curr = 1ll+(curr*i);
[20]         }
[21]     }
[22]     vector<long long>primes, ind(sz, -1);
[23]     for(long long y = 2; y<sz; y++){
[24]         if(ind[y]==-1){
[25]             ind[y]=primes.size();
[26]             primes.push_back(y);
[27]         }
[28]         for(int i = 0; i<=ind[y] && ((y*primes[i]) < sz); i++){
[29]             ind[y*primes[i]] = i;
[30]         }
[31]     }
[32]     int n;
[33]     cin>>n;
[34]     int counter = 0;
[35]     int a;
[36]     for(int i = 0; i< n; i++){
[37]         cin>>a;
[38]         if((primes[ind[a]]==a)&&v[a]){
[39]             counter++;
[40]             v[a]=false;
[41]         }
[42]     }
[43]     cout<<counter;
[44] }
```

Посылка по задаче 3

```
[1] #include <iostream>
[2] #include <iomanip>
[3] #include <bits/stdc++.h>
[4] #include <ext/pb_ds/assoc_container.hpp>
[5] #include <ext/pb_ds/tree_policy.hpp>
[6] using namespace std;
[7] //
[8] using oset = __gnu_pbds::tree<int, __gnu_pbds::null_type, less<int>, __gnu_pbds::rb_tree_tag, __gnu_pb
[9] vector<vector<int>>>v;
[10] int n;
[11] void f(int i, int j, int a, int l){
[12]     //cout<<i<<" "<<j<<" "<<a<<"\n";
[13]     bool k = true;
[14]     while(k){
[15]         k = false;
[16]         v[i][j]=a;
[17]         if(l==0){
[18]             if(j<(n-1) && v[i][j+1]==-1){
[19]                 j++;
[20]                 a++;
[21]                 k = true;
[22]                 continue;
[23]             }
[24]             l = (l+1)%4;
[25]         }
[26]         if(l==1){
[27]             if(i<(n-1) && v[i+1][j]==-1){
[28]                 i++;
[29]                 a++;
[30]                 k = true;
[31]                 continue;
[32]             }
[33]             l = (l+1)%4;
[34]         }
[35]         if(l==2){
[36]             if(j>0 && v[i][j-1]==-1){
[37]                 j--;
[38]                 a++;
[39]                 k = true;
[40]                 continue;
[41]             }
[42]             l = (l+1)%4;
[43]         }
[44]         if(l==3){
[45]             if(i>0 && v[i-1][j]==-1){
[46]                 i--;
[47]                 a++;
[48]                 k = true;
[49]                 continue;
[50]             }
[51]             l = (l+1)%4;
[52]         }
[53]         if(l==0){
[54]             if(j<(n-1) && v[i][j+1]==-1){
[55]                 j++;
[56]                 a++;
[57]                 k = true;
[58]                 continue;
[59]             }
[60]             l = (l+1)%4;
[61]         }
[62]         if(l==1){
[63]             if(i<(n-1) && v[i+1][j]==-1){
[64]                 i++;
[65]                 a++;
[66]                 k = true;
[67]                 continue;
[68]             }
[69]             l = (l+1)%4;
[70]         }
    }
```

```

[71]         if(l==2){
[72]             if(j>0 && v[i][j-1]==-1){
[73]                 j--;
[74]                 a++;
[75]                 k = true;
[76]                 continue;
[77]             }
[78]             l = (l+1)%4;
[79]         }
[80]         if(l==3){
[81]             if(i>0 && v[i-1][j]==-1){
[82]                 i--;
[83]                 a++;
[84]                 k = true;
[85]                 continue;
[86]             }
[87]             l = (l+1)%4;
[88]         }
[89]     }
[90] }
[91] int main(){
[92]     ios::sync_with_stdio(false);
[93]     cin.tie(nullptr);
[94]     cin>>n;
[95]     v.resize(n, vector<int>(n, -1));
[96]     f(0, 0, 0, 0);
[97]     int a, b;
[98]     cin>>a>>b;
[99]     cout<<v[b-1][a-1];
    }

```

Посылка по задаче 4

```
[1] #include <iostream>
[2] #include <iomanip>
[3] #include <bits/stdc++.h>
[4] #include <ext/pb_ds/assoc_container.hpp>
[5] #include <ext/pb_ds/tree_policy.hpp>
[6] using namespace std;
[7] //using oset = __gnu_pbds::tree<int, __gnu_pbds::null_type, less<int>, __gnu_pbds::rb_tree_tag, __gnu_pbds::tree_order
[8]
[9] int main(){
[10]     ios::sync_with_stdio(false);
[11]     cin.tie(nullptr);
[12]     int n;
[13]     cin>>n;
[14]     vector<int>v(n);
[15]     for(int i = 0; i < n; i++){
[16]         cin>>v[i];
[17]     }
[18]     vector<int>a(n, 1);
[19]     for(int i = 0; i < n; i++){
[20]         for(int j = 0; j < i; j++){
[21]             if(v[i]>=v[j]){
[22]                 a[i]=max(a[i], a[j]+1);
[23]             }
[24]         }
[25]     }
[26]     int ans = 0;
[27]     for(int i = 0; i < n; i++){
[28]         ans = max(ans, a[i]);
[29]     }
[30]     cout<<n-ans;
[31] }
```

Посылка по задаче 5

```
[1] #include <iostream>
[2] #include <iomanip>
[3] #include <bits/stdc++.h>
[4] #include <ext/pb_ds/assoc_container.hpp>
[5] #include <ext/pb_ds/tree_policy.hpp>
[6] using namespace std;
[7] //using oset = __gnu_pbds::tree<int, __gnu_pbds::null_type, less<int>, __gnu_pbds::rb_tree_tag, __gnu_pbds::tree_order
[8] bool cmp(vector<int>a, vector<int>b){
[9]     if(a[0]>b[0]){
[10]         return true;
[11]     }
[12]     if(a[0]<b[0]){
[13]         return false;
[14]     }
[15]     if(a[1]>b[1]){
[16]         return true;
[17]     }
[18]     if(a[1]<b[1]){
[19]         return false;
[20]     }
[21]     return a[2]<b[2];
[22] }
[23] int main(){
[24]     ios::sync_with_stdio(false);
[25]     cin.tie(nullptr);
[26]     int n;
[27]     cin>>n;
[28]     vector<vector<int>>>v(n);
[29]     int x, y, h;
[30]     for(int i = 0; i< n; i++){
[31]         cin>>x>>y>>h;
[32]         v[i] = {x, y, h};
[33]     }
[34]     vector<int>s = v[0];
[35]     sort(v.begin(), v.end(), cmp);
[36]     vector<int>a(n, 1);
[37]     for(int i = 0; i< n; i++){
[38]         for(int j = 0; j< i; j++){
[39]             if((v[j][0]>v[i][0])&&(v[j][1]>v[i][1])&&(v[j][2]<v[i][2])){
[40]                 a[i]=max(a[i], a[j]+1);
[41]             }
[42]         }
[43]     }
[44]     for(int i = 0; i< n; i++){
[45]         if(v[i]==s){
[46]             cout<<a[i];
[47]             return 0;
[48]         }
[49]     }
[50] }
```

Посылка по задаче 6

```
[1] #include <iostream>
[2] #include <iomanip>
[3] #include <bits/stdc++.h>
[4] #include <ext/pb_ds/assoc_container.hpp>
[5] #include <ext/pb_ds/tree_policy.hpp>
[6] using namespace std;
[7]
[8] int main(){
[9]     ios::sync_with_stdio(false);
[10]    cin.tie(nullptr);
[11]    int n1, n2, n3, n4, n, m;
[12]    cin>>n1>>n2>>n3>>n4>>n>>m;
[13]    vector<string>v(n);
[14]    for(int i = 0; i < n; i++){
[15]        cin>>v[i];
[16]    }
[17]    int ccc = 0;
[18]    for(int i = 0; i < n; i++){
[19]        for(int j = 0; j < m; j++){
[20]            if(v[i][j]=='#'){
[21]                ccc++;
[22]            }
[23]        }
[24]    }
[25]    if(ccc>20){
[26]        cout<<0;
[27]        return 0;
[28]    }
[29]    map<vector<string>, long long>counter1, counter2;
[30]    counter1[v]=1;
[31]    for(int k = 0; k<n1; k++){
[32]        counter2.clear();
[33]        for(auto [x, y]:counter1){
[34]            v = x;
[35]            for(int i = 0; i < n; i++){
[36]                for(int j = 0; j < m; j++){
[37]                    if(x[i][j]=='#'){
[38]                        v[i][j]='.';
[39]                        counter2[v]+=y;
[40]                        v[i][j]='#';
[41]                    }
[42]                }
[43]            }
[44]        }
[45]        for(auto [x, y]:counter2){
[46]            counter1[x]+=y;
[47]        }
[48]    }
[49]    for(int k = 0; k<n2; k++){
[50]        counter2.clear();
[51]        for(auto [x, y]:counter1){
[52]            v = x;
[53]            for(int i = 0; i < (n-1); i++){
[54]                for(int j = 0; j < m; j++){
[55]                    if(x[i][j]=='#' && x[i+1][j]=='#'){
[56]                        v[i][j]='.';
[57]                        v[i+1][j]='.';
[58]                        counter2[v]+=y;
[59]                        v[i][j]='#';
[60]                        v[i+1][j]='#';
[61]                    }
[62]                }
[63]            }
[64]        }
[65]        for(auto [x, y]:counter1){
[66]            v = x;
[67]            for(int i = 0; i < (n); i++){
[68]                for(int j = 0; j < (m-1); j++){
[69]                    if(x[i][j]=='#' && x[i][j+1]=='#'){
[70]                        v[i][j]='.';
[71]                        v[i][j+1]='.';
[72]                        counter2[v]+=y;
[73]                        v[i][j]='#';
[74]                        v[i][j+1]='#';
[75]                    }

```

```

[76]         }
[77]     }
[78] }
[79] for(auto [x, y]:counter2){
[80]     counter1[x]+=y;
[81] }
[82] }
[83] for(int k = 0; k<n3; k++){
[84]     counter2.clear();
[85]     for(auto [x, y]:counter1){
[86]         v = x;
[87]         for(int i = 0; i < (n-2); i++){
[88]             for(int j = 0; j < m; j++){
[89]                 if(x[i][j]!='#' && x[i+1][j]!='#' && x[i+2][j]!='#'){
[90]                     v[i][j]='.';
[91]                     v[i+1][j]='.';
[92]                     v[i+2][j]='.';
[93]                     counter2[v]+=y;
[94]                     v[i][j]='#';
[95]                     v[i+1][j]='#';
[96]                     v[i+2][j]='#';
[97]                 }
[98]             }
[99]         }
[100]     }
[101]     for(auto [x, y]:counter1){
[102]         v = x;
[103]         for(int i = 0; i < (n); i++){
[104]             for(int j = 0; j < (m-2); j++){
[105]                 if(x[i][j]!='#' && x[i][j+1]!='#' && x[i][j+2]!='#'){
[106]                     v[i][j]='.';
[107]                     v[i][j+1]='.';
[108]                     v[i][j+2]='.';
[109]                     counter2[v]+=y;
[110]                     v[i][j]='#';
[111]                     v[i][j+1]='#';
[112]                     v[i][j+2]='#';
[113]                 }
[114]             }
[115]         }
[116]     }
[117]     for(auto [x, y]:counter2){
[118]         counter1[x]+=y;
[119]     }
[120] }
[121] for(int k = 0; k<n4; k++){
[122]     counter2.clear();
[123]     for(auto [x, y]:counter1){
[124]         v = x;
[125]         for(int i = 0; i < (n-3); i++){
[126]             for(int j = 0; j < m; j++){
[127]                 if(x[i][j]!='#' && x[i+1][j]!='#' && x[i+2][j]!='#' && x[i+3][j]!='#'){
[128]                     v[i][j]='.';
[129]                     v[i+1][j]='.';
[130]                     v[i+2][j]='.';
[131]                     v[i+3][j]='.';
[132]                     counter2[v]+=y;
[133]                     v[i][j]='#';
[134]                     v[i+1][j]='#';
[135]                     v[i+2][j]='#';
[136]                     v[i+3][j]='#';
[137]                 }
[138]             }
[139]         }
[140]     }
[141]     for(auto [x, y]:counter1){
[142]         v = x;
[143]         for(int i = 0; i < (n); i++){
[144]             for(int j = 0; j < (m-3); j++){
[145]                 if(x[i][j]!='#' && x[i][j+1]!='#' && x[i][j+2]!='#' && x[i][j+3]!='#'){
[146]                     v[i][j]='.';
[147]                     v[i][j+1]='.';
[148]                     v[i][j+2]='.';
[149]                     v[i][j+3]='.';
[150]                     counter2[v]+=y;

```

```
[151]             v[i][j]='#';
[152]             v[i][j+1]='#';
[153]             v[i][j+2]='#';
[154]             v[i][j+3]='#';
[155]         }
[156]     }
[157] }
[158] }
[159]     for(auto [x, y]:counter2){
[160]         counter1[x]+=y;
[161]     }
[162] }
[163] for(int i = 0; i < n; i++){
[164]     for(int j = 0; j < m; j++){
[165]         v[i][j]='.';
[166]     }
[167] }
[168] cout<<counter1[v];
[169] }
```