

Рег.Номер: 10824

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Баллы: 63

Вариант№: 1

Задание1 (8/15 баллов)

```
#include <iostream>
#include <vector>
#include <string>
#include <cmath>
#define pb push_back
#define mp make_pair
#define ll long long
using namespace std;

bool pal(string s){
    vector <int> a(1000, 0);
    int counter = 0;
    for (int i = 0; i < s.size(); ++i){
        a[s[i] + 300]++;
    }
    for (int i = 0; i < a.size(); ++i){
        if (a[i] % 2 == 1){
            ++counter;
        }
        if (counter > 1){
            return false;
        }
    }
}
```

```

        return true;
    }

int main()
{
    string s, temp, ans = "";
    int k = 0;
    getline(cin, s);
    for (int i = 0; i < s.size(); ++i){
        if (s[i] == ' '){
            if (!temp.empty()){
                if (!pal(temp)){
                    ans += temp;
                }
            }
            temp = "";
            ans += " ";
        }
        else if (i == s.size() - 1){
            temp += s[i];
            if (!temp.empty()){
                if (!pal(temp)){
                    ans += temp;
                }
            }
        }
        else{
            temp += s[i];
        }
    }
}

```

```
    cout << ans;

    return 0;
}
```

Задание2 (15/15 баллов)

```
#include <iostream>
#include <vector>
#include <string>
#include <cmath>
#define pb push_back
#define mp make_pair
#define ll long long
using namespace std;

bool pal(string s){
    vector <int> a(1000, 0);
    int counter = 0;
    for (int i = 0; i < s.size(); ++i){
        a[s[i]]++;
    }
    for (int i = 0; i < a.size(); ++i){
        if (a[i] % 2 == 1){
            ++counter;
        }
        if (counter > 1){
            return false;
        }
    }
}
```

```

    }
    return true;
}

int main()
{
    char a[256];
    string s, temp, ans = "";
    vector<int> fib;
    vector<int> pr;
    fib.pb(1);
    fib.pb(1);
    for (int i = 2; i < 15; ++i){
        fib.pb(fib[i - 1] + fib[i - 2]);
        bool flag = true;
        for (int j = 2; j <= sqrt(fib[i]); ++j){
            if (fib[i] % j == 0){
                flag = false;
            }
        }
        if (flag){
            pr.pb(fib[i]);
        }
    }
    getline(cin, s);
    for (int i = 0; i < s.size(); ++i){
        if (s[i] == ' '){
            if (!temp.empty()){
                bool flag = false;
                for (int i = 0; i < pr.size(); ++i){

```

```

        if (temp.size() == pr[i]){
            flag = true;
            break;
        }
    }
    if (flag){
        ans += temp + " " + temp;
    }
    else{
        ans += temp;
    }
}
temp = "";
ans += " ";
}
else if (i == s.size() - 1){
    temp += s[i];
    if (!temp.empty()){
        bool flag = false;
        for (int i = 0; i < pr.size(); ++i){
            if (temp.size() == pr[i]){
                flag = true;
                break;
            }
        }
        if (flag){
            ans += temp + " " + temp;
        }
        else{
            ans += temp;
        }
    }
}

```

```

        }
    }
}
else{
    temp += s[i];
}
}
cout << ans;
return 0;
}

```

Задание3 (18/18 баллов)

```

#include <iostream>
#include <vector>
#include <string>
#include <cmath>
#define pb push_back
#define mp make_pair
#define ll long long
using namespace std;

ll convert_to_num(string s){
    ll num = 0;
    for (int i = 0; i < s.size(); ++i){
        num *= 10;
        num += s[i] - '0';
    }
}

```

```

        return num;
    }

int main()
{
    string s, temp;
    getline(cin, s);
    vector <ll> arr;
    for (int i = 0; i < s.size(); ++i){
        if (s[i] == ' '){
            if (!temp.empty()){
                arr.pb(-convert_to_num(temp));
            }
            temp = "";
        }
        else if (i == s.size() - 1){
            temp += s[i];
            if (!temp.empty()){
                arr.pb(-convert_to_num(temp));
            }
            temp = "";
        }
        else{
            temp += s[i];
        }
    }
    ll sum = 0;
    for (int i = 0; i < arr.size(); ++i){
        sum -= arr[i];
    }
}

```

```

for (int i = 0; i < arr.size(); ++i){
    for (int j = 0; j < arr.size() - 1; ++j){
        if (arr[j] < arr[j + 1]){
            ll t = arr[j];
            arr[j] = arr[j + 1];
            arr[j + 1] = t;
        }
    }
}

int n = arr.size(), m = sum / 2 + 1;
vector < vector <ll> > dp(n + 1, vector <ll> (m, 0));
for (int i = 1; i <= n; ++i){
    for (int j = 0; j < m; ++j){
        dp[i][j] = dp[i - 1][j];
        if (j + arr[i - 1] >= 0){
            if (dp[i][j] < dp[i - 1][j + arr[i - 1]] - arr[i -
1]){
                dp[i][j] = dp[i - 1][j + arr[i - 1]] - arr[i - 1];
            }
        }
    }
}

ll maxim = dp[n][m - 1];
cout << sum - maxim << " " << maxim;
return 0;
}

```



```

#include <iostream>
#include <vector>
#include <string>
#include <cmath>
#define pb push_back
#define mp make_pair
#define ll long long
using namespace std;

ll convert_to_num(string s){
    ll num = 0;
    for (int i = 0; i < s.size(); ++i){
        num *= 10;
        num += s[i] - '0';
    }
    return num;
}

int main()
{
    int n, m;
    cin >> m >> n;
    vector < vector <int> > gr(n, vector <int>(m));
    vector < vector <int> > ans(n);
    vector <double> srznach(m);
    vector <int> all;
    for (int i = 0; i < n; ++i){
        for (int j = 0; j < m; ++j){
            cin >> gr[i][j];
            all.pb(gr[i][j]);
        }
    }
}

```

```

    }
}
for (int i = 0; i < n; ++i){
    for (int j = 0; j < gr[i].size(); ++j){
        for (int k = 0; k < gr[i].size() - 1; ++k){
            if (gr[i][k] > gr[i][k + 1]){
                ll t = gr[i][k];
                gr[i][k] = gr[i][k + 1];
                gr[i][k + 1] = t;
            }
        }
    }
}
for (int i = 0; i < m; ++i){
    srznach[i] = 0;
}
for (int i = 0; i < m; ++i){
    for (int j = 0; j < n; ++j){
        srznach[i] += gr[j][i];
    }
    srznach[i] /= n;
}
for (int i = 1; i < m - 1; ++i){
    if (srznach[i] == srznach[i - 1] && i != m - 2){
        int k = i + 1;
        int spi = gr[0][i], nfound = -1, prevfound;
        while (k <= m - 2 && srznach[i] == srznach[k]){
            ++k;
        }
        for (int r = 0; r < n; ++r){

```

```

        if (gr[r][k] > spi){
            if (nfound == -1 || gr[r][k] < prevfound){
                prevfound = gr[r][k];
                nfound = r;
            }
        }
    }
    if (nfound != -1){
        swap(gr[nfound][i], gr[nfound][k]);
    }
    for (int i = 0; i < m; ++i){
        srznach[i] = 0;
    }
    for (int i = 0; i < m; ++i){
        for (int j = 0; j < n; ++j){
            srznach[i] += gr[j][i];
        }
        srznach[i] /= n;
    }
}

}

for (int i = n - 1; i >= 0; --i){
    for (int j = m - 1; j >= 0; --j){
        cout << gr[i][j] << " ";
    }
}

return 0;
}

```

