Праймарадичная система счисления

Посылка по задаче 1 «Праймарадичная система счисления»

```python
primes = []


def prime(x):
    i = 2
    while i * i <= x:
        if x % i == 0:
            return False
        i += 1
    return True


def f(x):
    a = list(map(int, x.split(':')))
    a.reverse()
    val = 0
    for i in range(len(a)):
        val += a[i] * primes[i]
    return val


def solve():
    for i in range(1, 1000):
        if prime(i):
            primes.append(i)
    for i in range(1, len(primes)):
        primes[i] *= primes[i - 1]

    n = int(input())
    v = []
    for i in range(n):
        s = input()
        v.append(f(s))

    found = False
    for i in range(n):
        if not v[i]:
            found = True
            print(i + 1)
```

```
        if found:
            return

    last = []
    for p in primes:
        cnt = 0
        for i in range(n):
            if v[i] % p == 0:
                if not cnt:
                    last.clear()
                cnt += 1
                last.append(i)
        if not cnt:
            break

    mx = v[last[0]]
    for i in last:
        if v[i] > mx:
            mx = v[i]
    for i in range(n):
        if v[i] == mx:
            print(i + 1)


t = 1
# t = int(input())
for _ in range(t):
    solve()
```

Протокол проверяющей системы по задаче 1 «Прайморадичная система счисления»

```
OK
28 total tests runs, 28 passed, 0 failed.
Score gained: 100 (out of 100).
```

Посылка по задаче 2 «Сундуки»

```
mp = {'a': 1, 'b': 5, 'c': 10, 'd': 50, 'e': 100, 'f': 200, 'g': 500, 'h': 1000, 'i': 2500,
      'A': 500, 'B': 1000, 'C': 5000, 'D': 10000, 'E': 20000, 'F': 50000, 'G': 100000,
      'H': 200000, 'I': 500000}


def solve():
    n = int(input())
    a = []
    for i in range(n):
```

```
        s = input()
        val = 0
        for c in s:
            val += mp[c]
        a.append(val)
    mn, mx = min(a), max(a)
    mnv, mxv = [], []
    for i in range(n):
        if a[i] == mn:
            mnv.append(i)
        if a[i] == mx:
            mxv.append(i)
    d1, d2, d3, d4 = abs(mnv[0] - mxv[0]), abs(mnv[0] - mxv[-1]), abs(mnv[-1] - mxv[0]), abs(mnv[-1] - mxv[-1])
    a, b = 0, 0
    if d1 == max(d1, d2, d3, d4):
        a, b = mnv[0], mxv[0]
    if d2 == max(d1, d2, d3, d4):
        a, b = mnv[0], mxv[-1]
    if d3 == max(d1, d2, d3, d4):
        a, b = mnv[-1], mxv[0]
    if d4 == max(d1, d2, d3, d4):
        a, b = mnv[-1], mxv[-1]
    if a > b:
        a, b = b, a
    print(a + 1, b + 1, sep='\n')

    # print(v[0][1] + 1, v[-1][1] + 1, sep='\n')


t = 1
# t = int(input())
for _ in range(t):
    solve()
```

Протокол проверяющей системы по задаче 2 «Сундуки»

```
OK
28 total tests runs, 28 passed, 0 failed.
Score gained: 100 (out of 100).
```

Посылка по задаче 3 «Кубик»

```
#define _CRT_SECURE_NO_WARNINGS

#include<iostream>
```

```cpp
#include<vector>
#include<map>
#include<queue>
#include<algorithm>

using namespace std;

typedef long long ll;
typedef long double ld;
typedef vector<int> vi;
typedef vector<ll> vll;
typedef pair<int, int> pii;
typedef map<int, int> mii;

const int INF = 2e9;
const ll LINF = 2e18;
const ld EPS = 1e-9;

string s, ok = "1111223344556666";

void u() {
        s = { s[15], s[14], s[2], s[3], s[4], s[5], s[7], s[6], s[10], s[9], s[8], s[11], s[12], s[13], s[1], s[0] };
}

void d() {
        s = { s[0], s[1], s[13], s[12], s[5], s[4], s[6], s[7], s[8], s[11], s[10], s[9], s[3], s[2], s[14], s[15] };
}

void l() {
        s = { s[12], s[1], s[14], s[3], s[6], s[5], s[4], s[7], s[9], s[8], s[10], s[11], s[0], s[13], s[2], s[15] };
}

void r() {
        s = { s[0], s[13], s[2], s[15], s[4], s[7], s[6], s[5], s[8], s[9], s[11], s[10], s[12], s[1], s[14], s[3] };
}

void f() {
        s = { s[2], s[0], s[3], s[1], s[11], s[10], s[9], s[8], s[4], s[5], s[6], s[7], s[14], s[12], s[15], s[13]};
}

string bs, cur;
int bc = 10, c = 0, max_d = 8;

void rec(int depth) {
```

```
if (s == ok && bc > c)
        bs = cur, bc = c;
for (int i = 0; i < 4; ++i) {
        f();
        ++c;
        cur.push_back('F');
        if (s == ok && bc > c)
                bs = cur, bc = c;
}
c -= 4;
for (int i = 0; i < 4; ++i)
        cur.pop_back();
if (depth == max_d)
        return;
if (!cur.size() || cur.back() != 'u') {
        cur.push_back('U');
        u();
        ++c;
        rec(depth + 1);
        --c;
        u();
        cur.pop_back();
}
if (!cur.size() || cur.back() != 'd') {
        cur.push_back('D');
        d();
        ++c;
        rec(depth + 1);
        d();
        --c;
        cur.pop_back();
}
if (!cur.size() || cur.back() != 'l') {
        cur.push_back('L');
        l();
        ++c;
        rec(depth + 1);
        l();
        --c;
        cur.pop_back();
}
if (!cur.size() || cur.back() != 'r') {
        cur.push_back('R');
        r();
```

```
                ++c;
                rec(depth + 1);
                r();
                --c;
                cur.pop_back();
        }
}

void solve() {
        cin >> s;
        rec(0);
        cout << bs;
}

int main() {
        ios_base::sync_with_stdio(0);
        cin.tie(0);
#ifdef _DEBUG
        freopen("input.txt", "r", stdin);
        freopen("output.txt", "w", stdout);
#endif
        int tt = 1;
        //cin >> tt;
        while (tt--)
                solve();
}
```

Протокол проверяющей системы по задаче 3 «Кубик»

```
OK
50 total tests runs, 50 passed, 0 failed.
Score gained: 100 (out of 100).
```

Посылка по задаче 4 «Codemirror»

```
#define _CRT_SECURE_NO_WARNINGS

#include<iostream>
#include<vector>
#include<map>
#include<queue>
#include<algorithm>

using namespace std;
```

```cpp
typedef long long ll;
typedef long double ld;
typedef vector<int> vi;
typedef vector<ll> vll;
typedef pair<int, int> pii;
typedef map<int, int> mii;

const int INF = 2e9;
const ll LINF = 2e18;
const ld EPS = 1e-9;

void solve() {
        int n; cin >> n;
        string s; cin >> s;
        int k; cin >> k;
        while (k--) {
                int q; cin >> q;
                string cur, buffer;
                int cursor = 0, last = 0;
                for (int i = 0; i < q; ++i) {
                        if (isalpha(s[i])) {
                                cur.insert(cur.begin() + cursor, s[i]);
                                ++cursor;
                        }
                        else if (s[i] == '>') {
                                if (cursor == cur.size())
                                        continue;
                                ++cursor;
                                last = cursor;
                        }
                        else if (s[i] == '<') {
                                if (cursor == 0)
                                        continue;
                                --cursor;
                                last = cursor;
                        }
                        else if (s[i] == '}') {
                                if (cursor == cur.size())
                                        continue;
                                ++cursor;
                        }
                        else if (s[i] == '{') {
                                if (cursor == 0)
                                        continue;
```

```
                --cursor;
        }
        else if (s[i] == 'C') {
                buffer.clear();
                int l = last, r = cursor;
                if (l > r)
                        swap(l, r);
                for (int j = l; j <= r; ++j)
                        buffer.push_back(cur[j]);
        }
        else if (s[i] == 'V') {
                int l = last, r = cursor;
                if (l > r)
                        swap(l, r);
                for (int j = r; j <= l; --j)
                        cur.erase(cur.begin()+j);
                if (cursor == r)
                        cursor = l;
                cur.insert(cur.begin() + cursor, buffer.begin(), buffer.end());
        }
        else if (s[i] == 'X') {
                buffer.clear();
                int l = last, r = cursor;
                if (l > r)
                        swap(l, r);
                for (int j = l; j <= r; ++j)
                        buffer.push_back(cur[j]);
                for (int j = r; j <= l; --j)
                        cur.erase(cur.begin() + j);
                if (cursor == r)
                        cursor = l;
        }
        else if (s[i] == 'D') {
                int l = last, r = cursor;
                if (l > r)
                        swap(l, r);
                for (int j = r; j <= l; --j)
                        cur.erase(cur.begin() + j);
                if (cursor == r)
                        cursor = l;
        }
    }
    cout << cur << endl;
}
```

```
}

int main() {
        ios_base::sync_with_stdio(0);
        cin.tie(0);
#ifdef _DEBUG
        freopen("input.txt", "r", stdin);
        freopen("output.txt", "w", stdout);
#endif
        int tt = 1;
        //cin >> tt;
        while (tt--)
                solve();
}
```

Протокол проверяющей системы по задаче 4 «Codemirror»

```
см. файл report4.txt
```

Посылок по задаче 5 «Библиотека» не было.