```
#include <bits/stdc++.h>
using namespace std;
int main(){
        string s;
        getline(cin,s); // nhap xau co dau cach dung getline
        stringstream ss(s);
        //>>
        string word;
        int cnt =0;
        while(ss >> word){
                ++cnt;
        }
        cout << cnt << endl;
        return 0;
}
```

Bai1:
```
#include <bits/stdc++.h>
using namespace std;
int main(){
        string s;
        getline(cin,s); // nhap xau co dau cach dung getline
        string word;
        cin>> word;
        stringstream ss(s);
        string token;
        while(ss >> token){
                if(token != word){
                        cout << token << " ";
                }
        }
        return 0;
}
```

Bai2.1:
```
#include <bits/stdc++.h>
using namespace std;
int main(){
        int t; cin>>t;
        cin.ignore();
        while(t--){
```

```cpp
        string s;
        getline(cin,s);
        for(int i=0;i<s.size();i++) s[i]= tolower(s[i]);
        vector<string> v;
        stringstream ss(s);
        string tmp;
        while(ss >> tmp) v.push_back(tmp);
        cout << v[v.size()-1]; //cout v.back()
        for(int i=0;i<v.size()-1;i++){
                cout << v[i][0];
        }
        cout <<"@gmail.com" << endl;
    }
    return 0;
}
```

Bai2.2:

```cpp
#include <bits/stdc++.h>
using namespace std;
int main(){
    int t; cin>>t;
    cin.ignore();
    map<string,int> mp;
    while(t--){
        string s;
        getline(cin,s);
        for(int i=0;i<s.size();i++) s[i]= tolower(s[i]);
        vector<string> v;
        stringstream ss(s);
        string tmp;
        string res ="";
        while(ss >> tmp) v.push_back(tmp);
        res+= v[v.size()-1]; //cout v.back()
        for(int i=0;i<v.size()-1;i++){
                res += v[i][0];
        }
        if(mp[res]==0){
                cout << res << "@gmail.com" << endl;}
        else{
                cout << res << mp[res]+1 << "@gmail.com" << endl;
        }
        mp[res]++;
    }
```

```cpp
        return 0;
}

Bai3:
#include <bits/stdc++.h>
using namespace std;
void vietHoa(string &s){
        for(int i=0;i < s.size();i++){
                s[i] = toupper(s[i]);
        }
}
void chuanHoa(string &s){
        s[0]= toupper(s[0]);
        for(int i=1;i<s.size();i++){
                s[i] = tolower(s[i]);
        }
}
int main(){
        int t; cin>>t;
        cin.ignore();
        map<string,int> mp;
        while(t--){
                string s;
                getline(cin,s);
                for(int i=0;i<s.size();i++) s[i]= tolower(s[i]);
                vector<string> v;
                stringstream ss(s);
                string tmp;
                while(ss >> tmp) v.push_back(tmp);
                for(int i=0;i<v.size()-1;i++){
                        chuanHoa(v[i]);
                        cout << v[i];
                        if(i == v.size()-2) cout <<", ";
                        else cout << " ";
                }
                vietHoa(v[v.size()-1]);
                cout << v[v.size()-1];
                cout << endl;
        }
        return 0;
}

Bai4:
#include <bits/stdc++.h>
```

```cpp
using namespace std;
void vietHoa(string &s){
    for(int i=0;i < s.size();i++){
        s[i] = toupper(s[i]);
    }
}
void chuanHoa(string &s){
    s[0]= toupper(s[0]);
    for(int i=1;i<s.size();i++){
        s[i] = tolower(s[i]);
    }
}
int main(){
    int t; cin>>t;
    cin.ignore();
    map<string,int> mp;
    while(t--){
        string s;
        getline(cin,s);
        for(int i=0;i<s.size();i++) s[i]= tolower(s[i]);
        vector<string> v;
        stringstream ss(s);
        string tmp;
        while(ss >> tmp) v.push_back(tmp);

        chuanHoa(v[v.size()-1]);
        cout << v[v.size()-1] <<", ";

        for(int i=0;i<v.size()-1;i++){
            chuanHoa(v[i]);
            cout << v[i] << " ";
        }
    }
    return 0;
}
```

Bai5.1 cach1
```cpp
#include <bits/stdc++.h>
using namespace std;

int main(){
    string s;
    cin >> s;
    set<char> se;
```

```cpp
        for(char x:s){
                se.insert(x);
        }
        if(se.size()==26) cout << "YES" << endl;
        else "NO";
        return 0;
}
```

Bai5.1 cach2:

```cpp
#include <bits/stdc++.h>
using namespace std;

int main(){
        string s;
        cin >> s;
        int a[26] ={0};
        for(char x:s){
                a[x-'a']=1;
        }
        for(int i=0;i<26;i++){
                if(a[i]==0){
                        cout << "NO\n";
                        return 0;
                }
        }
        cout << "YES\n";
        return 0;
}
```

Bai5.2:
```cpp
#include <bits/stdc++.h>
using namespace std;

int main(){
        int t; cin>>t;
        while(t--){
                string s;cin>>s;
                int k;cin>>k;
                if(s.size()<26){
                        cout << 0 << endl; continue;
                }
                set<char> se;
                for(char x:s){
```

```
                se.insert(x);
        }
        if(26 -se.size() <=k){
                cout <<"1\n";
        }
        else
                cout << "0\n";
    }
    return 0;
}


Bai 6:
#include <bits/stdc++.h>
using namespace std;

int main(){
    int t; cin>>t;
    cin.ignore();
    while(t--){
        string s;
        getline(cin,s);
        stringstream ss(s);
        string tmp;
        int cnt=0;
        while(ss >> tmp) ++cnt;
        cout << cnt << endl;
    }
}

Bai7:
#include <bits/stdc++.h>
using namespace std;
int cnt[1005];
int main(){
    int t; cin>>t;
    cin.ignore();
    while(t--){
        string s;
        getline(cin,s);
        map<char,int>mp;
        for(char x:s){
                mp[x]++;
        }
```

```
                long long ans = s.size();
                for(auto it: mp){
                        ans+= it.second * (it.second-1)/2;
                }
                cout << ans << endl;
        }
}


Bai7 cach 2:
#include <bits/stdc++.h>
using namespace std;
int cnt[1005];
int main(){
        int t; cin>>t;
        cin.ignore();
        while(t--){
                string s;
                getline(cin,s);
                int a[256] ={0};
                for(char x:s){
                        a[x]++;
                }
                long long ans = s.size();
                for(int i=0;i<256;i++){
                        if(a[i]!=0){
                                ans += a[i]* (a[i]-1)/2;
                        }
                }
                cout << ans << endl;
        }
}

Bai8:
#include <bits/stdc++.h>
using namespace std;
int cnt[1005];
int main(){
        int t; cin>>t;
        cin.ignore();
        while(t--){
                string s;
                getline(cin,s);
                int a[256] ={0};
                for(char x:s){
```

```cpp
                a[x]++;
        }
        string ans = "";
        for(char x:s){
                if(a[x]==1){
                        cout << x;
                }
        }
        cout << ans << endl;
    }
}
```

Bai9:
```cpp
#include <bits/stdc++.h>
using namespace std;
int cnt[1005];
int main(){
    int m,s;
    cin >>m>>s;
    if(s>9*m || s==0 && m>1){
            cout << "-1 -1\n"; return 0;
    }
    int lon[m], be[m] ={0};
    int tmp =s;
    for(int i=0;i<m;i++){
            if(s >= 9){
                    lon[i]=9;
                    s-=9;
            }
            else{
                    lon[i]=s;
                    s=0;
                    }
    }
    --tmp;
    for(int i=m-1;i>0;i--){
            if(tmp>=9){
                    be[i]=9;
                    tmp-=9;
            }
            else{
                    be[i]=tmp;
                    tmp=0;
            }
```

```cpp
            }
            be[0] = tmp +1;
            for(int i=0;i<m;i++) cout << be[i];
            cout << " ";
            for(int i=0;i<m;i++) cout << lon[i];
            return 0;

}
```

Bai10:

```cpp
#include <bits/stdc++.h>
using namespace std;
int cnt[1005];
int main(){
        int n;
        cin >>n;
        set<string> se;
        cin.ignore();
        for(int i=0;i<n;i++){
                string s;
                getline(cin,s);
                se.insert(s);
        }
        cout << se.size() << endl;
        return 0;

}
```

Bai11:

```cpp
#include <bits/stdc++.h>
using namespace std;
int cnt[1005];

bool check(string s){
        string t =s;
        reverse(s.begin(),s.end());
        if(s !=t) return false;
        for(char x:s){
                if((x-'0')%2==1)
                        return false;
        }
        return true;
}
int main(){
        int t; cin>>t;
```

```cpp
        while(t--){
                string s;cin >>s;
                if(check(s)) cout << "YES\n";
                else cout << "NO\n";
        }
        return 0;

}
```

Bai12;
```cpp
#include <bits/stdc++.h>
using namespace std;
int cnt[1005];

void solve(){
        string s;cin>>s;
        int i= s.size()-2;
        while(i>=0 && s[i]<=s[i+1]) --i;
        if(i==-1){
                cout << "-1\n"; return;
        }
        int j=s.size()-1;
        while(s[i] <= s[j] || (s[j-1]==s[j] && s[j] <s[i])){
                --j;
        }
        swap(s[i],s[j]);
        if(s[0]=='0'){
                cout << "-1\n";
        }
        else cout << s << endl;
}
int main(){
        int t; cin>>t;
        while(t--){
                solve();
        }
        return 0;

}
```

Bai13:
```cpp
#include <bits/stdc++.h>
using namespace std;
```

```cpp
int cnt[1005];


int main(){
        string s;cin>>s;
        int a[26]= {0};
        for(char x:s){
                a[x-'a']++;
        }
        int max_val = *max_element(a,a+26);
        if(s.length()-max_val + 1 >= max_val)
                cout<< "1\n";
        else
                cout <<"0\n";
        return 0;


}
```

Bai14:
```cpp
#include <bits/stdc++.h>
using namespace std;
int cnt[1005];

void max_val(string a, string b){
        for(char &x:a){
                if(x== '5') x='6';
        }
        for(char &x:b){
                if(x=='5') x= '6';
        }
        cout << stoll(a)+stoll(b)<<endl;
}
void min_val(string a, string b){
        for(char &x:a){
                if(x== '6') x='5';
        }
        for(char &x:b){
                if(x=='6') x= '5';
        }
        cout << stoll(a)+stoll(b)<<" ";
}
int main(){
        int t;cin>>t;
```

```cpp
        while(t--){
                string a,b; cin>>a>>b;
                min_val(a,b);
                max_val(a,b);
        }
        return 0;


}

```

Bai15:
```cpp
#include <bits/stdc++.h>
using namespace std;
int cnt[1005];
void solve(string s){
        int ans=0;
        int sum=0;
        for(char x:s){
                if(isdigit(x)){
                        sum = sum*10+x-'0';
                }
                else{
                        ans+= sum;
                        sum=0;
                }
        }
        ans+= sum;
        cout << ans <<endl;
}
int main(){
        int t;cin>>t;
        while(t--){
                string s;
                cin>>s;
                solve(s);
        }
        return 0;


}
#include <bits/stdc++.h>
using namespace std;
int cnt[1005];
void solve(string s){
```

```cpp
    int ans=INT_MIN;
    int sum=0;
    for(char x:s){
        if(isdigit(x)){
            sum = sum*10+x-'0';
        }
        else{
            ans=max(ans,sum);
            sum=0;
        }
    }
    ans = max(ans,sum);
    cout << ans <<endl;
}
int main(){
    int t;cin>>t;
    while(t--){
        string s;
        cin>>s;
        solve(s);
    }
    return 0;

}
```