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Contents

1 Estructuras de Datos

1.1 Unordered Map

```cpp
#include <ext/pb_ds/assoc_container.hpp>
using namespace __gnu_pbds;

struct custom_hash {
    static uint64_t splitmix64(uint64_t x) {
        // http://xorshift.di.unimi.it/splitmix64.c
        x += 0x9e3779b97f4a7c15;
        x = (x ^ (x >> 30)) * 0xbf58476d1ce4e5b9;
        x = (x ^ (x >> 27)) * 0x94d049bb133111eb;
        return x ^ (x >> 31);
    }

    size_t operator()(uint64_t x) const {
        static const uint64_t FIXED_RANDOM = chrono::steady_clock::now().
            time_since_epoch().count();
        return splitmix64(x + FIXED_RANDOM);
    }
};

gp_hash_table<int, int,custom_hash> m1;

//Funcion count
m1.find(x)!=m1.end()
```

2 Varios

2.1 Template

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

#define forn(i,n)       for(int i=0; i<n; i++)
#define forr(i,a,n)     for(int i=a; i<n; i++)
#define fore(i,a,n)     for(int i=a; i<=n; i++)
#define each(a,b)       for(auto a: b)
#define all(v)          v.begin(),v.end()
#define sz(a)           (int)a.size()
#define debln(a)        cout << a << "\n"
#define deb(a)          cout << a << " "
```

```cpp
#define pb              push_back

typedef long long ll;
typedef vector<int> vi;
typedef pair<int,int> ii;

void sol(){

}

int main(){
    ios::sync_with_stdio(false);cin.tie(0);

    int t=1;
    cin>>t;
    while(t--){
        sol();
    }

    return 0;
}
```

2.2 String a vector<int>

```cpp
//Convertir una cadena de numeros separados por " " en vector de enteros
//Leer varias de esas querys
cin.ignore();
while(q--){
  string s;
  getline(cin, s);
  vector<int> qr;
  stringstream ss(s);
  int num;
  while (ss >> num)   qr.push_back(num);
}
```

2.3 Generar permutaciones

```cpp
//Generar todas las permutaciones de un arreglo
sort(all(a));
do{
  //hacer lo que quieras con la perm generada
}while(next_permutation(all(a)));
```