

Algorithm Library

`magic::team.getname()`

South China Normal University

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头文件

DEBUG 头

```
1  #include <bits/stdc++.h>
2  using namespace std;
3  using i64=long long;
4  using i128=__int128;
5
6  namespace DBG
7  {
8      template <class T>
9      void _dbg(const char *f,T t) { cerr<<f<<'\n'; }
10
11     template <class A,class... B>
12     void _dbg(const char *f,A a,B... b)
13     {
14         while (*f!=',') cerr<<*f++;
15         cerr<<'\n';
16         _dbg(f+1,b...);
17     }
18
19     template <class T>
20     ostream& operator << (ostream& os,const vector<T> &v)
21     {
22         os<<"[ ";
23         for (const auto &x:v) os<<x<<", ";
24         os<<"]";
25         return os;
26     }
27
28     #define dbg(...) _dbg(#__VA_ARGS__, __VA_ARGS__)
29 }
30
31 using namespace DBG;
```

__int128 输出流

```
1  ostream &operator << (ostream &os,i128 n)
2  {
3      string s;
4      bool neg=n<0;
5      if (neg) n=-n;
6      while (n)
7      {
8          s+='0'+n%10;
9          n/=10;
10     }
11     if (neg) s+='-';
12     reverse(s.begin(),s.end());
13     if (s.empty()) s+='0';
14     return os<<s;
15 }
```

数学

取模类 (MInt)

```
1  template <class T>
2  constexpr T power(T a,i64 b)
3  {
4      T res=1;
5      for (;b>=1;a*=a)
6          if (b&1) res*=a;
7      return res;
8  }
9
10 template <int P>
11 struct MInt
```

```

12 {
13     int x;
14     constexpr MInt():x{} {}
15     constexpr MInt(i64 x):x{norm(x%getMod())} {}
16
17     static int Mod;
18     constexpr static int getMod()
19     {
20         if (P>0) return P;
21         else return Mod;
22     }
23
24     constexpr static void setMod(int Mod_) { Mod=Mod_; }
25
26     constexpr int norm(int x) const
27     {
28         if (x<0) x+=getMod();
29         if (x>=getMod()) x-=getMod();
30         return x;
31     }
32
33     constexpr int val() const { return x; }
34
35     explicit constexpr operator int () const { return x; }
36
37     constexpr MInt operator - () const
38     {
39         MInt res;
40         res.x=norm(getMod()-x);
41         return res;
42     }
43
44     constexpr MInt inv() const
45     {
46         assert(x!=0);
47         return power(*this,getMod()-2);
48     }
49
50     constexpr MInt &operator *= (MInt rhs) &
51     {
52         x=1ll*x*rhs.x%getMod();
53         return *this;
54     }
55
56     constexpr MInt &operator += (MInt rhs) &
57     {
58         x=norm(x+rhs.x);
59         return *this;
60     }
61
62     constexpr MInt &operator -= (MInt rhs) &
63     {
64         x=norm(x-rhs.x);
65         return *this;
66     }
67
68     constexpr MInt &operator /= (MInt rhs) &
69     {
70         return *this*=rhs.inv();
71     }
72
73     friend constexpr MInt operator * (MInt lhs,MInt rhs)
74     {
75         MInt res=lhs;
76         res*=rhs;
77         return res;
78     }
79
80     friend constexpr MInt operator + (MInt lhs,MInt rhs)
81     {
82         MInt res=lhs;

```

```

83         res+=rhs;
84         return res;
85     }
86
87     friend constexpr MInt operator - (MInt lhs,MInt rhs)
88     {
89         MInt res=lhs;
90         res-=rhs;
91         return res;
92     }
93
94     friend constexpr MInt operator / (MInt lhs,MInt rhs)
95     {
96         MInt res=lhs;
97         res/=rhs;
98         return res;
99     }
100
101     friend constexpr istream &operator >> (istream &is,MInt &a)
102     {
103         i64 v;
104         is>>v;
105         a=MInt(v);
106         return is;
107     }
108
109     friend constexpr ostream &operator << (ostream &os,const MInt &a) { return os<<a.val(); }
110
111     friend constexpr bool operator == (MInt lhs,MInt rhs) { return lhs.val()==rhs.val(); }
112
113     friend constexpr bool operator != (MInt lhs,MInt rhs) { return lhs.val()!=rhs.val(); }
114 };
115
116 template<>
117 int MInt<0>::Mod=1;
118
119 template<int V,int P>
120 constexpr MInt<P> CInv=MInt<P>(V).inv();

```