Competitive Programming Reference

Enya Quetzalli Gómez Rodríguez

eithnegomez@hotmail.com
github.com/equetzal

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Extras

Definitions

```cpp
#if defined(_USE_MATH_DEFINES) && !defined(_MATH_DEFINES_DEFINED)
#define _MATH_DEFINES_DEFINED
    // e
    #define M_E         2.71828182845904523536
    // log2(e)
    #define M_LOG2E         1.44269504088896340736
    // log10(e)
    #define M_LOG10E    0.434294481903251827651
    // ln(2)
    #define M_LN2       0.693147180559945309417
    // ln(10)
    #define M_LN10          2.30258509299404568402
    // pi
    #define M_PI        3.14159265358979323846
    // pi/2
    #define M_PI_2          1.57079632679489661923
    // pi/4
    #define M_PI_4          0.785398163397448309616
    // 1/pi
    #define M_1_PI          0.318309886183790671538
    // 2/pi
    #define M_2_PI          0.636619772367581343076
    // 2/sqrt(pi)
    #define M_2_SQRTPI  1.12837916709551257390
    // sqrt(2)
    #define M_SQRT2         1.41421356237309504880
    // 1/sqrt(2)
    #define M_SQRT1_2   0.707106781186547524401
#endif
```

Read Data From Files

```cpp
freopen("input.txt", "r", stdin);
freopen("output.txt", "w", stdout);
```

Template

```cpp
#include <bits/stdc++.h>

#define endl "\n"
#define fast_io ios_base::sync_with_stdio(false);cin.tie(NULL);

using namespace std;

typedef long long int lli;

int main(){


    return 0;
}
```

Competitive Programming Reference

I met the competitive programming at my university "The Superior School of Computer Sciences of the National Polytechnic Institute", thanks to a club within the school called "algorithmic club", where I met ICPC and loved competitive programming, this group of people at I belong has offered me everything I know now, we always pass all our knowledge to the following generations, and we all contribute to our community to achieve more and more. I will always be grateful to this group of people who changed my life

Special thanks: