Solution: 4513024

CodeChef submission 4513024 (C++ 4.3.2) plaintext list. Status: AC, problem ENCODE07, contest CODECHEF. By thecodekaiser (thecodekaiser), 2014-08-08 12:17:29.

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/**
 * This question asks us to find the no of tuples (a,b) such that
 * mu(a*b) = mu(a) * mu(b),                    mu(n) --> Mobius function of n
 * It is equivalent to finding the no of co-prime doubles in a given range
 * Now, total no of doublets is n^2
 * Therefore,
 * ans = n^2 - Sigma[i=2 to n] #{gcd(a,b)==i && mu(a)!=0 && mu(b)!=0}
 *         = n^2 - Sigma[i=2 to n] mu(i) * #{gcd(a,b)>=i && mu(a)!=0 && mu(b)!=0}
 *         = n^2 - Sigma[i=2 to n] mu(i) * #{i|a && i|b && mu(a)!=0 && mu(b)!=0}
 *         = n^2 - Sigma[i=2 to n] mu(i) * #{i|a && mu(a)!=0} * #{i|b && mu(b)!=0}
 *         = n^2 - Sigma[i=2 to n] mu(i) * #{i|a && mu(a)!=0}^2
 * This answer was inspired from Fura2's ans
 * Author: thecodekaiser
 */

#include <iostream>
#include <cstdlib>
#include <cstdio>
#include <vector>

using namespace std;
#define MAXN 100010
typedef long long ll;

// Function : to precompute the primes
vector<bool> isPrime(MAXN,true);
vector<vector<int> > primeFactors;
int sqfree[MAXN];
int mu[MAXN];         // Mobius function

void pre()
{
    isPrime[0] = isPrime[1] = false;
    primeFactors.resize(MAXN);
    for(int i = 2; i <= MAXN; i++) {
        if(isPrime[i]) {
          primeFactors[i].push_back(i);
          for(int j = 2*i;j <= MAXN;j += i) {
            isPrime[j]=false;
```

Comments