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#include <stdio.h>
#include <math.h>

int main(){
    int n, nCopy, i, iCopy, j;
    scanf("%d", &n);
    int isPrime = 1;
    int primeSum = 0, digitSum = 0, power, primeDigitSum = 0;

    // First verify if the number is prime or not
    for(i = 2; i < n; i++){
        if(n % i == 0)
            isPrime = 0;
    }
    if(isPrime){
        printf("Not Smith Number"); // Prime numbers cannot be Smith
        return 0; // No point continuing the program - Goodbye!
    }

    // For composite numbers more work needed
    for(i = 2; i < n; i++){ // Not going till n as we know n not prime
        if(n % i == 0){ // if i is a divisor of n
            isPrime = 1;
            for(j = 2; j < i; j++)
                if(i % j == 0)
                    isPrime = 0; // i is not a prime divisor of n
            if(isPrime){ // i is a prime divisor of n
                //printf("%d is a prime divisor ", i);
                power = 0; // What is the power of i in n
                nCopy = n; // I will distort n so create a copy
                while(nCopy % i == 0){
                    power++; // i still divides n
                    nCopy /= i;
                }
                //printf("with %d power ", power);
                primeDigitSum = 0; // Calculate sum of digits of i
                iCopy = i; // I will distort i so create a copy
                while(iCopy){
                    primeDigitSum += iCopy % 10; // Last digit of i
                    iCopy /= 10;
                }
                //printf("and digit sum %d", primeDigitSum);
                primeSum += primeDigitSum * power;
                /* While coding this I had made a mistake. I wrote
                primeSum = primeDigitSum * power;
                instead of primeSum += primeDigitSum * power;
                The commented out printf statements you see above
                are how I found out what was the error :)
                */
            }
        }
    }

    while(n){
        digitSum += n % 10; // Last digit of n
        n /= 10;
    }

    if(digitSum == primeSum)
        printf("Smith Number");
    else
        printf("Not Smith Number");

    return 0;
}

```