Task: Let's calculate the sum of the non-trivial divisors of a natural number!

Specification

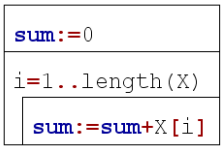
Input: $n \in \mathbb{N}$

Output: $dsum \in \mathbb{N}$

Precondition: $n>1$

Postcondition:

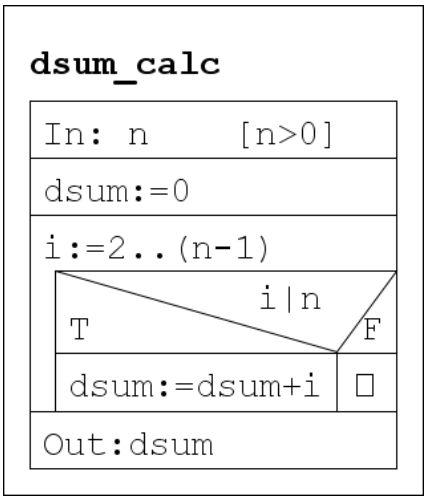
$$dsum = \sum_{\substack{i=2 \\ i|n}}^{n-1} i$$



Pattern: summation (sequence calculation)

Algorithm

Pattern		Task
length(X)	→	n
sum	→	dsum
X[]	→	the integers between 1 and n
A(X[i])	→	i|n



Code

```
namespace divsum {
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        internal class Program {
            static void Main(string[] args) {
                int n;
                // Reading in
                bool jo;
                do {
                    Console.Write("n = ");
                    jo = int.TryParse(Console.ReadLine(), out n) && n > 1;
                    if (!jo)  {
                        Console.WriteLine("Wrong number");
                    }
                } while (!jo);

                // Task
                int dsum=0;
                for (int i = 2; i < n; i++) {
                    if (n % i == 0) { // i divides n
                        dsum += i;
                    }
                }
                // Writing out the result
               Console.WriteLine("The sum of {0}'s non-trial divisors = {1}", n, dsum);
            }
        }

    }
}
```