

Introduction to programming

Lab 4

1. Do exercises on SPOJ at the following link:

https://www.spoj.com/EIUDISC2/problems/introf20_03/

2. Do exercises on Code Learn: 55 – 58.

3. Calculate $S(n) = 1 + 1.2 + 1.2.3 + \dots + 1.2..n$, $n > 0$

4. Print all even divisors of n .

1. DESCENDING

Given a positive integer N ($0 \leq N \leq 10^{16}$). Write a program to check if all digits in N are in descending order?

- **Input:** an integer N ($0 \leq N \leq 10^{16}$)
- **Output:** Write YES if all digits in N are in descending, otherwise write NO
- **Example:**

Input	Output
Ex1: 988765553200	YES
Ex2: 765587654321	NO

2. SPECIAL NUMBER

A special number is a natural number with at least 3 digits that is divisible by the number formed by its first and last digits. Given an integer N ($0 \leq N \leq 10^{18}$), check if N is a special number or not?

- **Input:** a positive integer N .
- **Output:** YES if N is a special number, NO otherwise.
- **Example:**

Input	Output
108	YES
111	NO

3. PRIMECOUNT

Given two positive integers A and B, assume $A \leq B$. Write a program to count the number of prime numbers in the range [A: B].

- **Input:** Two positive integer A, and B ($0 < A \leq B \leq 10^8$).
- **Output:** The number of prime numbers
- **Example:**

Input	Output
10 25	5