CS 421 --- Introducing Haskell via Project Euler

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Objectives

This guide will give you a quick introduction to Haskell by walking though the solutions to a few Project Euler problems. The goal is not just to explain the language, but the thinking behind it.

Pick a problem or two and try to solve it in your favorite language. After a few minutes, watch the videos to see the instructor solve them in Haskell.

Euler Problem 1 --- Multiples of 3 and 5

If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23. Find the sum of all the multiples of 3 or 5 below 1000.

Euler Problem 3 --- Prime Factors

The prime factors of 13195 are 5, 7, 13 and 29. What is the largest prime factor of the number 600851475143?

Euler Problem 20 --- Factorial Digit Sum

$n!$ means $n \times (n-1) \times ... \times 3 \times 2 \times 1$

For example, $10! = 10 \times 9 \times ... \times 3 \times 2 \times 1 = 3628800$, and the sum of the digits in the number $10!$ is $3 + 6 + 2 + 8 + 8 + 0 + 0 = 27$.

Find the sum of the digits in the number $100!$