

Introduction to COMP26120: Video 2 What is an Algorithm?

Louise A. Dennis

COMP26120



algorithm noun

- √) /'ælgəriðəm/
- 🌗 /ˈælgərɪðəm/

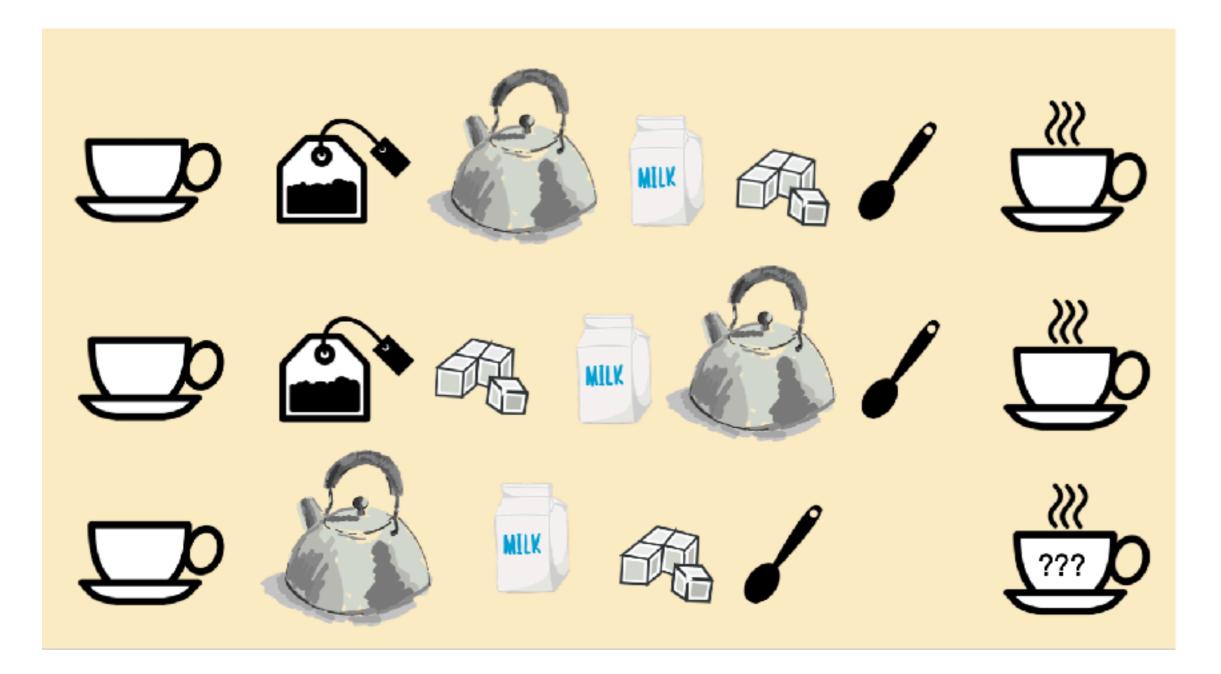
(computing)

- * a set of rules that must be followed when solving a particular problem
- The company uses machine-learning algorithms to recommend jobs to those looking for work.
- to apply a complex/sophisticated algorithm
- to develop/design/tweak an algorithm
- From internet shopping to the airport runway, algorithms are everywhere in modern life.

Word Origin

late 17th cent. (denoting the Arabic or decimal notation of numbers): variant (influenced by Greek *arithmos* 'number') of Middle English *algorism*, via Old French from medieval Latin *algorismus*. The Arabic source, *al-Kwārizmī* 'the man of Kwārizm' (now Khiva), was a name given to the 9th-cent. mathematician Abū Ja'far Muhammad ibn Mūsa, author of widely translated works on algebra and arithmetic.







Computational Problem vs. Algorithm

Computational Problem

A desired relationship between input(s) and output(s)

Example: The Sorting Problem

Input. A list L of numbers

Output. A permutation of L that is in order

Algorithm

A well-defined set of steps transforming input(s) into output(s) solving a computational problem.

Example: Insertion Sort, Bubble Sort etc.,



My Lovely Algorithm



Is it correct?

My Lovely Algorithm

