

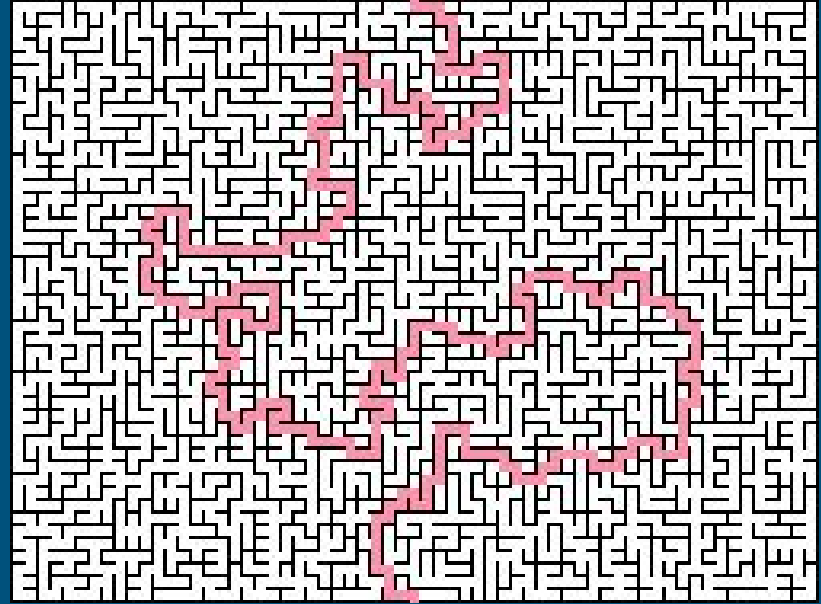


Algorithms

Programming

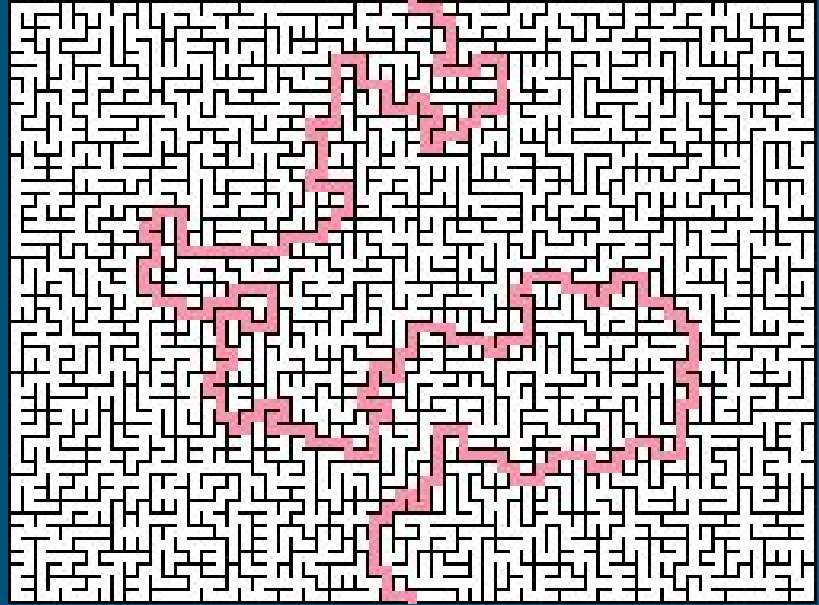


What is an Algorithm?



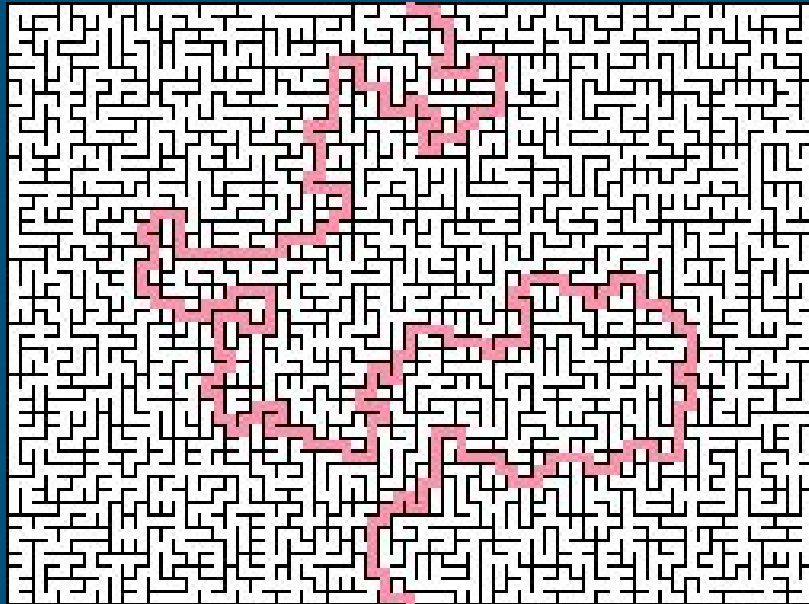
What is an Algorithm?

- Version 1 (V1): A *written* step-by-step solution to a problem



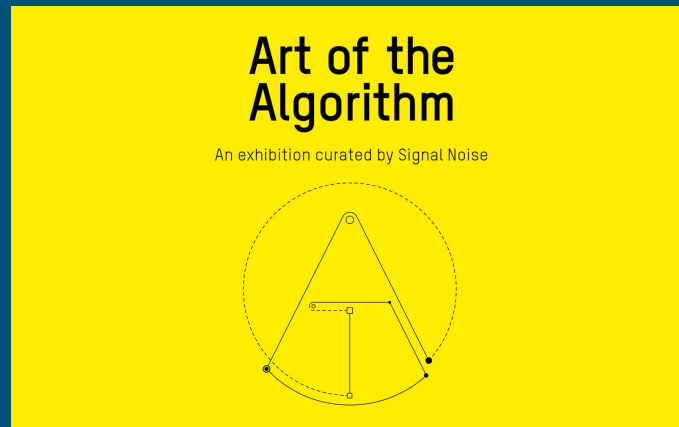
What is an Algorithm?

- V1: A *written* step-by-step solution to a problem
- What are the issues with this definition?



What is an Algorithm?

- Problems
 - Should an algorithm end?
 - Is there an order to the steps?
 - Can you ever skip steps?



What is an Algorithm?

- V2: An algorithm is a finite set of executable, conditional instructions that directs a terminating activity
- 4 Qualities
 - *Finite, executable, conditional and terminating*

What is an Algorithm?

- V2: An algorithm is a finite set of executable, conditional instructions that directs a terminating activity
- Again...are there any issues with this definition?

What is an Algorithm?

- V2: An algorithm is a finite set of executable, conditional instructions that directs a terminating activity



What is an Algorithm?

- V3: An algorithm is a finite set of unambiguous executable, conditional instructions that directs a terminating activity
- *5 Qualities*
 - *Finite, executable, conditional, terminating, and clear*

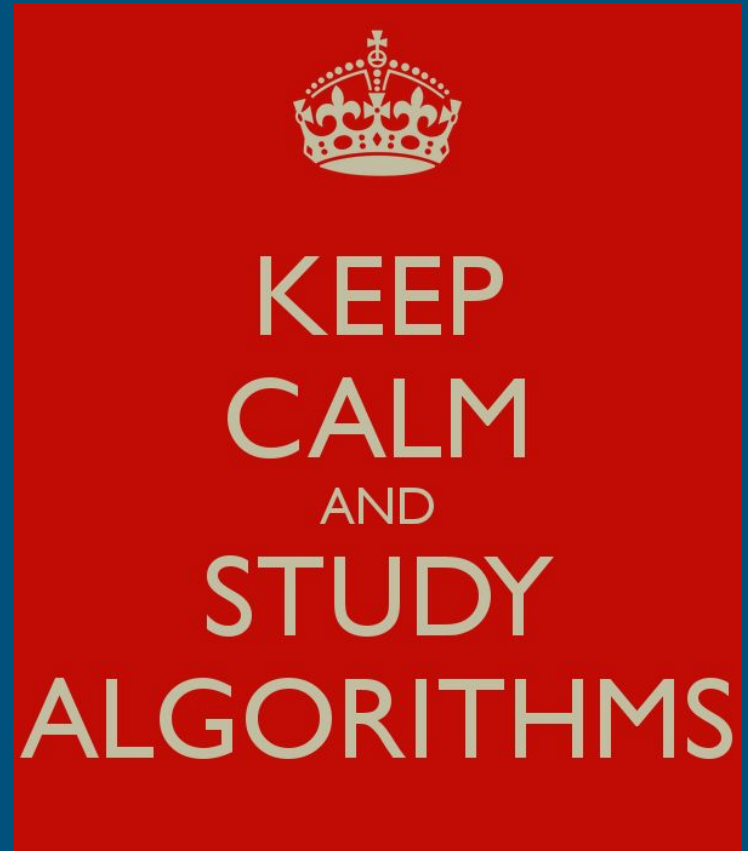
Why Use Algorithms?



KEEP
CALM
AND
STUDY
ALGORITHMS

Why Use Algorithms?

- So a computer can understand what you want it to do
- ALSO...so people can repeat the same action in the same manner



Why Use Algorithms



Why Use Algorithms



Why Use Algorithms

- Computer Science uses algorithms consistently
 - Meant to maximize the efficiency of hard problems

