**INTRODUCTION**

# What is Algorithms

Algorithms are just functions or a set of steps to perform a desired action on a computer. They can be as simple as a two-line function or as complex as a thousand-line function.

Examples include sorting images, analyzing user data, and building machine learning models.

# Why Algorithms Matter

Used by companies to solve problems efficiently and handle large data.

Integral to making programs scalable and performant.

Algorithms operate on data structures (e.g., arrays, objects, custom types). Together with data structures, they form functional programs.

## Big O Notation and Efficiency

Efficient algorithms reduce time complexity (e.g. O(n^2) 🡪 O(nlogn)). Large companies rely on these to handle vast amounts of data.