

Algorithms Part 1

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1 Course Introduction

Algorithm is a method for solving a problem and data structure is method to store information. We study algorithm to solve problem that could not otherwise be addressed. We also study algorithms for intellectual stimulation.

$$\text{Algorithms} + \text{Data Structure} = \text{Programs}$$

Algorithms may unlock the secrets of life and of the universe.

2 Union Find

2.1 Dinamic Connectivity problem

On a given set of N objects, design a algorithms to perform the following operations.

- Union command : This command will connect two objects in the given set.
- Find/connected query : Is there a path connecting the two objects?

3 Why study algorithms?

Algorithms impact is broad and far reaching.