Overview of Module 4

Module 4 will introduce intractability and serve as an introduction to the field of NP completeness.

- We will look at ways to describe problems and algorithms using some ideas from theory of computation.
- We will classify problems that can be solved in polynomial time as opposed to problems whose solutions can be verified in polynomial time.
- We define the class of nondeterministic polynomial time (NP) problems, contrasting it against polynomial time solvable problems (P)
- We define NP completeness and study SAT, a prototypical NP complete problem.
- We show how problems can be reduced to one another and study properties of these reductions.

Assignments

We will have quizzes after most of the lessons in this module. These quizzes are 'choose the correct answer' style and you will have unlimited attempts to solve them/get them right.

Programming Assignment

We will have a programming assignment that will help you approach the development of algorithms related to what we study in this module.