Data structures and Algorithms Introduction

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Introduction

- Questions you may have
  - What are data structures and algorithms ?
  - Why do we learn this course ?
- General answer
  - **Data structures** : an arrangement of data in a computer's memory (or on a disk) in order to facilitate the processing
  - **Algorithms** : A well-defined computational procedure that takes a set of values as input and produces a set of values as output
  - **The course** provides basic knowledge about how to solve efficiently real-world problems by dedicated data structures and algorithms
    - Sorting
    - Routing : transportation, telecommunication,..
    - Searching : dictionary,
    - etc.

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Plan

- Chapter 1 : Basic definitions and notations
- Chapter 2 : Recursive algorithms
- Chapter 3 : Basic data structures
- Chapter 4 : Trees
- Chapter 5 : Sorting
- Chapter 6 : Searching
- Chapter 7 : Graphs

Evaluation

- Midterm evaluation (30%)
  - Exercises
  - Projects
- Final exam (70%)

References

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