

<Data Structure>

Description

This undergraduate level course covers fundamental algorithms and data structures used in computer programming. Data structures are ways of organizing data within a computer's storage so that some desired operations may be performed on that data easily or efficiently. Algorithms are sequences of operations that, usually, take some input data and produce some desired output. Together, they form the foundation of computer programming. The topics to be covered include abstract data types, trees, hashing, sorting, graphs, string match, and algorithm design techniques.

Topics to be covered

- Algorithm analysis
- List, stack, queue
- Binary trees
- Non-binary trees
- Sorting
- Searching, hashing
- Graphs

Textbook

Cliff A. Shaffer, A Practical Introduction to Data Structures and Algorithm Analysis, Edition 3.2 (Java version), Mar/28/2013.

(The e-book is free for downloading at <http://people.cs.vt.edu/~shaffer/Book/>)