

Algorithmic Analysis and Programming Practices (IAAP113C)

Coding Convention

Motivation
Kernel coding style

Automatic Documentation Generators

Necessity for documentation
Doxygen

Shell scripting in Linux Environment

Introduction
Simple shell scripts
`whiptail`
Automatic testing using shell scripts

Revision Control Systems

Introduction
Mercurial SCM

Algorithms & Data Structures

n-d arrays
n-d arrays on hard disk
Linked list
Linked list on hard disk
Dynamic tables
Heaps using trees
AVL trees
Splay tree
B-tree
Depth first search
Breadth first search
Shell scripting
Disjoint sets using trees
Kruskal using disjoint sets
Eulerian path
Traveling salesman problem
Hamiltonian cycle
Hashing by chaining
Cuckoo hashing
Perfect hashing
Interval tree

Books and references

1. Pro Bash Programming by *Chris F.A. Johnson*, Apress
2. C Programming Language (Ed 2) by *Brian W. Kernighan* and *Dennis M. Ritchie*, Prentice Hall
3. Data Structures Using C and C++ by *Yedidyah Langsam*, *Moshe J. Augenstein* and *Aaron M. Tenenbaum*, Pearson
4. Introduction to Algorithms (Ed 3) by *TH Cormen*, *CE Leiserson*, *RL Rivest* and *C Stein*, MIT Press