

Advanced Algorithms and Programming Practices (AAP-113M)

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
Necessity
Bazaar and loggerhead

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. The Art of Multiprocessor Programming by *Maurice Herlihy and Nir Shavit*, Morgan Kaufmann Publishers
2. The Art of Concurrency by *Clay Breshears*, O Reilly
3. Introduction to Parallel Computing (2 Ed) by *Ananth Grama, Anshul Gupta, George Karypis, Vipin Kumar*, Addison Wesley
4. Professional C++ by *M Gregoire, NA Solter, SJ Kleper* (2Ed)