Algorithmic Analysis 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
    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