Class : 2MCA   **Course Name : DATA STRUCTURES LAB**
Course Code : MCA252

Syllabus

Total Teaching Hours For Semester : 60   **No of Lecture Hours/Week : 4**

Max Marks : 100   **Credits : 2**

Course Objective

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Learning Outcome

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Unit-1   **Teaching Hours:60**

1) Implement sequential search and binary search techniques.

2) Implement Selection sort.

3) Implement Insertion sort.

4) Implement Stacks.

5) Implement Queues.

6) Implement linked lists and some operations on linked lists.

7) Write a program to convert an infix expression to the postfix form.

8) Write a program to evaluate a postfix expression.

9) Implement Quick sort.

10) Implement Merge sort for array.

11) Merge Sort a file contents (without loading the content into an internal data structure)

12) Implement Two-Way linked lists.

13) Implement Circular linked lists.

14) Implement Binary Search Tree.

15) Implement Shell sort.

16) Implement Heap sort.

17) Implement Radix sort.

18) Implement Depth First Search for Graphs.

19) Implement Breadth First Search for Graphs.

Essential Text Books

1. Gilberg, F. Richard & Forouzan, A. Behrouz, *Data Structures:A Pseudocode approach with C*, 2nd Edition, Cengage, 2008.

Recommended Reading

1. Horowitz Sahni Anderson-Freed, *Fundamental of Data Structures in C*, Universities Press, Reprint 2008.
2. Richard Johnsonbaugh, *Algorithims*, Pearson Education, 2nd Edition, 2008.
3. Robert Sedgwick, *Algorithim in C++*, Addison-Wesley Publishing Company. [4] Knuth, Donald E, Art of Computer Programming, *Sorting & Searching*, Addison-Wesley, 2005.