**CS231 DATA STRUCTURES LAB**

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| **List of Exercises**   1. Implementation of various string operations - concatenation, comparison, lower case to uppercase conversion, substring search 2. Implementation of searching algorithms – linear search, binary search 3. Implementation of Stack and Multiple stacks using one dimensional array. 4. Application problems using stacks: Infix to post fix conversion, postfix and pre-fix evaluation 5. Implementation of Queue, DEQUEUE and Circular queue using arrays 6. Implementation of various linked list operations 7. Implementation of stack, queue and their applications using linked list. 8. Representation of polynomials using linked list, addition and multiplication of polynomials. 9. Implementation of binary trees using linked lists and arrays- creations, insertion, deletion and traversal. 10. Implementation of binary search trees – creation, insertion, deletion, search 11. Implementation of sorting algorithms – bubble, insertion, selection, quick (recursive and non-recursive), merge sort (recursive and non-recursive), and heap sort 12. Implementation of hash table using various mapping functions, various collision and overflow resolving schemes 13. Representation of graphs and computing various parameters (in degree, out degree etc.) - adjacency list, adjacency matrix 14. Implementation of BFS, DFS for each representation. |