**K J Somaiya College of Engineering, Mumbai-400077**

(An Autonomous College Affiliated to University of Mumbai)

**Department of Computer Engineering**

List of Experiments

**Subject: Data Structure**

Year : 2020-2021 (First Term) Semester –III

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| **Course Outcome** | **After successful completion of the course students should be able to** |
| **CO1** | Explain the different data structures used in problem solving |
| **CO2** | Apply linear and non-linear data structure in application development. |
| **CO3** | Describe concepts of advance data structures like set, map & dictionary |
| **CO4** | Demonstrate sorting and searching methods. |

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| **Sr. No** | **Topic** | **CO Mapping** |
| * 1 | Implementation of Basic operations on linked list-Creation, Insertion, Deletion, Traversal, Searching an element. | 1 |
| * 2. | Implementation of Advanced operations on linked list-Concatenate two lists, Reverse a list, Intersection of two lists. | 1 |
| * 2 | Implementation of polynomials operations (addition, subtraction) using link list | 2 |
|  | Implementation of Basic operations on stack using Array and Linked List- Create, Insert, Delete, Peek. | 1 |
| * 4 | Implementations of Infix to Postfix Transformation and its evaluation program using stacks. | 2 |
|  | Implementation of Different operations on Queue data structure (Simple Queue, Circular Queue, Dequeue; Teacher will assign one of the queue types and implementation method as array or linked list to each student)-  Create, Insert, Delete, Search an element, Destroy | 1 |
| * 4 | Implementation of priority queue application. | 1 |
|  | Implementation of BST & Binary tree traversal techniques. | 1 |
| * 5 | Implementation of Graph using a menu driven program. Also perform DFS and BFS on the same. | 2 |
| * 7 | Implementation of Shell sort, Counting sort, Bucket Sort, Radix Sort menu driven program. | 4 |
| * 8 | Implementation of Hashing using collision resolution methods linear and quadratic probing. | 4 |
| * 10 | Implementation of different operations on Dictionary – size, find\_element, findall\_elements, remove\_element, removeall\_elements | 3 |

**Student can perform experiment as per their choice other than this with prior permission like implementation of game, AVL tree, Multiway search trees, visual demonstration of searching, sorting, recursion etc..**

**Subject In-charge:** Prof. Swati Mali,

Prof. Shweta Dhawan Chachra