# LAKSHMI NARAIN COLLEGE OF TECHNOLOGY (MCA), BHOPAL

Master of Computer Applications

List of Experiments (CO-Based)

***MCA 106 C & DS Lab***

1. Execute a program to find the roots of quadratic equation. (CO 106.1)
2. Illustrate a program to convert Decimal to Binary. (CO 106.1)
3. Develop a program to perform matrix multiplication. (CO 106.2)
4. Write a program that reads string/line of text and display the string with each pair of adjacent letters reversed in individual words. (CO 106.2)
5. Program to demonstrate how to define a structure, declare a variable of that structure type, and access its members to store and display information about a student. (CO 106.2)
6. To demonstrate the concept of one dimensional array and find the sum and average of array elements. (CO 106.2)
7. Users examine the program's logic for verifying whether the stack is empty and understand the conditions and steps involved in performing Push and Pop operations. (CO 106.3)
8. Implementation of circular queue using array. (CO 106.3)
9. Program to demonstrate how to implement a linked list using arrays in C. (CO 106.4)
10. Design and implement a program to create a singly linked list which can perform the following functionalities:
    a. Insert a new node at the beginning of the list.
    b. Delete a node from a user-specified position in the list.
    c. Display the current elements of the linked list. (CO 106.4)
11. Design and Implement a program that dynamically allocates memory for an integer array using malloc()and allows the user to enter n integer values into the allocated memory. Now displays the array elements and frees the allocated memory using free() before the program terminates. (CO 106.2)
12. Design a program that reads an input file, calculates the frequency of each word, and checks whether each word is already present in an array. (CO 106.2)
13. Through the program, users apply their understanding of recursion to perform specific tasks, such as in-order, pre-order, and post-order traversals of the BST.(CO 106.5)