## Data Structure Using C/C++ (SYLLABUS)

Duration: 50 Hrs prerequest: be strong in basic c programming

Course Fee: Rs. 8,500/- G-Pay: 98940 83890

| S.No | Table of Contents   | Remarks |
|------|---|---------|
| 1.   | Introduction to Data Structures                                 |         |
| 2.   | Array: Array Initialization                                     |         |
|      | Find array size dynamically                                     |         |
|      | Dynamic insert values to array                                  |         |
|      | Display unique array values                                     |         |
|      | Delete particular values in an array                            |         |
|      | Search element in an array                                      |         |
|      | Find index of value in an array Find value of index in an array |         |
| 3    | Recursive Function  |         |
| 4.   | Pointers var creation,  |         |
|      | Pointer vs variable,  |         |
|      | Pointer vs Array  |         |
|      | Pointer vs object   |         |
|      | Pointer Increment   |         |
|      | Pointer object creation,  |         |
|      | New memory allocation,  |         |
|      | Delete memory allocation.                                       |         |
|      | Call by value   |         |
|      | Call by reference(address)                                      |         |
| 5.   | Sorting:  |         |
|      | - Selection Sort  |         |
|      | - Bubble Sort   |         |
|      | - Insertion sort  |         |
|      | - Quick sort  |         |
|      | - Merge Sort  |         |
|      | - Shell sort  |         |
| 6.   | Searching:  |         |
|      | - Linear Search   |         |
|      | - Binary Search   |         |

| 7.  | Stack: LIFO                            |  |
|-----|--|--|
|     | Queue: FIFO                            |  |
|     | ( both array & pointer implementation) |  |
| 8.  | Linked List: (insert, delete, search)  |  |
|     | -Singly Linked List                    |  |
|     | -Double Linked List                    |  |
|     | -Circular Linked List                  |  |
| 9.  | Trees                                  |  |
|     | - Tree representation                  |  |
|     | - Binary Tree Properties               |  |
|     | - Binary Tree Traversals               |  |
|     | - Implementation of Binary Tree        |  |
| 10. | Mini Project                           |  |
|     |  |  |