CL-2001
Data Structures
Lab # 2

Objectives:

- Pointers
- Pointer to Function
- DMA
- Abstract Data Type

Note: Carefully read the following instructions (*Each instruction contains a weightage*)

1. There must be a block of comments at start of every question's code by students; the block should contain brief description about functionality of code.
2. Comment on every function and about its functionality.
3. Mention comments where necessary such as comments with variables, loop, classes etc to increase code understandability.
4. Use understandable name of variables.
5. Proper indentation of code is essential.
6. Write a code in C++ language.
7. Make a Microsoft Word file and paste all of your C++ code with all possible screenshots of every task **outputs in Microsoft Word and submit word file. Do not submit .cpp file.**
8. First think about statement problems and then write/draw your logic on copy.
9. After copy pencil work, code the problem statement on MS Studio C++ compiler.
10. At the end when you done your tasks, attached C++ created files in MS word file and make your submission on Google Classroom. (Make sure your submission is completed).
11. Please submit your file in this format **20F1234_L1**.
12. Do not submit your assignment after deadline. Late and email submission is not accepted.
13. Do not copy code from any source otherwise you will be penalized with negative marks.

Problem: 1 |

Implement the following operations of List ADT by using array class

- Constructors (default, parameterize, copy) & destructor
- void insertElement (int X)
- void insertElementAt (int X, int pos)
- void printList ( )
- int searchElement (int X) //apply binary search with recursion
- bool deleteElement (int X)
- bool deleteElementAtAndShift (int X, int pos)
- bool isFull ( )
- bool isEmpty ( )
- int length ( )
- void reverseList ( )
- void emptyList ( )
- void copyList (...)
- void sort();
- bool compareList(ListObj); return true if same, false if not same elements
- Also write a driver (main) program to test your code (provide menu for all operations).

Best of luck