

## **ASSIGNMENTS SPECIFICATION**

### **OBJECTIVES FOR STUDENTS**

1. Construct or develop a medium to complex size program by applying a number of data structure concepts in C++ programming language.
2. Solve problem in group which the group are required to prepare report to document the project output and present the output in the class

### **TASK FOR STUDENTS**

1. Form a group with 2-3 members in the group.
2. Your group will be assigned with one of the following topics. You need to apply the data structure concept in the case study assigned to your group.
3. Assignment 1: Apply data structure operations (Sorting and Searching).
4. Assignment 2: Apply linked list concept.
5. Mini Project: Apply either stack or queue in the case study.

### **SUGGESTED TOPIC:**

1. **Internship Logbook System**
2. **Loan Book System**
3. Internship Management System
4. Meeting Room Booking System
5. Final Year Project Management System
6. Training Record Management System
7. Hostel Management System

You are required to add at least five functionality to the system.

## **ASSIGNMENT 1**

### **Techniques Used Sorting and Searching**

1. Identify attributes and member functions suitable for each case and draw the class diagram. Draw use case diagram that shows the user and functionality of the system.
2. Write the implementation function for the member function.
  - a. Write main() program that will declare an array of class and read information about the instance from data file.
  - b. Implement all member functions through the elements of the array.
3. Choose any sorting technique and searching technique. Sort the array based on certain key and perform searching based on certain criteria. The system must be used at least 2 users and you need to provide menu for the users. Use data file concept to get the data for your system.

## **ASSIGNMENT 2**

### **Linked List**

Modify assignment 1 by implementing linked list, instead of using array. Create a linked list that consists of the nodes for every instance created from the class. Implement link list operation such as add, delete, search. Provide menu for the user to choose the operation she likes to perform.

## **INSTRUCTIONS FOR THE REPORT AND PRESENTATION (Assignment 1 and Assignment 2)**

To get full mark, you must make sure that your program follows the specification, can run, has data file, and has complete documentation.

### **Provide Report that consists of:**

1. Objective
2. Synopsis (Example: Introduction, system functionality)
3. Appendix (Data Files, Source Codes)

### **Presentation:**

1. Contents of the slide:
  - a. Introduction and design of the program.
  - b. Demo the program.