B. Tech CSE 3rd Semester

CS-351 Data Structures (Practical) (Online)

MM: 10   **Dated: 01.09.2024**

1. Write a complete program to implement students' Examination Records of an institute. Use doubly linked list for the implementation. You can use C/C++ language. The attributes of a record is as follows.

   - Enrollment Number/ Roll Number (Primary Key)
   - Students Name
   - Father's Name
   - Date of Birth
   - Semester and year of admission
   - Subject/Scheme of study

   The attribute of Subject of a Semester

   - Semester and year

   - Subject Code (Should be received from database of scheme)

   - Subject Title (Should be received from database of scheme)

   - Maximum Marks for Sessional (Should be received from database of scheme)

   - Maximum Marks for Theory (Should be received from database of scheme)

   - Marks awarded in Sessional of theory/Practical

   - Marks awarded in Theory/Practical

   (A) This program should perform the following operations. Design an Input panel to manage database system.
   - Add a scheme in Database
   - Delete a scheme/subject from Scheme Database
   - Update a scheme/subject in Database
   - Print report card of a students
   - Print report of results complete for a semester
   - List record/result (Random access) and also provide the provision to sort the list on any desired field e.g., on Name, Enrollment Number, etc.

   (B) Measure the performance of the your system on which this code is implemented by measuring the following

   (a) Number of nodes possible to create on the machine
   (b) Time required to search a required
   (c) Time required to delete a required

(d) Time required to insert a required

(C) Plot a graph for number of nodes vs. Time required to create list of given number of nodes.
(D) Further program should maintain database in files (scheme file), students record/information file. Processed result in separate file.

Submit report online at the googleclass today on or before 12 midnight and hard copy of same tomorrow at 9.30 AM.