

**MCA-1 Programming Lab Assignment Set 3**  
**C Programming Assignments: Structures & Files**

- 1) Define a structure to store the following information of a student: name roll number, marks of five different subjects. Write a program to read information about more than 100 students, find the average marks and total marks of each of the students and sort the student names based on the total marks obtained.
- 2) The time is specified by hours,min, sec. Write a program to add two time values given at the time of execution. Use function for this addition and return the value to the called function.
- 3) Create a structure to specify data of customers in a bank. The data to be stored is: Account number, Name, Balance in account. Assume there can be more than 100 customers in the bank.
  - a) Write a function to print the account number and name of each customer with a balance below Rs. 1000.
  - b) Consider that a customer request for withdrawal or deposit is given in the form: Acct. no, amount, code (1 for deposit, 0 for withdrawal) and write a program to deposit and withdraw the amount from the specified account and give a message **"The balance is insufficient for the specified withdrawal"** if balance is below the threshold.
- 4) Write a program that compares two given dates. Use structure **"Date"** to store date in **dd/mm/yyyy** format. If the dates are equal then display the message as **"Equal"** otherwise **"Unequal"**.
- 5) Write a menu driven program that depicts the working of a library. The menu options should be:
  - a) Add book information
  - b) Display book information
  - c) List all books of given author
  - d) List the title of specified book
  - e) List the count of books in the library
  - f) List the books in the order of accession number
  - g) ExitCreate a structure called **'library'** to store accession number, title of the book, author name, price of the book, and flag indicating whether book is issued or not. Consider that there are more than 1000 records.
- 6) Consider that a large binary matrix is stored in a file. Each line is a row of the matrix. The dimensions of the matrix are not known in advance. Write a program to read the matrix into a dynamic array, find its dimension, computer row-sums and create a new file to store row-no and the corresponding row sum.

- 7) Write a program to read a text file, convert each character to uppercase and write it to another file.
- 8) Write a program to add the contents of one file at the end of another file.
- 9) Write a program to perform the following operations on a binary mode file storing student information(name, roll, marks, DOB):
  - a) create the file
  - b) add a new record
  - c) delete a record specified by the roll number
  - d) modify the marks of each student by adding grace marks of 10 if the original marks is less than 50 and greater than 40.