Assignment No. – ☐
Structure and Union

Write a program in 'C' to perform the following tasks:

1. Use a menu driven application program to execute the following:

   i) Create a structure STD_INFO for storing data of one student with ROLL_NO, NAME, BRANCH, CGPA and GENDER. Display the size of individual members and the size of the structure STD_INFO.

   ii) Create a union STD_UN with members same as STD_INFO and display the size of STD_UN.

2. Define a structure EMPLOYEE for receiving and displaying information like EID, NAME, GENDER, SALARY, and ADDRESS of an employee. The ADDRESS should be stored as (CITY, STATE, PINCODE) using *nested structure*.

3. Define a structure STUDENT and insert data for ROLL_NO, NAME, and three MARKS. Calculate the average marks of a student. (Use *array within structure* concept).

4. Use the data of **'Q. 3'** and find the average marks of five students. (Use *array of structure* concept).

5. Create a structure COMPLEX having two members namely REAL and IMAGINARY. Design functions namely add( ), subtract( ), multiply( ), divide( ) for performing respective operation over complex numbers. (Use a *menu driven* program).

6. Create a structure BOOK with members ISBN, TITLE, AUTHOR, PRICE and PUBLISHER. Take the input for five books and arrange all the book information in ascending order according to the ISBN.

7. Swap the values of two structure variables by passing pointers to a user-defined function.

8. Define a structure CRICKETER with members ― NAME, AGE, COUNTRY, MATCHES, RUNS, WICKETS, and CATCHES. Enter the data for five players and do the following:

   i) Print the NAME, COUNTRY and BATTING AVERAGE of the player who has the highest batting average.

   ii) Print the NAME, COUNTRY and BOWLING AVERAGE of the player who has taken the highest number of wickets.

   iii) Print the NAME and CATCHES of the player whose number of catches per match is the lowest.

   iv) Print the NAME and COUNTRY of three highest wicket taking players.

   v) Print the NAME and RUNS of the player who has scored more than 100.

   vi) List the players who have not yet taken any catches.

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Signature of the Teacher