Assignment – 10

The objective of this assignment is to learn how we can use Structures and Unions and also how-to dynamic memory allocation happen in C Program.

1. Write a program to store and print the roll no., name, age and marks of a student using structures.
2. Write a program to store the roll no. (starting from 1), name and age of 5 students and then print the details of the student with roll no. 2.
3. Write a program to store and print the roll no., name, age, address and marks of 15 students using structure.
4. Write a program to add two distances in inch-feet using structure. The values of the distances is to be taken from the user.
5. Enter the marks of 5 students in Chemistry, Mathematics and Physics (each out of 100) using a structure named Marks having elements roll no., name, chem_marks, maths_marks and phy_marks and then display the percentage of each student.
6. Write a program to add, subtract and multiply two complex numbers using structures to function.
7. Define a union with the following three members: roll no, name and total marks of student. Write a c program to read and display the details of a student.
8. C Program to Find Largest Number from an array. Array must be declared using Dynamic Memory Allocation.

Practice:

1. Write a structure to store the roll no., name, age (between 11 to 14) and address of students (more than 10). Store the information of the students.
   1-Write a function to print the names of all the students having age 14.
   2-Write another function to print the names of all the students having even roll no. 3-Write another function to display the details of the student whose roll no is given (i.e. roll no. entered by the user).
2. Write a structure to store the name, account number and balance of customers (more than 10) and store their information.
   1- Write a function to print the names of all the customers having balance less than $200. 2-Write a function to add $100 in the balance of all the customers having more than $1000 in their balance and then print the incremented value of their balance.
3. Write a program to compare two dates entered by user. Make a structure named Date to store the elements day, month and year to store the dates. If the dates are equal, display "Dates are equal" otherwise display "Dates are not equal".
4. Write a structure to store the names, salary and hours of work per day of 10 employees in a company. Write a program to increase the salary depending on the number of hours of work per day as follows and then print the name of all the employees along with their final salaries.

Hours of work per day	8	10	>=12
Increase in salary	$50	$100	$150

5. Let us work on the menu of a library. Create a structure containing book information like accession number, name of author, book title and flag to know whether book is issued or not. Create a menu in which the following can be done.

   1 - Display book information
   2 - Add a new book
   3 - Display all the books in the library of a particular author
   4 - Display the number of books of a particular title
   5 - Display the total number of books in the library
   6 - Issue a book

   (If we issue a book, then its number gets decreased by 1 and if we add a book, its number gets increased by 1)