Lab 9

1. Create a structure to store data on students: Roll number, Name, Department, Course, Year of joining. Enter data for 5 students – use array of structures.
    a. Print names of all students who joined in a particular year.
    b. Print the data of a student whose roll number is given.
2. To store date use structure called st_date, that contains three members namely date (int), month (string of size 4 including NULL) and year (int).
    a. Create two elements of this datatype.
    b. Write a program that compares two given dates. If the dates are equal then display message as "Equal" otherwise "Unequal".
3. Write a program to store identity card numbers – either adhaar card number (string of size 12) or passport number (string of size 10) using union. Create 2 elements of this union and ask users to choose id details they want to enter, and store them in these two elements. Display the contents of the elements.
4. Write a program to copy
    a. All the contents of an existing text file into a new text file.
    b. Only the lowercase characters of an existing text file into a new text file.
    c. Only the numeric characters of an existing text file into a new text file.
    d. All the contents of an existing file into a new file, and while copying, convert all the uppercase letters to lowercase and lowercase letters to uppercase.
5. Write a program to append the contents of an existing text file into another existing text file.
6. Write a C program to use macro definitions for the following:
    a. To test whether a character entered is a small case letter or not.
    b. To test whether a character entered is a upper case letter or not.
    c. To test whether a character is an alphabet or not.
    d. To obtain the bigger of two numbers.
7. Write macro definitions with arguments for calculation of area and perimeter of a triangle, a square and a circle. Store these macro definitions in a file called “areaperi.h”. Include this file in your program, and call the macro definitions for calculating area and perimeter for different squares, triangles, and circles.