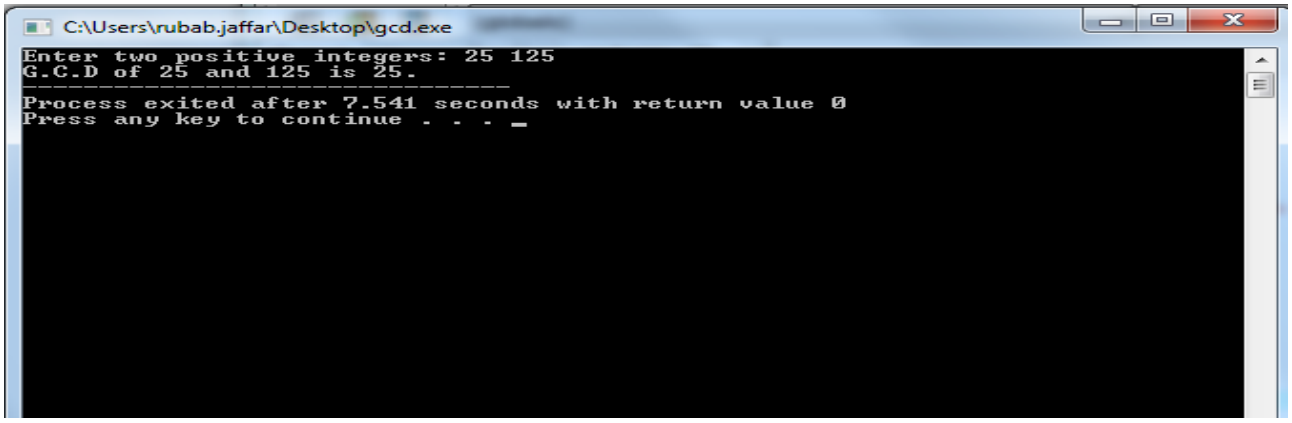
Exercises

Task 1:

Write a C program to find recursively the gcd (greatest common divisor) of 2 numbers passed as arguments.

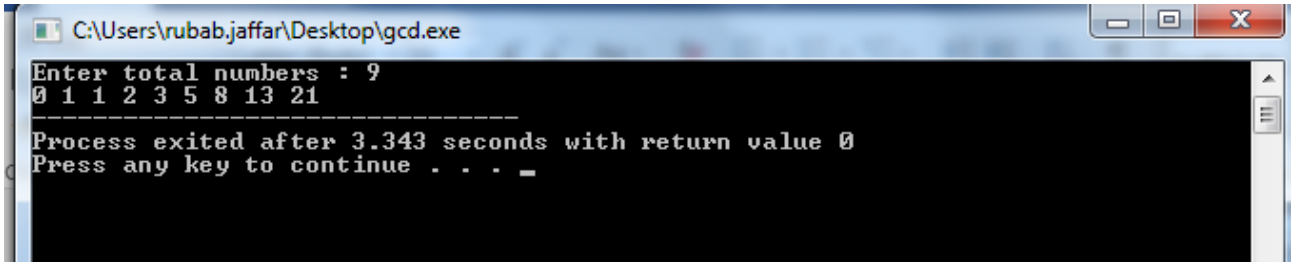


Task 2:

Write a C Program to calculate power using recursion.

Task 3:

Write a C program to print Fibonacci series using recursion.



Task 4:

Suppose you have to develop a distance calculator that take two distances (in the inch-feet system) from the user, add them and display the result on the screen. You have to write a C program to implement such type of distance calculator.

Note: Solve it by using structures.

```
Enter 1st distance
Enter feet: 23
Enter inch: 8.6

Enter 2nd distance
Enter feet: 34
Enter inch: 2.4

Sum of distances = 57'-11.0"
```

Task 5:

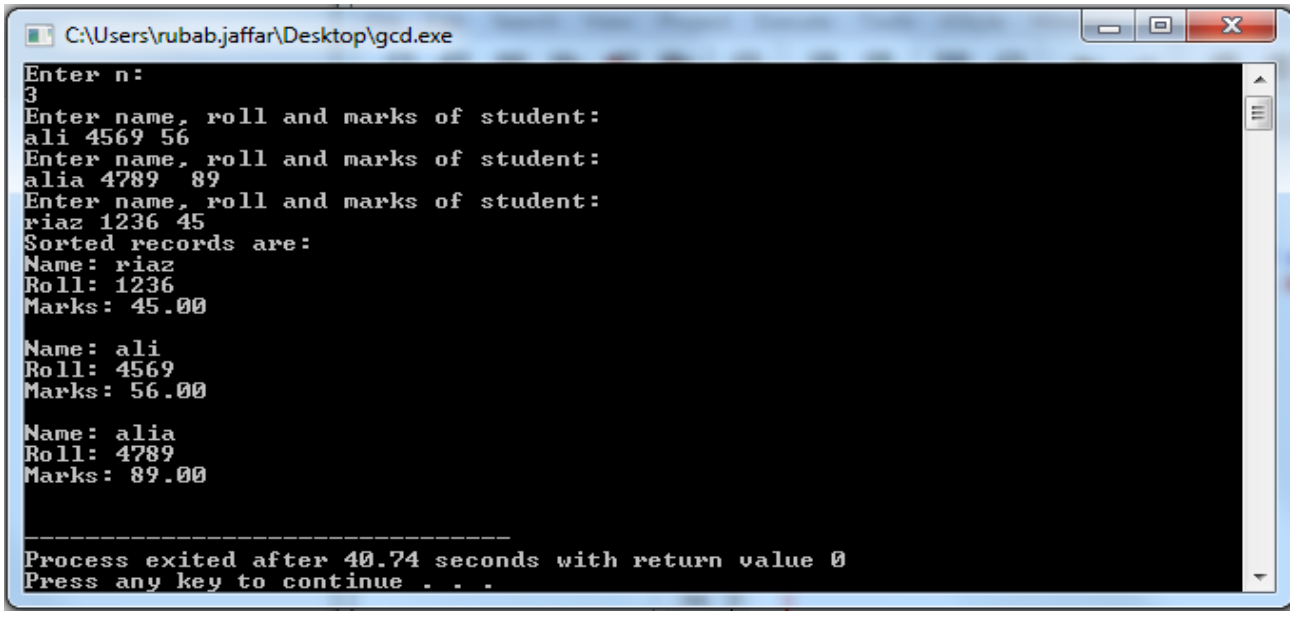
Write a C program that allows user to take two complex numbers as structures and add them by creating a user-defined function.

```
For 1st complex number
Enter the real and imaginary parts: 2.1
-2.3

For 2nd complex number
Enter the real and imaginary parts: 5.6
23.2
Sum = 7.7 + 20.9i
```

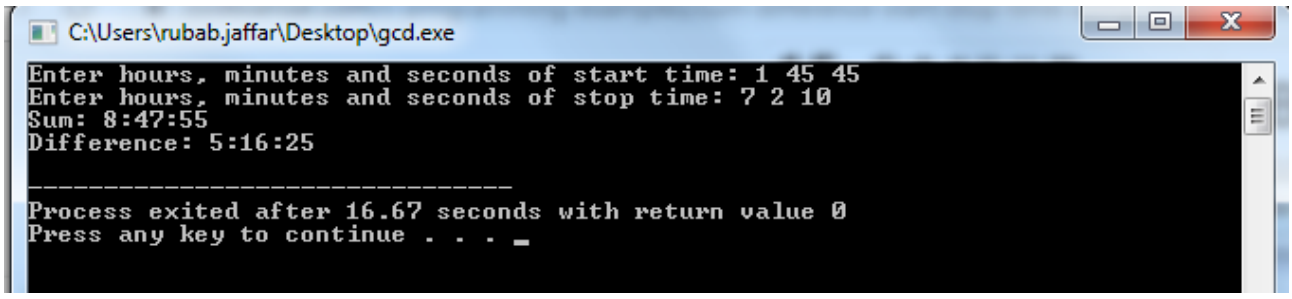
Task 6:

Write a C program to read records of n different students in structure having member name, roll and marks, and displaying the student details which are sorted by marks in ascending order.



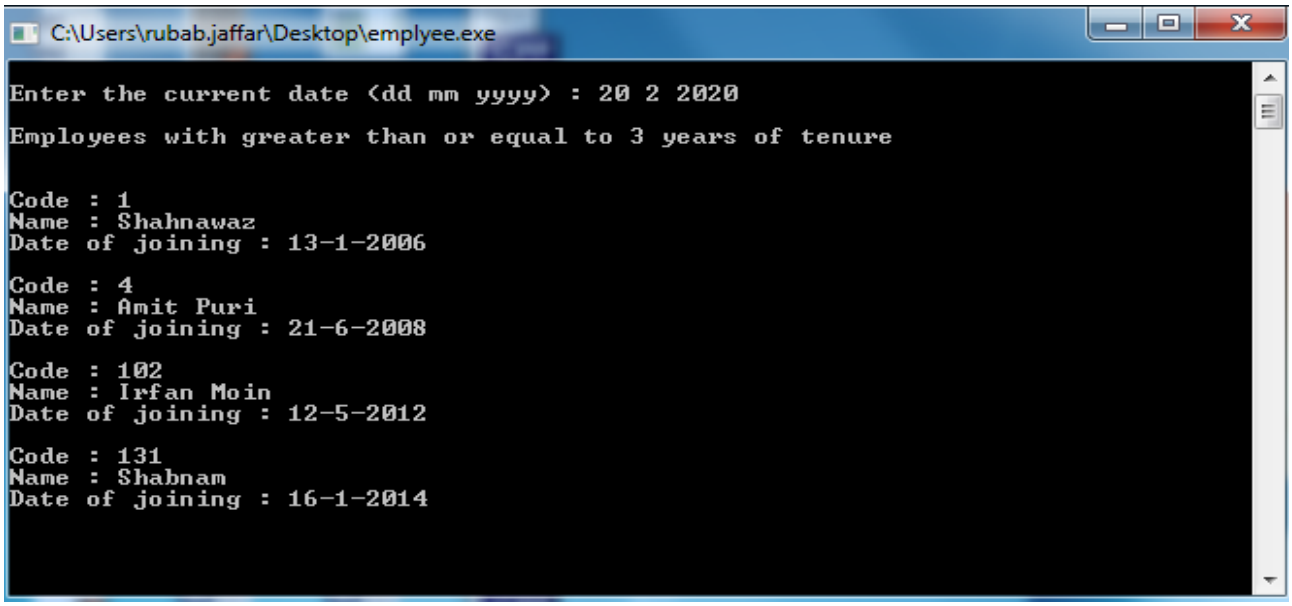
Task 7:

Create a structure TIME containing hour, minutes and seconds as its member. Write a program that uses this structure to input start time and stop time in main(). Pass this structure to a function that calculates the sum and difference of start time and stop time. Display the sum and difference from main().



Task 8:

Employee is a structure that contains data like employee code, name, and joining date. Create an array of the employee structure, and then enter some data into it. The programme then asks the user to input the current date and display the list of the employees whose tenure, as of the present date, is three or more years.



Task 9:

Consider there are two structures Employee (depended structure) and another structure called Organisation(Outer structure). The structure Organization has the data members like organisation_name,organisation_number. The Employee structure is nested inside the structure Organization and it has the data members like employee_id, name, salary.

org.emp.employee_id;
org.emp.name;
org.emp.salary;
org.organisation_name;
org.organisation_number;
Here, org is the structure variable of the outer structure Organisation and emp is the structure variable of the inner structure Employee.

Output the following data using above structure

The size of structure organisation : 123

Organisation Name : NU-Fast

Organisation Number : NUFAST123ABC

Employee id : 127

Employee name : ALI

Employee Salary : 110000

Task 10:

You need to implement the the following 2 struct.

- struct Student{}; Student contains attribute StudentId, FirstName, LastName, cellno, email.
- struct Register{}; Register contains attribute CourseId, CourseName.

Now you need to inherit the Register struct in Student struct. It means that student struct holds the variable of Register struct variable. After that you need to take input for 5 students and then print them [Hint: Declare array of struct Student std[5]; for 5 students]