Structure Basics practice problems

1. Create a structure named student that has name, roll and mark in 5 subjects as members. Write a program using structure to read and display the data mentored by the user.
2. Define a structure data type called time_struct containing three members hour, minute and second. Develop a program that would assign values to the individual member and display the time in the following format:

   16:40:51
3. Modify the above program such that a function is used to input values to the members and another function to display time.
4. Create a structure to add and subtract two complex numbers using structures.
5. 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.
6. Write a program to store and print the roll no., name, age, address and marks of 15 students using structure.
7. Write a program to add two distances in inch-feet using structure. The values of the distances is to be taken from the user.
8. 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.

STRUCTURES Practice questions part 2

1. Define a structure that can hold the hours, minutes and seconds (all integers). Read a time value and display in the following format

   For example if input is : 1 12 23

   The output should be 1 hour: 12 minutes: 23seconds

The program should display an error message if hour, minute or second is having invalid values

2. Define a structure date that can hold day, month and year (all integers). Read data into it and display in the following format

   For example if input is : 12 12 1990

   The output should be 12 December 1990

3. Define a structure cone that can hold the base radius and height. Read the radius and height value for a cone into the structure variable. Calculate and print the volume.
4. Define a structure citizen that can hold the citizen id (integer), age of a person. Read the data for a person and print whether the person is a minor(age<18), major(age: 19 to 60) or senior citizen (age>60)

5. Define a structure **country** having following members:
   - Name(string),
   - Population(double)
   - literacy rate (float array, that can store literacy rates for 5 states),
   - average literacy rate

   Read input data for 2 countries. For each country, read name, population, literacy rate of 5 states. Display the name of country with highest literacy rate.

6. Define a structure product having following members:
   Name(string),
   Model number(double)
   price (float array, that can store the price for the product in 3 cities)
   average price

   Read input data for 2 products. Read the details for 2 products and display the name of the product having the least average price.

7. A structure **student**can hold the following details of a student- Roll number(int), marks of 2 subjects, total marks. Read the roll number and 2 marks for n students
   a. calculate the total mark for each student and display the class average
   b. Display the total marks scored by all the students for subject1
   c. Read the roll number of a student and display the details of that student