# 4. Programs using User-defined types.

*CO1: Impart the skills needed for Object – oriented programming and Console applications development*

1. Create a structure called "Student" with members name, age, and total marks. Write a C++ program to input data for two students, display their information, and find the average of total marks.

2. Define a structure named Time with members hours, minutes, and seconds. Write a C++ program to input two times, add them, and display the result in proper time format.

3. Write a program to create a structure salary,with the following information
   Name – 20 character
   Department  - 20 character
   Basic_pay – float type
   Allowance - float type
   Using salary structure, declare an employee array with 5 elements and write a program to read the information and calculate the gross pay (Basic pay + Allowance) and display the output.

4. Write a structure to store the names, hourly rate and number of hours worked by employees in a company. Write a program to calculate the salary depending on the following condition, pay the hourly rate for the hours up to 40 and 1.5 times the hourly rate for all hours worked above 40 hours.Enter data for 'n' employees and Print the name of all the employees along with their final salaries.

5. Write a structure to store the roll no., name, age (11 to 14) and address of students (more than 10). Store the information of the students.
   a.  Write a function to print the names of all the students having age 14.
   b.  Write another function to print the names of all the students having even roll no.
   c.  Write another function to display the details of the student whose roll no is given (i.e. roll no. entered by the user).

6. Create a structure named Complex to represent a complex number with real and imaginary parts. Write a C++ program to add and multiply two complex numbers.