

CS143-Introduction to Problem Solving and Programming

Structures and Enumerations

1. Provide the definition of each of the following structures:
 - a. Structure time containing integers hours, minutes, and seconds.
 - b. A structure called month that contains character arrays monthName[30], dayOfWeek[20], and an integer variable numberOfDays.
 - c. Structure employee that contains arrays firstName[20], lastName[20], and address[30], and a variable monthOfJoining of type struct month from part b.

2. Given the following structure and variable definitions, write an expression that can be used to access the structure members in each of the following parts:
 - a. Member lastName of structure customerRecord.
 - b. Member firstName of structure customerRecord.
 - c. Member customerNumber of structure customerRecord.
 - d. Member phoneNumber of member personal of structure customerRecord.
 - e. Member city of member personal of structure customerRecord.

```
struct customer{
    char lastName[15];
    char firstName[15];
    int customerNumber;

    struct {
        char phoneNumber[11];
        char address [50];
        char city[15];
        char state[3];
        char zipCode[6];
    }personal;
} customerRecord;
```

3. Define a structure value with members int a, int b, and float c. Write a program that defines two variables value1 and value 2, of type struct value. Your program should compare member a in value1 and value2, and print whether they are equal or not.

4. Define a struct that stores the information about students (name, age, GPA, semester). Write a function that accepts an array of students and returns the number of students with GPA greater than or equal 3.4. Also, write a main function that reads in the details of n students and stores them in an array that is then passed to the function described above.

5. Write a program that uses enumerations to define days of the week. The program should then use the enumerations defined to identify the weekend according to the day number entered by the user.