

Assignment-8

1. Define a structure that can describe a hotel.

CODE:

```
Assignment > 08 > C 01_Hotel_Systems.c > main()
1  #include <stdio.h>
2  struct hotel{
3      char name[20];
4      char address[50];
5      int grade;
6      float averageRoomCharge;
7      int roomNumber;
8  };
9  int main(){
10     int grade, i, charge;
11     struct hotel customer[5]={ {"La Meridian","Nikunjo,Dhaka",4,8500,50},
12                                {"Mariot","Jamuna,Dhaka",5,10000,100},
13                                {"Sheraton","Karwan Bajar",5,12000,50},
14                                {"Amari","Gulshan-2,Dhaka",4,6000,200},
15                                {"Lakeshore","Banani,Dhaka",3,5500,150} };
16
17     printf("Enter a Grade Given by customer to find customers details: \n");
18     scanf("%d",&grade);
19     for(i=0;i<5;i++){
20         if(grade==customer[i].grade){
21             printf("Customer[%d] Details: Name- %s, Address- %s, Grade- %d, Room Number- %d\n",i+1, customer[i].name,
22                   customer[i].address,customer[i].grade, customer[i].roomNumber);
23         }
24     }
25     printf("Enter a Room Charge: ");
26     scanf("%d",&charge);
27     for(i=0;i<5;i++){
28         if(charge >= customer[i].averageRoomCharge){
29             printf("Avarage room cost less then the given number is %f. Customer[%d] Name: %s\n",
30                   customer[i].averageRoomCharge,i+1,customer[i].name);
31         }
32     }
33     return 0;
34 }
```

OUTPUT:

```
Enter a Grade Given by customer to find customers details:
4
Customer[1] Details: Name- La Meridian, Address- Nikunjo,Dhaka, Grade- 4, Room Number- 50
Customer[4] Details: Name- Amari, Address- Gulshan-2,Dhaka, Grade- 4, Room Number- 200
Enter a Room Charge: 7000
Avarage room cost less then the given number is 6000.000000. Customer[4] Name: Amari
Avarage room cost less then the given number is 5500.000000. Customer[5] Name: Lakeshore
PS E:\Code\CSE 4192> █
```

2. Write a Program to Calculate Difference Between Two Time Periods using structure.

CODE:

```
Assignment > 08 > C 02_Time_Count.c > main()
1  #include <stdio.h>
2
3  struct time {
4      int hours;
5      int minutes;
6      int seconds;
7      int result;
8  } d1, d2, result;
9
10 int main()
11 {
12     // input - the start time
13     printf("Enter the start time.\n");
14     printf("Enter hours minutes and seconds : \n");
15     scanf("%d %d %d", &d1.hours, &d1.minutes, &d1.seconds);
16     // input - the stop time
17     printf("\nEnter the stop time.\n");
18     printf("Enter hours minutes and seconds : \n");
19     scanf("%d %d %d", &d2.hours, &d2.minutes, &d2.seconds);
20     // adding times
21     result.hours = d1.hours + d2.hours;
22     result.minutes = d1.minutes + d2.minutes;
23     result.seconds = d1.seconds + d2.seconds;
24     // time difference
25     while (result.minutes >= 60){
26         result.minutes = result.minutes - 60;
27         while (result.seconds >= 60){
28             result.seconds = result.seconds - 60;
29             ++result.minutes;
30         }
31         ++result.hours;
32     }
33     printf("\nTime Difference: %d:%d:%d - %d:%d:%d = %d:%d:%d ",d1.hours,d1.minutes , d1.seconds,
34           d2.hours, d2.minutes, d2.seconds, result.hours, result.minutes, result.seconds );
35     return 0;
36 }
```

OUTPUT:

```
Enter the start time
Enter hours minutes and seconds :
1 32 50

Enter the stop time
Enter hours minutes and seconds :
1 40 20

Time Difference: 1:32:50 - 1:40:20 = 3:13:10
PS E:\Code\CSE 4192> █
```

LAB WORK-8

1. Write a C program to find difference between feet and inch.

CODE:

```
Class > Class-8 > C feet-inch.c > main()
1  #include <stdio.h>
2
3  struct Distance {
4      int feet;
5      float inch;
6  } d1, d2, result;
7
8  int main() {
9      // take first distance input
10     printf("Enter 1st distance\n");
11     printf("Enter feet: ");
12     scanf("%d", &d1.feet);
13     printf("Enter inch: ");
14     scanf("%f", &d1.inch);
15
16     // take second distance input
17     printf("\nEnter 2nd distance\n");
18     printf("Enter feet: ");
19     scanf("%d", &d2.feet);
20     printf("Enter inch: ");
21     scanf("%f", &d2.inch);
22
23     // adding distances
24     result.feet = d1.feet + d2.feet;
25     result.inch = d1.inch + d2.inch;
26
27     // convert inches to feet if greater than 12
28     while (result.inch >= 12.0) {
29         result.inch = result.inch - 12.0;
30         ++result.feet;
31     }
32     printf("\nSum of distances = %d'-%.1f\"", result.feet, result.inch);
33     return 0;
34 }
```

OUTPUT:

```
Enter 1st distance
Enter feet: 5
Enter inch: 6
```

```
Enter 2nd distance
Enter feet: 3
Enter inch: 7
```

```
Sum of distances = 9'-1.0"
PS E:\Code\CSE 4192>
```

2. Write a C program to take Student information from the user and show output using structure.

CODE:

```
Class > Class-8 > C Store 10 Student Data information.c > main()
1  #include<stdio.h>
2  #include<string.h>
3  struct studentInformation {
4      char fName[20];
5      int id;
6      int age;
7      int cgpa;
8  }stud[2];
9
10 int main(){
11     int i;
12     printf("2 Student Information.\n");
13     for(i=0;i<2;++i){
14         printf("Enter Student[%d] ID Number: ",i+1);
15         getchar();
16         scanf("%d",&stud[i].id);
17         getchar();
18         printf("Enter Student[%d] First Name: ",i+1);
19         scanf("%s", stud[i].fName);
20         scanf("%[^\n]", &stud[i].fName);
21         printf("Enter Student[%d] age: ",i+1);
22         scanf("%d",&stud[i].age);
23         printf("\nEnter Student[%d] CGPA: ",i+1);
24         scanf("%.2f",&stud[i].cgpa);
25     }
26     printf("Display provided student information.\n");
27     for(i=0;i<2;++i){
28         if(stud[i].cgpa>3.5){
29             printf("Student ID: %d \n",stud[i].id);
30             //puts(stud[i].fName);
31             printf("Student Age: %d \n",stud[i].age);
32             printf("Student Age: %.2f \n",stud[i].cgpa);
33         }
34     }
35     return 0;
36 }
37
```