Lab 7

Theory:

Structure:

A structure is a key word that create user defined data type in C/C++. A structure creates a data type that can be used to group items of possibly different types into a single type. “struct” keyword is used to create a structure. Structure members are accessed using dot operator. Like otherprimitive data types, we can create an array of structure.

Methodology:

Fundamentally the program which we did in the lab error free code. The fundamental goal of the present lab was to get the essential idea of structure.

Objectives:

1. To be familiar with syntax and structure of C-programming.
2. To learn problem solving techniques using C.
3. To learn the basics of concept of structure.

Programs:

- Find the output of the following programs.

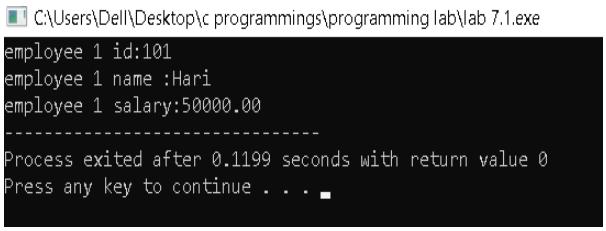
Code:

// Following codes are written and compiled in DevC++

Program 1:

```
#include<stdio.h>
#include<string.h>
struct employee
{
        int id;
        char name[50];
        float salary;
}e1;
int main()
{
        e1.id=101;
        strcpy(e1.name,"Hari");
        e1.salary=50000;
        printf("employee 1 id:%d\n",e1.id);
        printf("employee 1
        name:%s\n",e1.name);
        printf("employee 1
        salary:%.2f",e1.salary);return 0;
}
```

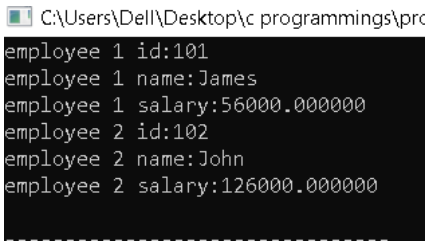
Output:



Program No. 2

```
#include<stdio.h>
#include<string.h>
struct employee
{
        int id;
        char name [50];
        float salary;
}e1,e2;
int main(){
        e1.id=101;
        strcpy(e1.name,"James");
        e1.salary=56000;
        e2.id=102;
        strcpy(e2.name,"John");
        e2.salary=126000;
        printf("employee 1 id:%d\n",e1.id);
        printf("employee 1
name:%s\n",e1.name);
        printf("employee 1
salary:%f\n",e1.salary);
        printf("employee 2 id:%d\n",e2.id);
        printf("employee 2
name:%s\n",e2.name);
        printf("employee 2
salary:%f\n",e2.salary);return 0;
}
```

Output:

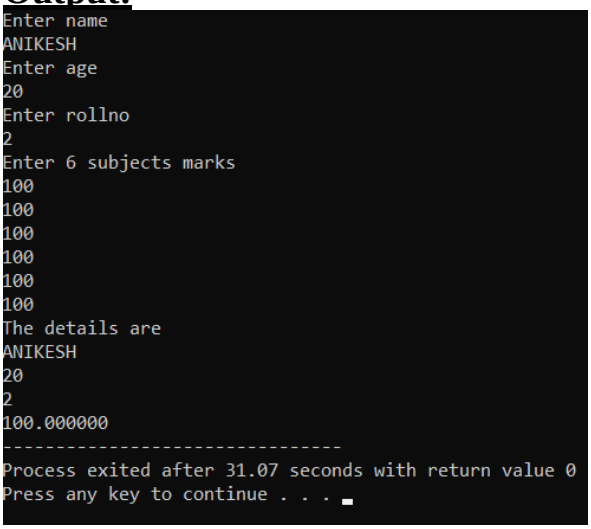


Program No. 3

```
#include<stdio.h>
#include<conio.h>
struct student{
        char  name[30];
        int age;
        int  rollno; float
        marks[6];
};
int main(){
        struct student s;
        int i;
        float avg,sum=0;
        printf("Enter name\n");
        scanf("%s",&s.name);
        printf("Enter age\n");
        scanf("%d",&s.age);
        printf("Enter rollno\n");
        scanf("%d",&s.rollno);
        printf("Enter 6 subjects marks\n");
        for(i=0;i<6;i++){
                scanf("%f",&s.marks[i]);
                sum=sum+s.marks[i];
                avg=sum/6.0;
```

```
        }
        printf("The details are\n");
        printf("%s\n%d\n%d\n%f",s.name,s.
age,s.rollno,avg);
        getch();
}
```

Output:

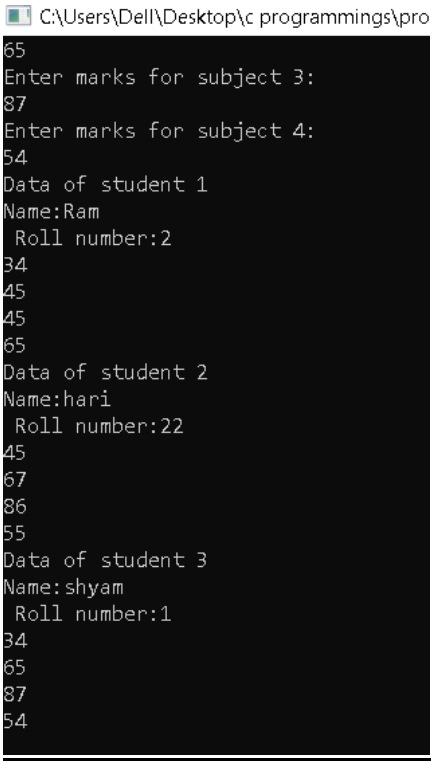


Program No. 4

```
#include<stdio.h>
struct student{
        char  name[20];
        int rollno;
        int submarks[4];
 };
 int main(){
        int i,j;
        struct student stuarr[3];
        for(i=0;i<3;i++){
                printf("Enter data for
student%d\n",i+1);
                printf("Enter name:\n");
                scanf("%s",stuarr[i].name);
                printf("Enter roll
                number:\n");

        scanf("%d",&stuarr[i].rollno);
                for(j=0;j<4;j++){
                        printf("Enter marks
for subject %d:\n",j+1);

         scanf("%d",&stuarr[i].submarks[j]);
                }

        }
        for(i=0;i<3;i++){
                        printf("Data of student
%d\n",i+1);
                printf("Name:%s\n Roll
```

```
number:%d\n",stuarr[i].name,st
uarr[i].rollno);
                for(j=0;j<4;j++)

        printf("%d\n",stuarr[i].s
        ubmarks[j])
;
        }
}
```

Output:



Discussion and conclusion:

From this lab we learned about structure and its uses. It was clear how to use structure and when to use it.