**Practical-2**

**1.** **Create a structure Student in C with student name, student roll number and student address as its data members. Create the variable of type student and print the values.**

Aim: To create structure to store different datatypes and displaying it.

Theory: In this practical we get to know that we can store different datatypes in structures.

Program/Code:

#include <stdio.h>

struct student

{

    char student\_name[100];

    int student\_rollno;

    char student\_address[100];

};

void print\_info(struct student s1)

{

    printf("Name of student is= %s \n",s1.student\_name);

    printf("Roll no of student = %d \n",s1.student\_rollno);

    printf("The address of student is = %s \n",s1.student\_address);

}

void main()

{

    struct student s;

    printf("Enter the name of the student=\n");

    scanf("%s",s.student\_name);

    printf("Enter the roll no of student=\n");

    scanf("%d",&s.student\_rollno);

    printf("Enter the address of the student=\n");

    scanf("%s",s.student\_address);

    print\_info(s);

}

Output:

A computer screen with white text and black background

AI-generated content may be incorrect.

Time Complexity:

O(1)

**2.** **Modify the above program to implement arrays of structure. Create an array of 5 students and print their values.**

Aim: To show the implementation of arrays of structure.

Theory: In this practical we get to know that we can create and pass array of structures.

Program/Code:

#include <stdio.h>

struct student

{

    char student\_name[100];

    int student\_rollno;

    char student\_address[100];

};

void print\_info(struct student s1[])

{

    for(int i=0;i<5;i++)

    {

        printf("Name of student is= %s \n",s1[i].student\_name);

        printf("Roll no of student = %d \n",s1[i].student\_rollno);

        printf("The address of student is = %s \n",s1[i].student\_address);

    }

}

void main()

{

    struct student s[5];

    printf("Enter the details for 5 student\n");

    for(int i=0;i<5;i++)

    {

        printf("Enter the name of the student=\n");

        scanf("%s",s[i].student\_name);

        printf("Enter the roll no of student=\n");

        scanf("%d",&s[i].student\_rollno);

        printf("Enter the address of the student=\n");

        scanf("%s",s[i].student\_address);

    }

    print\_info(s);

}

Output:

A screenshot of a computer program

AI-generated content may be incorrect.

Time Complexity:

O(n) here n=5

**3.** **Create a structure Organization with organization name and organization ID as its data members. Next, create another structure Employee that is nested in structure Organization with employee ID, employee salary and employee name as its data members. Write a program in such a way that there are two organizations and each of these contains two employees.**

Aim: To show nested structure.

Theory: In this practical we called and created nested array of structures for our desired output.

Program/Code:

#include <stdio.h>

struct organisation

{

    char Organization\_name[100];

    int Organization\_id;

    struct employee

    {

        int employee\_id;

        char employee\_name[100];

        int employee\_salary;

    }e[2];

};

void print\_info(struct organisation o[])

{

    for(int i=0;i<2;i++)

    {

        for (int j=0;j<2;j++)

        {

            printf("\n%s works in organization %s with id %d and his id is %d and his salary is %d",o[i].e[j].employee\_name,o[i].Organization\_name,o[i].Organization\_id,o[i].e[j].employee\_id,o[i].e[j].employee\_salary);

        }

    }

}

void main()

{

    struct organisation o[2];

    for(int i=0;i<2;i++)

    {

        printf("Enter the name of Organization =\n");

        scanf("%s",o[i].Organization\_name);

        printf("Enter the id of Organization =\n");

        scanf("%d",&o[i].Organization\_id);

        printf("Enter the details of the employee for the above organization=\n");

        for(int j=0;j<2;j++)

        {

            printf("Enter the name of employee in the organization %s=",o[i].Organization\_name);

            scanf("%s",o[i].e[j].employee\_name);

            printf("Enter the id of employee in the organization %s=",o[i].Organization\_name);

            scanf("%d",&o[i].e[j].employee\_id);

            printf("Enter the salary of employee in the organization %s=",o[i].Organization\_name);

            scanf("%d",&o[i].e[j].employee\_salary);

        }

    }

    print\_info(o);

}

Output:

A screenshot of a computer program

AI-generated content may be incorrect.

Time Complexity:

O(1)

Link for all the code : <https://github.com/PanavPatel06/DSA-Lab>