

STRUCTURE PROGRAMS

WRITE A PROGRAM to create Student I-Card using a Structure. .

```
#include<stdio.h>
#include<conio.h>
struct student
{
    char id_num[6];
    char name[50];
    char fname[50];
    char gender;
    int roll;
}
int age;
};
int main()
{
    struct student s;

    printf("Enter The Information of Students :\n\n");
    printf("Enter Id Number : ");
    scanf("%s",s.id_num);
    printf("\n Enter Name : ");
    scanf("%s",s.name);
    printf("Enter Father Name : ");
    scanf("%s",s.fname);
    printf("Enter Gender : ");
    scanf("%s",s.gender);
    printf("Enter Roll No. : ");
    scanf("%d",&s.roll);
    printf("Enter Age : ");
    scanf("%d",&s.age);

    printf("\nDisplaying Information\n");
    printf("Name: %s\n",s.id_num);
    printf("Name: %s\n",s.name);
    printf("Name: %s\n",s.fname);
    printf("Name: %s\n",s.gender);
    printf("Roll: %d\n",s.roll);
    printf("Marks: %.d\n",s.age);
    return 0;
}
```

WRITE A PROGRAM to display structures and pointers.

```
#include<stdio.h>
```

```

#include<conio.h>
struct student
{
    char name[20];
    int rollno;
};
void main()
{
    struct student stu;
    struct student *p;
    p=&stu;
    printf("\n Enter Student Name:");
    scanf("%s",p->name);
    printf("\n Enter Student Roll No:");
    scanf("%d",&p->rollno);
    printf("\n*****OUTPUT*****");
    printf("\n Student Name is :%s",(*p).name);
    printf("\n Student Rollno is :%d",(*p).rollno);
    getch();
}

```

WRITE A PROGRAM to Passing Structure to a Function By Value

```

#include<stdio.h>
#include<conio.h>
void disp(struct student s1);
struct student
{
    char name[20];
    int rollno;
};
void main()
{
    struct student stu;
    printf("Enter the Name");
    scanf("%s",stu.name);
    printf("Enter the RollNo");
    scanf("%d",&stu.rollno);
    disp(stu);
    getch();
}
void disp(struct student s1)
{
    printf("\n****output****");
    printf("\nStudent Name is %s",s1.name);
    printf("\nStudent Rollno is %d",s1.rollno);
}

```

WRITE A PROGRAM to Passing Structure to a Function By Reference.

```
#include<stdio.h>
#include<conio.h>
void disp(struct student * s1);
struct student
{
    char name[20];
    int rollno;
};
void main()
{
    struct student stu;
    printf("Enter the Name");
    scanf("%s",stu.name);
    printf("Enter the RollNo");
    scanf("%d",&stu.rollno);
    disp(&stu);
    getch();
}
void disp(struct student *s1)
{
    printf("\n****output****");
    printf("\nStudent Name is %s",s1->name);
    printf("\nStudent Rollno is %d",s1->rollno);
}
```

WRITE A PROGRAM to show the memory occupied by Structure.

```
#include<stdio.h>
#include<conio.h>
struct student
{
    int id;
    char a;
    char b;
    float percentage;
};
int main()
{
    int i;
    struct student s1 = {1, 'A', 'B', 90.5};

    printf("size of structure in bytes : %d\n",
           sizeof(s1));

    printf("\nAddress of id1      = %u", &s1.id );
    printf("\nAddress of a        = %u", &s1.a );
    printf("\nAddress of b          = %u", &s1.b );
}
```

```
    printf("\nAddress of percentage = %u",&s1.percentage);

    return 0;
}
```

WRITE A PROGRAM to demonstrate the difference between unions and structures.

```
#include<stdio.h>
#include<conio.h>
union unionJob
{
    //defining a union
    char name[32];
    float salary;
    int workerNo;
} uJob;

struct structJob
{
    char name[32];
    float salary;
    int workerNo;
} sJob;

int main()
{
    printf("size of union = %d bytes", sizeof(uJob));
    printf("\nsize of structure = %d bytes", sizeof(sJob));
    return 0;
}
```