ARCHANA KUAMRI
DEPT. – ECE
ROLL - 408

ASSIGNMENT - 6
CS-PRACTICAL

```c
//1) Write a program of structure that reads and displays the
     information of student.

#include <stdio.h>
#include <stdlib.h>

struct student{
   char* name[50], dept[20];
   int roll_num;
}st_1;

void main() {

   int i = 0, n = 0;
   printf("Enter your name: ");
   gets(st_1.name);

   printf("Enter your department: ");
   gets(st_1.dept);

   printf("Enter your roll: ");
   scanf("%d", &st_1.roll_num);

   printf("Your name is       : %s\n", st_1.name);
   printf("Your department is: %s\n", st_1.dept);
   printf("Your roll is       : %d", st_1.roll_num);

}
```

```
Enter your name: Archana Kumari
Enter your department: ECE
Enter your roll: 408
Your name is       : Archana Kumari
Your department is: ECE
Your roll is       : 408
--------------------------------
Process exited after 9.444 seconds with return value 23
Press any key to continue . . .
```

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```c
//2.)Write a code to demonstrate the usage of array of stucture.

#include <stdio.h>
#include <stdlib.h>

struct student{
   char name[50], dept[20];
   int roll_num;
};

void main() {
   int i = 0, n = 0;
   printf("Enter the number of students: ");
   scanf("%d", &n);

   struct student *st = malloc(n * sizeof(struct student));

   for(; i < n; ++i) {
       printf("Enter the details of student %d\n", i + 1);
       getchar();
       printf("Enter name: ");
       //gets(st[i].name);
       scanf("%[^\n]", st[i].name);
       getchar();
       printf("Enter department: ");
       //gets(st[i].dept);
       scanf("%[^\n]", st[i].dept);

       printf("Enter roll: ");
       scanf("%d", &st[i].roll_num);
   }
   printf("Enter student details are: \n");
   for(i = 0; i < n; ++i) {
       printf("Name: %s  ", st[i].name);
       printf("Department: %s  ", st[i].dept);
       printf("Roll: %d\n", st[i].roll_num);
   }
}
```

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```
Enter the number of students: 3
Enter the details of student 1
Enter name: Archaan Kumari
Enter department: ECE
Enter roll: 408
Enter the details of student 2
Enter name: xyz
Enter department: Cs
Enter roll: 400
Enter the details of student 3
Enter name: pqr
Enter department: IT
Enter roll: 420
Enter student details are:
Name: Archaan Kumari  Department: ECE  Roll: 408
Name: xyz  Department: Cs  Roll: 400
Name: pqr  Department: IT  Roll: 420

--------------------------------
Process exited after 25.58 seconds with return value 3
Press any key to continue . . .
```

```c
//3) Write a program to print all students names who gets marks >= 80

#include <stdio.h>
#include <stdlib.h>

struct student{
   char name[50];
   int phy_marks, cs_marks, maths_marks;
}st;

void main() {

   int i = 0, n = 0;
   printf("Enter the number of students: ");
   scanf("%d", &n);

   struct student *st = malloc(n * sizeof(struct student));

   for(; i < n; ++i) {
   printf("\nEnter the details of student %d\n", i + 1);

   printf("Enter name: ");
   getchar();
  // gets(st[i].name);
   scanf("%[^\n]", st[i].name);
   printf("Enter marks in physics: ");
   scanf("%d", &st[i].phy_marks);
```

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```
   printf("Enter marks in CS: ");
   scanf("%d", &st[i].cs_marks);
   printf("Enter marks in maths: ");
   scanf("%d", &st[i].maths_marks);
   }

   for(i = 0; i < n; ++i) {
      double average = (double)(st[i].phy_marks + st[i].cs_marks + st[i].maths
_marks ) / 3.0;
      if(average >= 80.0) {
         printf("\nName: %s\n", st[i].name);
         printf("Avergae marks: %0.2lf", average);
     }
   }
}
```

```
Enter the number of students: 3

Enter the details of student 1
Enter name: Archana Kumari
Enter marks in physics: 96
Enter marks in CS: 99
Enter marks in maths: 95

Enter the details of student 2
Enter name: xyz
Enter marks in physics: 50
Enter marks in CS: 67
Enter marks in maths: 78

Enter the details of student 3
Enter name: pqr
Enter marks in physics: 89
Enter marks in CS: 100
Enter marks in maths: 93

Name: Archana Kumari
Avergae marks: 96.67
Name: pqr
Avergae marks: 94.00
--------------------------------
Process exited after 35.68 seconds with return value 3
Press any key to continue . . .
```

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```c
//4) Write a program to demonstrate the usages of nested structures.

#include <stdio.h>
#include <stdlib.h>

struct details{
   int wbjeeRank;
};

struct student {
   char name[50];
   int roll;
   struct details stu;
};

void main() {
   struct student st1;
   printf("Enter name: ");
   gets(st1.name);
   printf("Enter roll: ");
   scanf("%d", &st1.roll);
   printf("Enter WBJEE_Rank: ");
   scanf("%d", &st1.stu.wbjeeRank);

   printf("\nYour details are: \nName: %s\nRoll: %d\nWBJEE_Rank: %d"
, st1.name, st1.roll, st1.stu.wbjeeRank);

}
```

```
Enter name: Archana Kumari
Enter roll: 408
Enter WBJEE_Rank: 1107

Your details are:
Name: Archana Kumari
Roll: 408
WBJEE_Rank: 1107
--------------------------------
Process exited after 9.061 seconds with return value 67
Press any key to continue . . .
```

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```c
//5.) Write a C program to demonstrate the usage of a structure pointer.
#include <stdio.h>
#include <stdlib.h>

struct student{
   char name[50];
   int roll;
}st;

void main() {

   int i = 0, n = 0;
   printf("Enter the number of students: ");
   scanf("%d", &n);

   struct student *st = malloc(n * sizeof(struct student));

   for(; i < n; ++i) {
   printf("\nEnter the details of student %d\n", i + 1);

   printf("Enter name: ");
   getchar();
  // gets(st[i].name);
   scanf("%[^\n]", st[i].name);
   printf("Enter roll: ");
   scanf("%d", &st[i].roll);
   }

   for(i = 0; i < n; ++i) {
         printf("\nName: %s", st[i].name);
         printf("\tRoll: %d", st[i].roll);
   }
}
```

```
PS C:\Users\MYPC\Documents\GitHub\Sem2_C-Programming-Classes\Lab_Atanu_Das\30.7.21> cd "c:\Users\MYPC\Documents\GitHub\Sem2_C-Programming-Classes\Lab_Atanu_Das\30.7.21\" ; if ($?) { gcc 5.c -o 5 } ; if ($?) { .\5 }
Enter the number of students: 3

Enter the details of student 1
Enter name: Archana Kumari
Enter roll: 408

Enter the details of student 2
Enter name: xyz
Enter roll: 400

Enter the details of student 3
Enter name: pqr
Enter roll: 440

Name: Archana Kumari    Roll: 408
Name: xyz       Roll: 400
Name: pqr       Roll: 440
PS C:\Users\MYPC\Documents\GitHub\Sem2_C-Programming-Classes\Lab_Atanu_Das\30.7.21>
```