EXPERIMENTS (Cycle-5)

1. Add Two Distances (in inch-feet) System Using Structures

2. Add Two Complex Numbers by Passing Structure to a Function

3. Store Information of 10 Students Using Structure[ID, Name , marks of five subjects] and display total marks of each student with all information

4. Store and display Information of n employees Using Structure

5. Calculate Difference between Two Time Periods.

Expt 24: Add Two Distances System Using Structures

AIM

Add Two Distances (in inch-feet) System Using Structures.

ALGORITHM

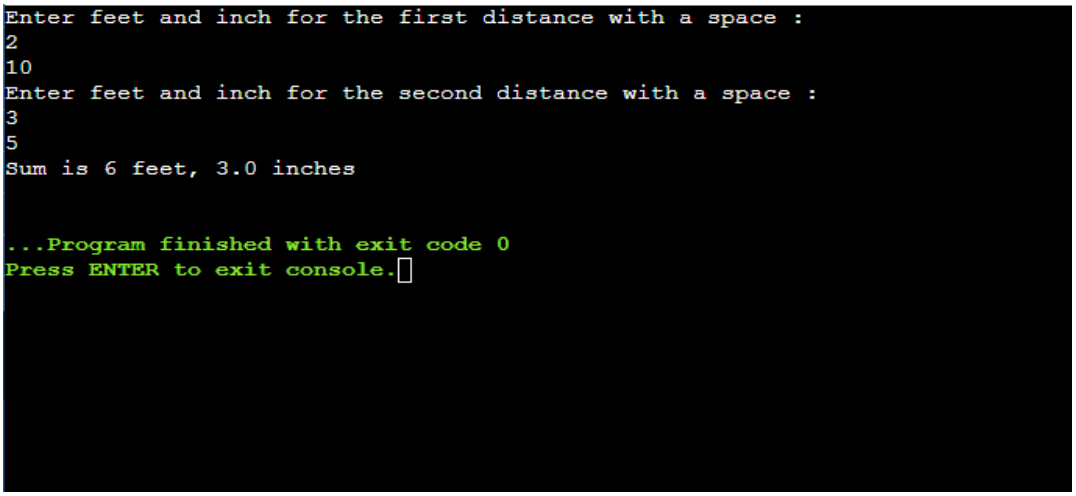
- Declare the structure
- Read in the values given in feet and inches and display them
- Calculate the sum of the two distances usingwhile loop
- Display the result.

SOURCE CODE

```
//*************************************************************************
// Program name        : Dist.c
// Author              : Anantha Krishnan R J
// Date written        : 22/09/2021
// Date complied       : 22/09/2021
// Aim of the program: Add Two Distances (in inch-feet) System Using Structures.
//*************************************************************************
//*************************************************************************

#include <stdio.h>


struct Distance
{
  int feet;
 float inch;
};


void main()
```

```
{
  struct Distance firstDist, secondDist, sum;
  printf("Enter feet and inch for the first distance with a space : \n");
  scanf("%d %f", &firstDist.feet, &firstDist.inch);

  printf("Enter feet and inch for the second distance with a space : \n");
  scanf("%d %f", &secondDist.feet, &secondDist.inch);

  sum.feet = firstDist.feet + secondDist.feet;
  sum.inch = firstDist.inch + secondDist.inch;
  while (sum.inch >= 12)
  {
    sum.inch = sum.inch - 12;
    sum.feet+=1;
  }
  printf("Sum is %d feet, %.1f inches\n", sum.feet, sum.inch);
}
```

OUTPUT :



Expt 25: Add Two Complex Numbers by Using Structure

AIM

Add Two Complex Numbers by Passing Structure to a Function.

ALGORITHM

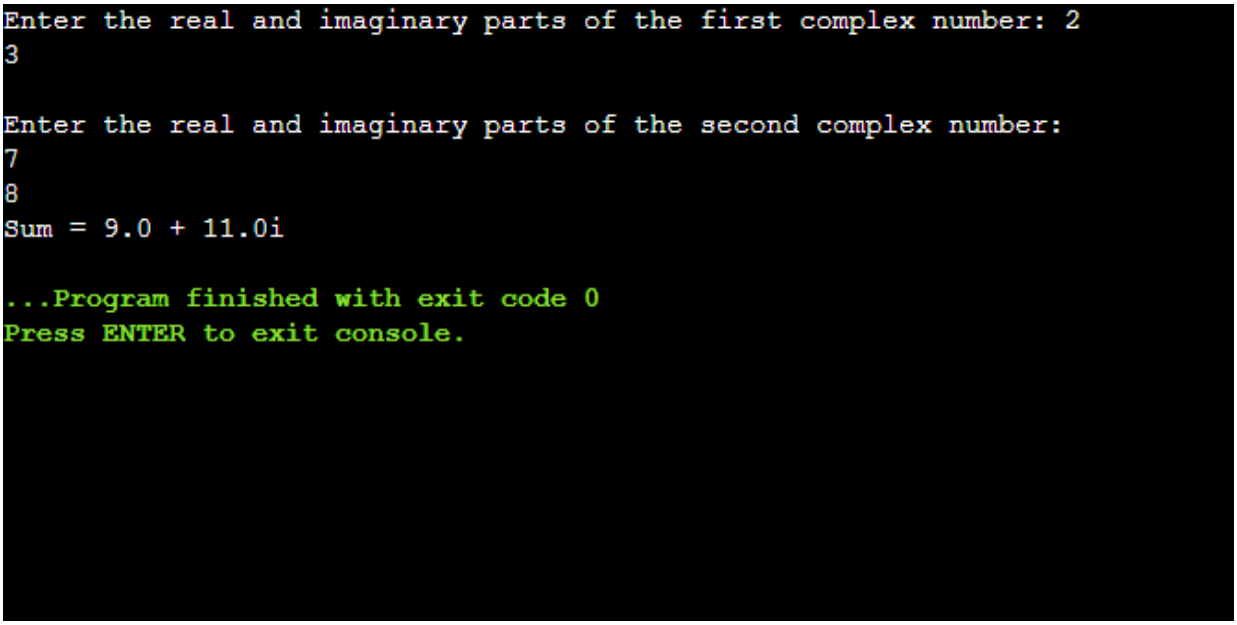
- Declare the structure
- Read in the real and imaginary parts of thefirst and the second complex numbers
- Store the output in as third complexnumber.
- Display the result.

SOURCE CODE

```
//*************************************************************************
// Program name        : Complex.c
// Author              : Anantha Krishnan R J
// Date written        : 22/09/2021
// Date complied       : 22/09/2021
// Aim of the program: Add Two Complex Numbers by Passing Structure to a Function.
//*************************************************************************
//*************************************************************************
#include <stdio.h>
typedef struct complex {
   float real;
   float imag;
}complex;
complex add(complex n1, complex n2);
void main() {
   complex n1, n2, result;
   printf("Enter the real and imaginary parts of the first complex number: ");
   scanf("%f %f", &n1.real, &n1.imag);
   printf("\nEnter the real and imaginary parts of the second complex number: \n");
```

```
    scanf("%f %f", &n2.real, &n2.imag);
    result = add(n1, n2);
    printf("Sum = %.1f + %.1fi", result.real, result.imag);
}
complex add(complex n1, complex n2) {
    complex a;
    a.real = n1.real + n2.real;
    a.imag = n1.imag + n2.imag;
    return (a);
}
```

OUTPUT :



Expt 26: Store Information of 10 Students Using Structure & display total marks of each student with all information.

AIM

Store Information of 3 Students Using Structure[ID ,Name, marks of three subjects] and display total marks of each student with all information

ALGORITHM

- Declare the structure
- Enter the values corresponding to eachstructure element using for loop
- Calculate some of marks of each student
- Display the result as a profile of each studentswhich includes their Id, name, mark for each subject and their total.

SOURCE CODE

```
//*************************************************************************

// Program name          : Info.c

// Author                : Anantha Krishnan R J

// Date written          : 22/09/2021

// Date complied         : 22/09/2021

// Aim of the program: Store Information of 10 Students Using Structure[ ID ,Name,marks of //five subjects] and display total marks of each student with all information

//*************************************************************************

//*************************************************************************

#include <stdio.h>

struct student {

   char name[50];

   int id;

   float marks[5];

} s[10];


void main() {
```

```
    int i;
    for (i = 0; i < 10; i++)
    {
        printf("Enter information of student %d :\n\n", i+1);
        printf("Enter the ID number : ");
        scanf("%d", &s[i].id);
        printf("\nEnter Name: ");
        scanf("%s", &s[i].name);
        printf("\nEnter marks of the following \n");
        for(int j=0;j<5;j++)
            {
                printf("\nSubject %d : ",j+1);
                scanf("%f", &s[i].marks[j]);
            }
    }
    printf("Displaying Information:\n\n");
    for (i = 0; i < 10; ++i)
    {
        printf("\nID number: %d\n", s[i].id);
        printf("Name: ");
        puts(s[i].name);
        printf("\nMarks in :\n");
        for(int j=0;j<5;j++)
            printf("Subject %d %.1f \t",j+1,s[i].marks[j]);
        printf("\n\n");
    }
}
```

OUTPUT :

```
Enter information of student 3 :

Enter the ID number : 3

Enter Name: bijoy

Enter marks of the following

Subject 1 : 23

Subject 2 : 21

Subject 3 : 20
Displaying Information:


ID number: 1
Name: aman

Marks in :
Subject 1 21.0  Subject 2 23.0  Subject 3 20.0


ID number: 2
Name: apz

Marks in :
Subject 1 10.0  Subject 2 223.0         Subject 3 22.0


ID number: 3
Name: bijoy

Marks in :
Subject 1 23.0  Subject 2 21.0  Subject 3 20.0
```

Expt 27: Store and display Information of n employees Using Structure.

AIM

Program to Store and display Information of n employees Using Structure

ALGORITHM

- Declare the structure.
- Enter the no. of employees in the organization.
- Using for loop read in the details of thecorresponding ‘n’ no. of employees.
- Display the result.

SOURCE CODE

```
//*************************************************************************
// Program name          : Info_emp.c
// Author                : Anantha Krishnan R J
// Date written          : 22/09/2021
// Date complied         : 22/09/2021
// Aim of the program: Program to Store and display Information of n employees Using Structure.
//*************************************************************************
//*************************************************************************
#include<stdio.h>
#include<string.h>
struct org
{
   char name[50];
   int emp_id,salary;
};
void main()
```

```
{
   struct org employee[100];
   int n,i;
   printf("\nEnter the number of employees in your organization: ");
   scanf("%d",&n);
   for(i=0;i<n;i++)
   {
      printf("\nEnter Person %d\n Name :",i+1);
      scanf("%s",&employee[i].name);
      printf("\nEmployee Id :");
      scanf("%d",&employee[i].emp_id);
      printf("\nEmployee Salary :");
      scanf("%d",&employee[i].salary);
   }
    printf("\nEmployees Information\n : ");
   for(i=0;i<n;i++)
   {
      printf("\nPerson %d\n Name : %s",i+1,employee[i].name);
      printf("\nEmployee Id : %d",employee[i].emp_id);
      printf("\nEmployee Salary : %d",employee[i].salary);
   }
}
```

OUTPUT

```
Enter the number of employees in your organization:  3

Enter Person 1
 Name :Aman

Employee Id :3124

Employee Salary :40000

Enter Person 2
 Name :Raj

Employee Id :3421

Employee Salary :20000

Enter Person 3
 Name :Helan

Employee Id :3400

Employee Salary :43000

Employees Information
 :
Person 1
 Name : Aman
Employee Id : 3124
Employee Salary : 40000
Person 2
 Name : Raj
Employee Id : 3421
Employee Salary : 20000
Person 3
 Name : Helan
Employee Id : 3400
Employee Salary : 43000
```

Expt 28: Calculate Difference between Two Time Periods.

AIM

Program to Calculate Difference between Two Time Periods.

ALGORITHM

- Enter the two time periods in hours, minutesand seconds.
- The inputs are stored in the struct variables **start** and **stop** respectively.
- The function differenceBetweenTimePeriodcalculates the difference between the time periods.
- Result is displayed in the main( ) functionwithout returning it.

SOURCE CODE

```
//*****************************************************************************
// Program name          : Info_emp.c
// Author                : Anantha Krishnan R J
// Date written          : 22/09/2021
// Date complied         : 22/09/2021
// Aim of the program: Program to Calculate Difference between Two Time Periods.
//*****************************************************************************
//*****************************************************************************
#include <stdio.h>
struct TIME {
  int  seconds;
  int  minutes;
  int hours;
};

void main()
```

```
{
  struct TIME start, stop, diff;

  printf("Enter the start time. \n");
  printf("Enter hours, minutes and seconds: ");
  scanf("%d %d %d", &start.hours, &start.minutes, &start.seconds);

  printf("Enter the stop time. \n");
  printf("Enter hours, minutes and seconds: ");
  scanf("%d %d %d", &stop.hours,&stop.minutes, &stop.seconds);

     if(start.seconds > stop.seconds)
     {
        stop.seconds += 60;
        --stop.minutes;
     }
     if(start.minutes > stop.minutes)
     {
        stop.minutes += 60;
        --stop.hours;
     }
     diff.seconds = stop.seconds - start.seconds;
     diff.minutes = stop.minutes - start.minutes;
     diff.hours = stop.hours - start.hours;

     printf("Difference = %d : %d : %d", diff.hours, diff.minutes, diff.seconds);
}
```

OUTPUT

```
Enter the start time.
Enter hours, minutes and seconds: 3
11
20
Enter the stop time.
Enter hours, minutes and seconds: 5
22
40
Difference = 2 : 11 : 20
```