Assignment # 10

Defining and Accessing Structure and its members

1. Define a structure named ***Person, Employee, Item, Account, Author, Book, Point, Customer*** with its members:

   a) `Person(name, age, address, contact)`
   b) `Employee(id, name, address, contact, doj, designation, salary)`
   c) `Customer(id, name, address, contact)`
   d) `Item(code, name, price)`
   e) `Author(id, name, contact. Email, gender)`
   f) `Book(ISBN, title, author, category, pages)`
   g) `Account(id, name, acno, actype, balance)`
   h) `Point(x, y)`

   Write a program to read a record and display it.

2. Define a structure name Complex having data members real & img. Write a main program to add two given complex numbers.

3. Define a structure name Date having data members day, month & year. Write a main program to add two given Date.

4. Define a structure name Time having data members hour, minute & second. Write a main program to add two given Time.

5. Define a structure name Distance having data members feet & inch. Write a main program to add two given Distances .

1).

a).

```
#include<stdio.h>
struct detail
{
   char person[20];
   int age;
   char address[20];
   int place;
   int date;

};

int main()
{
```

```
    struct detail e;
    printf("enter a person name :");
    gets(e.person);
     printf("enter a person age   :");
    scanf("%d",&e.age);
    printf("enter a person address   :");
    scanf("%s",e.address);
     printf("enter a person place  :");
    scanf("%d",&e.place);
     printf("enter a person date  :");
    scanf("%d",&e.date);

    printf("\nthe person name is  :%s\n\n ",e.person);
    printf("the  person age is  : %d\n\n ",e.age);
    printf("\nthe person  address is   :%s\n\n ",e.address);
    printf("\nthe person contact is   :%d\n\n ",e.place);
    printf("\nthe person date is   :%d\n\n ",e.date);
    return 0;
}
```

b).

```
#include<stdio.h>
struct employee
{
  int id;
    char name[20];
    char address[20];
    float contact;
    int dateoj;

};

int main()
{
    struct employee e;
    printf("enter a employee id  :");
    scanf("%d",&e.id);
    printf("enter a person name :");
    scanf("%s",e.name);
    printf("enter a person address   :");
    scanf("%s",e.address);
```

```
    printf("enter a person contact   :");
   scanf("%f",&e.contact);
    printf("enter a person date  :");
   scanf("%d",&e.dateoj);

   printf("\nthe id is  :%d\n\n ",e.id);
   printf("the name is  : %s\n\n ",e.name);
   printf("\nthe person  address is   :%s\n\n ",e.address);
   printf("\nthe person contact is   :%f\n\n ",e.contact);
   printf("\nthe person date of job is   :%d\n\n ",e.dateoj);
   return 0;
}
```

c).

```
#include<stdio.h>
struct customer
{
  int id;
   char name[20];
   char address[20];
   float contact;
};

int main()
{
   struct customer e;
   printf("enter a employee id  :");
   scanf("%d",&e.id);
   printf("enter a person name :");
   scanf("%s",e.name);
   printf("enter a person address   :");
   scanf("%s",e.address);
    printf("enter a person contact   :");
   scanf("%f",&e.contact);

   printf("\nthe id is  :%d\n\n ",e.id);
   printf("the name is  : %s\n\n ",e.name);
   printf("\nthe person  address is   :%s\n\n ",e.address);
   printf("\nthe person contact is   :%f\n\n ",e.contact);
   return 0;
}
```

d).

```
#include<stdio.h>
struct item
{
   int code;
   char name[20];
   float price;

};

int main()
{
   struct item e;
   printf("enter a item code  :");
   scanf("%d",&e.code);
   printf("enter a item name :");
   scanf("%s",e.name);
   printf("enter a item price   :");
   scanf("%f",&e.price);

   printf("\nthe id is  :%d\n\n ",e.code);
   printf("the name is  : %s\n\n ",e.name);
   printf("\nthe person  address is   :%f\n\n ",e.price);
   return 0;
}
```

e).

```
#include<stdio.h>
struct author
{
   int id ;
   char name[20];
   float contact;
   char email[50];
   char  gender[10];

};

int main()
{
   struct author a;
```

```
    printf("enter a author id   :");
    scanf("%d",&a.id);
    printf("enter a author  name :");
    scanf("%s",a.name);
    printf("enter a author  contact :");
    scanf("%f",&a.contact);
    printf("enter a author  gmail :");
    scanf("%s",a.email);
    printf("enter a gender :");
    scanf("%s",a.gender);

    printf("\nthe author id is  :%d\n\n ",a.id);
    printf("the author name  is  : %s\n\n ",a.name);
    printf("\nthe author  address is :%f\n\n ",a.contact);
    printf("the author email is  : %s\n\n ",a.email);
    printf("the author gender  is  : %s\n\n ",a.gender);

    return 0;
}
```

f).

```
#include<stdio.h>
struct book
{
   int ISBN ;
   char name[20];
   float contact;
   char category[50];
   int page ;

};

int main()
{
   struct book a;
   printf("enter a ISBN   :");
   scanf("%d",&a.ISBN);
   printf("enter a author  name :");
   scanf("%s",a.name);
   printf("enter a author  contact :");
   scanf("%f",&a.contact);
```

```
    printf("enter a book catagory :");
    scanf("%s",a.category);
    printf("enter a book page  :");
    scanf("%d",&a.page );

    printf("\nthe book ISBN is  :%d\n\n ",a.ISBN);
    printf("the book name  is  : %s\n\n ",a.name);
    printf("\nthe contact number  is :%f\n\n ",a.contact);
    printf("the book category  is  : %s\n\n ",a.category);
    printf("the book page   is  : %d\n\n ",a.page);

    return 0;
}
```

g).

```
#include<stdio.h>
struct account
{
    int id ;
    char name[20];
    float acno;
    char category[3];
    float balance ;

};

int main()
{
    struct account a;
    printf("enter a bank id  :");
    scanf("%d",&a.id);
    printf("enter a account name:");
    scanf("%s",a.name);
    printf("enter a account no :");
    scanf("%f",&a.acno);
    printf("enter a category :");
    scanf("%s",a.category);
    printf("enter a bank balance  :");
    scanf("%f",&a.balance);

    printf("\nthe bank id  is  :%d\n\n ",a.id);
```

```
    printf("the account name  is  : %s\n\n ",a.name);
    printf("\nthe account number   is :%f\n\n ",a.acno);
     printf("the bank category  is : %s\n\n ",a.category );
     printf("the bank balance is : %f\n\n ",a.balance );
    return 0;
}
```

h).

```
#include<stdio.h>
struct point
{
   int x,y,c;
};
int main()
{
   struct point a;
   printf("enter a x ");
   scanf("%d",&a.x);
   printf("enter a y" );
   scanf("%d",&a.y);
   a.c=a.x+a.y;
   printf("the sum is :%d\n",a.c);
   printf("the value of x is :%d\n",a.x);
   printf("the value of y is  :%d\n",a.y);
   return 0;
}
```

2).

```
#include<stdio.h>
struct comp
{
   int i,r;
};
int main()
{
   struct comp c1,c2,c3;
   printf("enter a real number of 1st complex : ");
   scanf("%d",&c1.r);
   printf("enter a imaginary number of 1st complex : ");
   scanf("%d",&c1.i);
   printf("enter a real number of 2nd complexr : ");
```

```
   scanf("%d",&c2.r);
   printf("enter a imaginary number of 2nd complex : ");
   scanf("%d",&c2.i);
   c3.r=c1.r+c2.r;
   c3.i=c1.i+c2.i;
   printf("the final complex number is: %d + %di ",c3.r,c3.i);
   return 0;
}
```

3).

```
#include<stdio.h>
struct date
{
   int day,month,year;

};
int main()
{
   struct date c1,c2,c3;
   printf("enter first  year month and day :");
   scanf("%d %d %d",&c1.year,&c1.month,&c1.day);
   printf("enter second year month and day :");
   scanf("%d %d %d",&c2.year,&c2.month,&c2.day);
   c3.year=c1.year+c2.year;
   c3.month=c1.month +c2.month;
   if(c3.month>12)
   {
      c3.year+=1;
      c3.month-=12;
   }
   c3.day =c1.day +c2.day;
   if(c3.day>30)
   {

      c3.month+=1;
      c3.day-=30;
   }
   printf("the sum of two date is :%d-%d-%d",c3.year,c3.month,c3.day);
   return 0;
}
```

4).

```
#include<stdio.h>
struct time
{
   int hour,minute,second;

};
int main()
{
   struct time c1,c2,c3;
   printf("enter first  hour minute and second :\n");
   scanf("%d %d %d",&c1.hour,&c1.minute,&c1.second);
   printf("enter second hour minute and second :\n");
   scanf("%d %d %d",&c2.hour,&c2.minute,&c2.second);
   c3.hour=c1.hour+c2.hour;
   c3.minute=c1.minute +c2.minute;
   if(c3.minute>60)
   {
      c3.hour+=1;
      c3.minute-=60;
   }
   c3.second =c1.second +c2.second;
   if(c3.second>60)
   {

      c3.minute+=1;
      c3.second-=60;
   }
   printf("the sum of two date is  - %d:%d:%d",c3.hour,c3.minute,c3.second);
   return 0;
}
```

5).

```
#include<stdio.h>
struct distance
{
   int feet,inch;

};
int main()
```

```
{
   struct distance c1,c2,c3;
    printf("enter first and  feet inch :");
   scanf("%d%d",&c1.feet,&c1.inch);
   printf("enter second feet and  inch :");
   scanf("%d%d",&c2.feet,&c2.inch);
   c3.feet=c1.feet+c2.feet;
   c3.inch=c1.inch +c2.inch;
   if(c3.inch>12)
      c3.feet+=1;
      c3.inch-=12;
   printf("the sum of two distance is :%d%d",c3.feet,c3.inch);
   return 0;
}
```