Assignment-10

Defining and Accessing Structure and its members

Name: Kishor Thagunna

Roll no: PUR077BEI018

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

```c
// h)   Point(x, y)
#include<stdio.h>

struct Points{
    int x, y;
};
int main(){
    struct Points point;
    printf("Enter X and Y points : ");
    scanf("%d  %d",&point.x,&point.y);
    printf("\nX\t\tY\n%d\t\t%d",point.x,point.y);
    return 0;
}
```

```c
// a) Person(name, age, address, contact)

#include <stdio.h>

struct Person
{
    char name[20], address[20];
    int age, contact;
};
int main()
{
    int i, n;
    printf("Enter the number of persons :");
    scanf("%d", &n);
    struct Person person[n];
    for (i = 0; i < n; i++)
    {
        printf("\nPerson %d\n", i+1);
        printf("Enter the name :");
        scanf("%s", &person[i].name);
        printf("Enter %s's age :",person[i].name);
        scanf("%s", &person[i].age);
        printf("Enter %s's address :",person[i].name);
        scanf("%s", &person[i].address);
        printf("Enter %s's contact :",person[i].name);
        scanf("%s", &person[i].contact);
    }
    printf("Personal detail\n");
    for (int i = 0; i < n; i++)
    {
        printf("Person %d\n", i + 1);
        printf("Name: \t\t %s \n", person[i].name);
        printf("Age: \t\t %d \n", person[i].age);
        printf("Address: \t %s \n", person[i].address);
        printf("Contact: \t %d \n\n", person[i].contact);
    }
    return 0;
}
```

```c
// b) Employee(id, name, address, contact, doj, designation, salary)

#include <stdio.h>
struct Employee
{
    char id[20], name[20], address[20], contact[15], dob[10], designation[20], sa
lary[10];
};
int main()
{
    struct Employee employee;
    printf("Enter the employee's id :");
    scanf("%s", &employee.id);
    printf("Enter the employee's name :");
    scanf("%s", &employee.name);
    printf("Enter the employee's address :");
    scanf("%s", &employee.address);
    printf("Enter the employee's contact :");
    scanf("%s", &employee.contact);
    printf("Enter the employee's date of birth (xxxx/xx/xx):");
    scanf("%s", &employee.dob);
    printf("Enter the employee's designation :");
    scanf("%s", &employee.designation);
    printf("Enter the employee's salary :");
    scanf("%s", &employee.salary);
    printf("Employee Details\n");
    printf("ID\t\tName\t\taddress\t\tContact\t\tDate of Birth\t\tDesigination\t\t
Salary\n");
    printf("%s\t\t%s\t\t%s\t\t%s\t\ty%s\t\t%s\t\t%s", employee.id, employee.name,
 employee.address, employee.contact, employee.dob, employee.designation, employee
.salary);
    return 0;
}
```

```c
// c) Customer(id, name, address, contact)

#include<stdio.h>
struct Customer
{
    char id[20], name[20], address[20], contact[15];
};
int main()
{
    struct Customer customer;
    printf("Enter the customer's id :");
    scanf("%s", &customer.id);
    printf("Enter the customer's name :");
    scanf("%s", &customer.name);
    printf("Enter the customer's address :");
    scanf("%s", &customer.address);
    printf("Enter the customer's contact :");
    scanf("%s", &customer.contact);
    printf("Customer's Details...");
    printf("\nID\t\tName\t\taddress\t\tContact\n");
    printf("%s\t\t%s\t\t%s\t\t%s",customer.id, customer.name, customer.address, c
ustomer.contact);

    return 0;
}
```

```c
// d)  Item(code, name, price)
#include <stdio.h>

struct item
{
    int code, price;
    char name[20];
};
int main()
{
    int n;
    printf("Enter the no. Of Item: ");
    scanf("%d", &n);
    struct item p[n];
    for (int i = 0; i < n; i++)
    {
        printf("\nItem %d\n", i + 1);
        printf("Enter Code: ");
        scanf("%d", &p[i].code);
        printf("Enter The Name: ");
        scanf("%s", p[i].name);
        printf("Enter %s's Price: ", p[i].name);
        scanf("%d", &p[i].price);
    }
    printf("\n\nItem Details:");
    for (int i = 0; i < n; i++)
    {
        printf("Item %d\n", i + 1);
        printf("Code: \t %d \n", p[i].code);
        printf("Name: \t %s \n", p[i].name);
        printf("Price: \t %d \n\n", p[i].price);
    }
    return 0;
}
```

```c
// e) Author(id, name, contact. Email, gender)
#include <stdio.h>
struct Author
{
    char id[20], name[20], email[20], gender[20];
};
int main()
{
    int n, i;
    printf("Enter the no. of Authors: ");
    scanf("%d", &n);
    struct Author a[n];
    for (int i = 0; i < n; i++)
    {
        printf("\nAuthor %d\n", i + 1);
        printf("Enter the Author's name :");
        scanf("%s", a[i].name);
        printf("Enter the %s's id :", a[i].name);
        scanf("%s", a[i].id);
        printf("Enter the %s's email :", a[i].name);
        scanf("%s", a[i].email);
        printf("Enter the %s's gender :", a[i].name);
        scanf("%s", a[i].gender);
        printf("\n\nEersonnels Details:");
        for (int i = 0; i < n; i++)
        {
            printf("Person %d\n", i+1);
            printf("Name:\t\t%s \n",a[i].name);
            printf("Age:\t\t%d\n",a[i].name);
            printf("Email:\t\t%s\n",a[i].email);
            printf("Gender:\t\t%s\n",a[i].gender);
        }
        return 0;
    }
```

```c
// f) Book(ISBN, title, author, category, pages)

#include <stdio.h>
struct Book
{
    char ISBN[20], title[20], author[20], category[20];
    int page;
};
int main()
{
    int n, i;
    printf("Enter the number of book: ");
    scanf("%d", &n);
    struct Book b[n];
    for (int i = 0; i < n; i++)
    {
        printf("\nBook %d\n", i + 1);
        printf("Enter the title :");
        scanf("%s", &b[i].title);
        printf("Enter %s's ISBN :", b[i].title);
        scanf("%s", &b[i].ISBN);
        printf("Enter %s's author :", b[i].title);
        scanf("%s", &b[i].author);
        printf("Enter %s's category :", b[i].title);
        scanf("%s", &b[i].category);
        printf("Enter %s's page :", b[i].title);
        scanf("%d", &b[i].page);
    }
    printf("\n\nEersonnels Details:");
    for (int i = 0; i < n; i++)
    {
        printf("Person %d\n", i+1);
        printf("Title:\t\t%s\n",b[i].title);
        printf("ISBN:\t\t%s\n",b[i].ISBN);
        printf("Author:\t\t%s\n",b[i].author);
        printf("Category:\t%s\n",b[i].category);
        printf("Page:\t\t%d\n",b[i].page);

    }

    return 0;
}
```

```c
// g) Account(id, name, acno, actype, balance)

#include <stdio.h>
struct account
{
    char id[20], name[20], acno[20], actype[20], balance[20];
};
int main()
{
    int n;
    printf("Enter the number of Accounts: ");
    scanf("%d", &n);
    struct account a[n];
    for (int i = 0; i < n; i++)
    {
        printf("\nAccount %d\n", i + 1);
        printf("Enter the name of account holder: ");
        scanf("%s",&a[i].name);
        printf("Enter the %s's id :", a[i].name);
        scanf("%s", &a[i].id);
        printf("Enter the %s's account no. :", a[i].name);
        scanf("%s", &a[i].acno);
        printf("Enter the %s's account type :", a[i].name);
        scanf("%s", &a[i].actype);
        printf("Enter the %s's total balance :", a[i].name);
        scanf("%s", &a[i].balance);
    }
    printf("\n\nEersonnels Details:");
    for (int i=0; i<n; i++)
    {
        printf("Account %d\n", i+1);
        printf("Name:\t\t%s \n",a[i].name);
        printf("Id:\t\t%s\n",a[i].id);
        printf("Account no.:\t%s\n",a[i].acno);
        printf("Account type:\t%s\n",a[i].actype);
        printf("Total balance:\t%s",a[i].balance);
    }
    return 0;
}
```

```c
//2. Define a structure name Complex having data members real & img. Write a main
 program to add two given complex numbers.
#include <stdio.h>

struct complex {
  int real;
  int img;
};

int main() {
  struct complex p[2];
  for (int i = 0; i<2; i++) {
    printf("Number %c\n", 65+i);
    printf("Enter the real part of number: ");
    scanf("%d", &p[i].real);
    printf("Enter the imaginary part of number: ");
    scanf("%d", &p[i].img);
  }
  printf("\nThe sum is %d+%di.", p[1].real+p[0].real, p[1].img+p[0].img);
  return 0;
}
```

```c
//3. Define a structure name Date having data members day, month & year. Write a main program to add two given Date.
#include <stdio.h>

struct date {
  int day,month,year;
};

int main() {
  struct date d[2];
  int y=0,m=0,da=0;
  for (int i=0; i<2; i++) {
    printf("\nNumber %c\n", 65+i);
    printf("Enter the day: ");
    scanf("%d", &d[i].day);
    printf("Enter the month: ");
    scanf("%d", &d[i].month);
    printf("Enter the year: ");
    scanf("%d", &d[i].year);
    da=da+d[i].day;
    m=m+d[i].month;
    y=y+d[i].year;
  }
  while (da>31) {
    da=da-31;
    m++;
  }
  while (m>12) {
    m=m-12;
    y++;
  }
  printf("The Sum of Dates is %d/%d/%d (Y/M/D).", y, m, da);
  return 0;
}
```

```c
// Define a structure name Time having data members second, minute & second. Writ
e a main program to add two given Time.

#include <stdio.h>

struct time {
  int second,minute,hour;
};

int main() {
  struct time d[2];
  int h=0,m=0,s=0;
  for (int i=0; i<2; i++) {
    printf("\nNumber %c\n", 65+i);
    printf("Enter the second: ");
    scanf("%d", &d[i].second);
    printf("Enter the minute: ");
    scanf("%d", &d[i].minute);
    printf("Enter the hour: ");
    scanf("%d", &d[i].hour);
    s=s+d[i].second;
    m=m+d[i].minute;
    h=h+d[i].hour;
  }
  while (s>=60) {
    s=s-60;
    m++;
  }
  while (m>=60) {
    m=m-60;
    h++;
  }
  printf("The Sum of Time is %d:%d:%d.", h, m, s);
  return 0;
}
```

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

#include <stdio.h>

struct distance {
  int inch,feet;
};

int main() {
  struct distance d[2];
  int f=0,in=0;
  for (int i=0; i<2; i++) {
    printf("\nNumber %c\n", 65+i);
    printf("Enter the inch: ");
    scanf("%d", &d[i].inch);
    printf("Enter the feet: ");
    scanf("%d", &d[i].feet);
    in=in+d[i].inch;
    f=f+d[i].feet;
  }
  while (in>=12) {
    in=in-12;
    f++;
  }
  printf("The Sum of Distance is %d ft %d in.", f, in);
  return 0;
}
```