Assignment 14

1. //Create a structure Book with data members as bname, id, author, price. Accept the
//values of all these members from user and display them.

```
#include<stdio.h>
#include<string.h>
typedef struct Books{
	int id;
	char bname[30];
	char author[20];
	double price;
}Books;
void storebooks(Books*,int);
void displaybooks(Books*,int);
int main()
{
	Books b[3];
	storebooks(b,3);
	displaybooks(b,3);
}
void storebooks(Books *b, int size){
	int i=0;
	for(i=0;i<size;i++){
		printf("Enter Book id:");
		scanf(" %d",&b[i].id);
		getchar();
		printf("Enter book name:");
		fgets(b[i].bname,sizeof(b[i].bname),stdin);
		printf("Enter book author:");
		fgets(b[i].author,sizeof(b[i].author),stdin);
		printf("Enter price of thr book:");
		scanf("%lf",&b[i].price);
	}
}
void displaybooks(Books *b, int size){
	int i;
	for(i=0;i<size;i++){
		printf("Book id:%d\n",b[i].id);
		printf("Book name:%s\n",b[i].bname);
		printf("Book author:%s\n",b[i].author);
		printf("Book price:%lf\n",b[i].price);
	}
}
```

2. //Create a structure Time with data members as hrs, min, sec. Accept the values of all
//these members from user and display them. Also perform addition of two time variables

```
//and display the result. If sec goes beyond 60, carry it to min etc. Add a method to
//convert the given time into sec.
#include<stdio.h>
#include<string.h>
typedef struct Time{
	int hr;
	int min;
	int sec;
}Time;
void store(Time*,int);
void display(Time*,int);
void addition(Time*,int);
void converttime(Time*,int);
int main()
{
	Time t[2];
	store(t,2);
	display(t,2);
	addition(t,2);
	converttime(t,2);
}
void store(Time * t, int size){
	int i;
	for(i=0;i<size;i++){
		printf("Enter hour:");
		scanf("%d",&t[i].hr);
		printf("Enter mins:");
		scanf("%d",&t[i].min);
		printf("Enter sec:");
		scanf("%d",&t[i].sec);
	}
}
void display(Time*t,int size){
	int i;
	for(i=0;i<size;i++){
		printf("The time is: %d:%d:%d",t[i].hr,t[i].min,t[i].sec);
	}
}
void addition(Time*t,int size){
	int i,totalhr=0,totalmin=0,totalsec=0;
	for(i=0;i<size;i++){
		totalhr = totalhr+t[i].hr;
		totalmin = totalmin+t[i].min;
		totalsec = totalsec+t[i].sec;
```

```
        }
        int extrasec=0;
        if(totalsec>60){
                extrasec = totalsec-60;
                totalsec = totalsec-extrasec;
           totalmin = (totalmin*60)+extrasec;
        }
        int extramin=0;
        if(totalmin>3600){
                extramin = totalmin-3600;
        totalmin = totalmin-extramin;
        totalmin = totalmin/60;
        totalhr = (totalhr*60*60)+extramin;
        totalhr = totalhr/3600;
}

        printf("Total time is %d:%d:%d",totalhr,totalmin,totalsec);
}
void converttime(Time*t,int size){
        int i,totalhr=0,totalmin=0,totalsec=0;
        for(i=0;i<size;i++){
                totalhr = totalhr+t[i].hr;
                totalmin = totalmin+t[i].min;
                totalsec = totalsec+t[i].sec;
        }
        int totalh,totalm;
        totalh = totalhr*60*60;
        totalm = totalmin*60;
        printf("Total time in sec is %d:%d:%d",totalh,totalm,totalsec);
}
3. //3. Write  a program to create an array for 10 players. For each player store name,
//no. of matches played, runs, wickets takes.
//a. Create function to Accept the information of each player.
//b. Create function to display the information of all the players
//c. Display the information of player who made maximum runs and the one who took
//maximum number of wickets.
#include<stdio.h>
#include<string.h>
typedef struct Players{
        char name[20];
        int matches;
        int runs;
        int wickets;
}Players;
```

```
int main()
{
	Players p[10];
	store(p,10);
	display(p,10);
}
void store(Players *p, int size){
	int i;
	for(i=0;i<10;i++){
		printf("Enter the name of player:");
		scanf("%s",&p[i].name);
		printf("Enter the matches played:");
		scanf("%d",&p[i].matches);
		printf("Enter the runs made:");
		scanf("%d",&p[i].runs);
		printf("Enter the wickets taken:");
		scanf("%d",&p[i].wickets);
   }
}
void display(Players*p, int size){
	int i;
	for(i=0;i<10;i++){
		printf("Player name:%s\n",p[i].name);
		printf("Matches played:%d\n",p[i].matches);
		printf("Runs made:%d\n",p[i].runs);
		printf("Wickets taken:%d\n",p[i].wickets);
	}

	int maxruns = p[0].runs;
	int j;
	for(j=1;j<10;j++){
		if(p[j].runs>maxruns){
			maxruns=p[j].runs;
		}
	}
	printf("Max runs %d made by %s\n",maxruns,p[j].name);

	int maxwickets = p[0].wickets;
	int k;
	for(k=1;k<10;k++){
		if(p[k].wickets>maxwickets){
			maxwickets = p[k].wickets;
		}
```

```
        }
        printf("Max wickets %d taken by %s\n",maxwickets,p[k].name);
}
```

4. // Point of Sale System: Build a simple point of sale system using structures to
//represent products with attributes like name, price, and quantity. Allow users to add
//items to a cart and calculate the total cost.

```
#include<stdio.h>
#include<string.h>
typedef struct SaleSystem{
        char name[20];
        double price;
        int quantity;
}SaleSystem;
void store(SaleSystem*,int);
void totalcost(SaleSystem*,int);
int main()
{
        SaleSystem ss[2];
        store(ss,2);
        totalcost(ss,2);
}
void store(SaleSystem *ss,int size){
        int i;
        for(i=0;i<size;i++){
                printf("Enter the name of product:");
                scanf("%s",&ss[i].name);
                printf("Enter the price:");
                scanf("%lf",&ss[i].price);
                printf("Enter the quantity:");
                scanf("%d",&ss[i].quantity);
        }
}
void totalcost(SaleSystem* ss, int size){
        int i,price=0;
        for(i=0;i<size;i++){
                price = price+ss[i].price;
        }
        printf("Total cost = %d",price);
}
```

5. //Movie Database: Create a program that uses structures to manage a movie database with
//details like title, director, release year, and genre. Allow users to add, search for,
//and update movie records.

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

```
typedef struct Movie {
    char title[50];
    char director[50];
    int year;
    char genre[30];
} Movie;

void add(Movie*, int);
void search(Movie*, int);
void update(Movie*, int);

int main() {
    Movie m[10];
    int choice;

    while (1) {
        printf("\nMovie Database Menu:\n");
        printf("1. Add Movie\n");
        printf("2. Search Movie\n");
        printf("3. Update Movie\n");
        printf("4. Exit\n");
        printf("Enter your choice: ");
        scanf("%d", &choice);
        fflush(stdin);

        switch (choice) {
            case 1:
                add(m, 2);
                break;
            case 2:
                search(m, 2);
                break;
            case 3:
                update(m, 2);
                break;
            case 4:
                printf("Exiting program...\n");
                return 0;
            default:
                printf("Invalid choice. Please try again.\n");
        }
    }
}
```

```
void add(Movie *m, int size) {
        int i;
    for (i = 0; i < size; i++) {
        printf("\nEnter movie name: ");
        scanf("%s",m[i].title);
        fflush(stdin);

        printf("Enter director name: ");
        scanf("%s",m[i].director);
        fflush(stdin);

        printf("Enter release year: ");
        scanf("%d", &m[i].year);
        fflush(stdin);

        printf("Enter genre: ");
        scanf("%s",m[i].genre);
        fflush(stdin);
    }
}

void search(Movie *m, int size) {
    char mname[50];
    printf("\nEnter movie name to search: ");
    scanf("%s",mname);
    fflush(stdin);

    int flag = 0;
    int i;
    for (i = 0; i < size; i++) {
        if (strcmp(mname, m[i].title) == 0) {
            printf("\nMovie found:\n");
            printf("Title: %s\n", m[i].title);
            printf("Director: %s\n", m[i].director);
            printf("Year: %d\n", m[i].year);
            printf("Genre: %s\n", m[i].genre);
            flag = 1;
            break;
        }
    }
    if (flag=0) {
        printf("Movie not found.\n");
    }
```

```
}

void update(Movie *m, int size) {
    char mname[50];
    printf("\nEnter movie name to update: ");
    scanf("%s",mname);
    fflush(stdin);

    int i;
    for (i = 0; i < size; i++) {
        if (strcmp(mname, m[i].title) == 0) {
            int choice;
            printf("\nWhat would you like to update?\n");
            printf("1. Title\n2. Director\n3. Year\n4. Genre\n");
            printf("Enter your choice: ");
            scanf("%d", &choice);
            fflush(stdin);


            switch (choice) {
                case 1:
                    printf("Enter new title: ");
                    scanf("%s",m[i].title);
                    fflush(stdin);

                    break;
                case 2:
                    printf("Enter new director: ");
                    scanf("%s",m[i].director);
                    fflush(stdin);

                    break;
                case 3:
                    printf("Enter new release year: ");
                    scanf("%d", &m[i].year);
                    fflush(stdin);
                    break;
                case 4:
                    printf("Enter new genre: ");
                    scanf("%s",m[i].genre);
                    fflush(stdin);

                    break;
                default:
```

```
                printf("Invalid choice.\n");
            }
            printf("Movie updated successfully.\n");
            return;
        }
    }
    printf("Movie not found.\n");
}
```