Task 1

Compile all sample programs

Sample 1

Code:

```
#include<iostream>
using namespace std;

struct product
{ int price;
 float weight;
} apple,lemon;

main(){
 apple.price=80;
 apple.weight=1.8;
 cout<<"Enter lemon.price = ";
 cin>>lemon.price;
 cout<<"Enter lemon.weight =";
 cin>>lemon.weight;
 cout<<"Apple.price = " <<apple.price<<endl;
 cout<<"Apple.weight = " <<apple.weight<<endl;
 cout<<"Lemon.price = "<<lemon.price<<endl;
 cout<<"Lemo.weight = "<<lemon.weight<<endl;
return 0;
}
```

Output:

```
Enter lemon.price = 200
Enter lemon.weight =2.5
Apple.price = 80
Apple.weight = 1.8
Lemon.price = 200
Lemo.weight = 2.5

--------------------------------
Process exited after 6.707 seconds with return value 0
Press any key to continue . . .
```

Sample 2

Code:

```
#include<iostream>
using namespace std;

struct mobile
{ char model[20];
 int memory;
float cam;
} sony={"xperia",16,12.3},samsung;

main(){
cout<<"samsung.model = ";
 cin>>samsung.model;
 cout<<"enter samsung.memory =";
 cin>>samsung.memory;
 cout<<"enter samsung.cam=";
 cin>>samsung.cam;
 cout<<" sony.model="<<sony.model<<"\n sony.memory ="<<sony.memory<<"\n sony.cam="<<sony.cam;
 cout<<"\n samsung.model=" <<samsung.model<<"\n samsung.memory=" <<samsung.memory<<"\n
samsung.cam="<<samsung.cam;
}
```

Output:

```
samsung.model = S2
enter samsung.memory =128
enter samsung.cam=28
 sony.model=xperia
 sony.memory =16
 sony.cam=12.3
 samsung.model=S2
 samsung.memory=128
 samsung.cam=28
--------------------------------
Process exited after 10.26 seconds with return value 0
Press any key to continue . . .
```

Sample 3

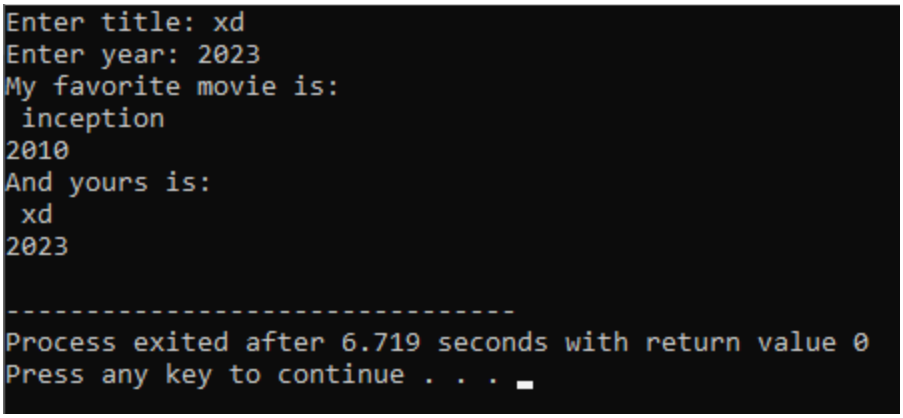
Code:

```
#include <iostream>
using namespace std;

struct Movies {
 char title[50];
int year;
 } mine={"inception",2010};

void printmovie (Movies movie);
main(){
 Movies yours;
 cout << "Enter title: ";
 cin >> yours.title;
 cout << "Enter year: ";
 cin >> yours.year;
 cout << "My favorite movie is:\n ";
 printmovie (mine);
 cout << "And yours is:\n ";
 printmovie (yours);
return 0;
}
void printmovie (Movies movie)
{
 cout << movie.title <<endl;
 cout << movie.year << endl;
}
```

Output:



Task 2

Create a structure student to maintain the information of the student having following information name , age, address, reg_no, university, GPA Create atleast 5 objects of students take input data for all 5 students and then display the record of all the students, you can use array for enter and display data

Code:

```
#include<iostream>
#include<conio.h>
using namespace std;

struct student{
	string name;
	int age;
	string address;
	string reg_no;
	string uni_name;
	float GPA;
}s[5];

main(){
	cout<<"Enter record for five students:\n";
	for(int i=0;i<5;i++){
		cout<<"Enter the details of "<<i+1<<" student:\n";
		cout<<"Name: ";
		cin.ignore();
		getline(cin,s[i].name);
		cout<<"Age: ";
		cin.ignore();
		cin>>s[i].age;
		cout<<"Address: ";
		cin.ignore();
		getline(cin,s[i].address);
		cout<<"Registration number: ";
		cin.ignore();
		getline(cin,s[i].reg_no);
		cout<<"University Name: ";
		cin.ignore();
		getline(cin,s[i].uni_name);
		cout<<"GPA: ";
		cin.ignore();
		cin>>s[i].GPA;
	}

	cout<<"\n\nDisplaying data:\n";
	for(int i=0;i<5;i++){
		cout<<"The details of "<<i+1<<" student:\n";
		cout<<"Name: "<<s[i].name<<endl;
		cout<<"Age: "<<s[i].age<<endl;
```

```
                cout<<"Address: "<<s[i].address<<endl;
                cout<<"Registration number: "<<s[i].reg_no<<endl;
                cout<<"University Name: "<<s[i].uni_name<<endl;
                cout<<"GPA: "<<s[i].GPA<<endl;
}}
```

Output:

```
Enter record for five students:
Enter the details of 1 student:
Name: sobia
Age: 19
Address: isd
Registration number: 3241
University Name: fjwu
GPA: 3.7
Enter the details of 2 student:
Name: khushbakht
Age: 20
Address: isd
Registration number: 4352
University Name: fjwu
GPA: 3.7
Enter the details of 3 student:
Name: shanza
Age: 20
Address: fsd
Registration number: 324
University Name: aiou
GPA: 3.5
Enter the details of 4 student:
Name: rafia
Age: 19
Address: rwp
Registration number: 3423
University Name: air
GPA: 3.5
Enter the details of 5 student:
Name: hafsa
Age: 19
Address: isd
Registration number: 34322
University Name: air
GPA: 3.4
```

```
Displaying data:
The details of 1 student:
Name: obia
Age: 9
Address: isd
Registration number: 241
University Name: jwu
GPA: 0.7
The details of 2 student:
Name: khushbakht
Age: 0
Address: isd
Registration number: 352
University Name: jwu
GPA: 0.7
The details of 3 student:
Name: shanza
Age: 0
Address: fsd
Registration number: 24
University Name: iou
GPA: 0.5
The details of 4 student:
Name: rafia
Age: 9
Address: rwp
Registration number: 423
University Name: ir
GPA: 0.5
The details of 5 student:
Name: hafsa
Age: 9
Address: isd
Registration number: 4322
University Name: ir
GPA: 0.4
```

Task 3

Create a structure resul , to maintain the result of student(s) , structure members are name Reg_no marks[4] // marks in 4 different subjects Total_marks // for sum of all the marks take data for atleast 2 students , calculate their total marks and display the result on the screen

Code:

```
#include <iostream>
#include <string>
using namespace std;
struct result {
   string name;
   int Reg_no;
   int marks[4];
   int Total_marks;
};
int main() {
   result student1, student2;
   cout << "Enter the name of student 1: ";
   getline(cin, student1.name);
   cout << "Enter the registration number of student 1: ";
   cin >> student1.Reg_no;
   cout << "Enter the marks of student 1 in four different subjects: ";
   cin >> student1.marks[0] >> student1.marks[1] >> student1.marks[2] >> student1.marks[3];
   cin.ignore();
   cout << "Enter the name of student 2: ";
   getline(cin, student2.name);
   cout << "Enter the registration number of student 2: ";
   cin >> student2.Reg_no;
   cout << "Enter the marks of student 2 in four different subjects: ";
   cin >> student2.marks[0] >> student2.marks[1] >> student2.marks[2] >> student2.marks[3];
   student1.Total_marks = student1.marks[0] + student1.marks[1] + student1.marks[2] + student1.marks[3];
   student2.Total_marks = student2.marks[0] + student2.marks[1] + student2.marks[2] + student2.marks[3];
   cout << "Student 1:" << endl;
   cout << "Name: " << student1.name << endl;
   cout << "Reg no: " << student1.Reg_no << endl;
   cout << "Marks: " << student1.marks[0] << ", " << student1.marks[1] << ", " << student1.marks[2] << ", " <<
student1.marks[3] << endl;
   cout << "Total marks: " << student1.Total_marks << endl;
   cout << endl;
   cout << "Student 2:" << endl;
   cout << "Name: " << student2.name << endl;
   cout << "Reg no: " << student2.Reg_no << endl;
   cout << "Marks: " << student2.marks[0] << ", " << student2.marks[1] << ", " << student2.marks[2] << ", " <<
student2.marks[3] << endl;
   cout << "Total marks: " << student2.Total_marks << endl;
   return 0;
}
```

Output:

```
Enter the name of student 1: sobia
Enter the registration number of student 1: 24234
Enter the marks of student 1 in four different subjects: 2
2
3
1
Enter the name of student 2: sky
Enter the registration number of student 2: 21312
Enter the marks of student 2 in four different subjects: 3
4
2
1
Student 1:
Name: sobia
Reg no: 24234
Marks: 2, 2, 3, 1
Total marks: 8

Student 2:
Name: sky
Reg no: 21312
Marks: 3, 4, 2, 1
Total marks: 10

--------------------------------
Process exited after 37.24 seconds with return value 0
Press any key to continue . . .
```

Task 4

Create a structure flight(for meantaing the arrival time of the flights) having members Flight_no Hours minutes seconds Take some data from user at run time for different flights create a function Display_time which display the arrival time of the flight in (hours, mins , second)

Code:

```
#include <iostream>
using namespace std;
struct flight {
   int Flight_no;
   int Hours;
   int Minutes;
   int Seconds;
};
void Display_time(flight f) {
   cout << "The arrival time of flight " << f.Flight_no << " is: " << f.Hours << " hours, " << f.Minutes << " minutes, " <<
f.Seconds << " seconds." << endl;
}
int main() {
   const int num_flights = 3;
   flight flights[num_flights];
   for (int i = 0; i < num_flights; i++) {
      cout << "Enter the arrival time of flight " << i+1 << ":" << endl;
      cout << "Hours: ";
      cin >> flights[i].Hours;
      cout << "Minutes: ";
      cin >> flights[i].Minutes;
      cout << "Seconds: ";
      cin >> flights[i].Seconds;
      flights[i].Flight_no = i+1;
```

```
    }
    for (int i = 0; i < num_flights; i++) {
        Display_time(flights[i]);
    }
    return 0;
}
```

Output: