

## ASSIGNMENT 1

### TSDL

WAP to add modify delete and view following information(also store data in file and fetch next time)  
vehicle information name type company name capacity in cc mileage. ( BY FILE HANDLING )

CODE :

```
//Merwin Pinto
```

```
//202100102
```

```
//Div D : D1 batch
```

```
#include<iostream>
```

```
#include<conio.h>
```

```
#include<string>
```

```
#include<fstream>
```

```
using namespace std;
```

```
class vehicle_information
```

```
{
```

```
    public :
```

```
    string name;
```

```
    string type;
```

```
    string company;
```

```
    unsigned int capacity;
```

```
    float mileage;
```

```
}a[100];
```

```
int main()
```

```
{
```

```
    int i,j;
```

```
    ofstream data_file;
```

```
    data_file.open("Vehicle_data.txt");
```

```
    data_file << "Saving to file called Vehicle_data" << endl;
```

```
    cout << "Enter No of vehicles :";
```

```
    cin >> j ;
```

```
cout<< endl;
```

```
for(i=0 ; i<j ; i++)
```

```
{
```

```
    cout << "Enter car name : ";
```

```
    cin >> a[i].name;
```

```
    cout << "Enter car type :";
```

```
    cin >> a[i].type;
```

```
    cout << "Enter car comapany name : ";
```

```
    cin >> a[i].company;
```

```
    cout << "Enter car capacity in cc : ";
```

```
    cin >> a[i].capacity;
```

```
    cout << "Enter car mileage :";
```

```
    cin >> a[i].mileage;
```

```
    cout << endl;
```

```
}
```

```
for(i=0 ; i<j ; i++)
```

```
{
```

```
    data_file << endl;
```

```
    data_file << "Data Available " <<endl;
```

```
    data_file << "Car name is : " << a[i].name << endl;
```

```
    data_file << "Car type is : " << a[i].type << endl ;
```

```
    data_file << "Car comapany name is : " << a[i].company << endl;
```

```
    data_file << "Car capacity in cc : " << a[i].capacity << endl;
```

```
    data_file << "Car mileage is : " << a[i].mileage << endl;
```

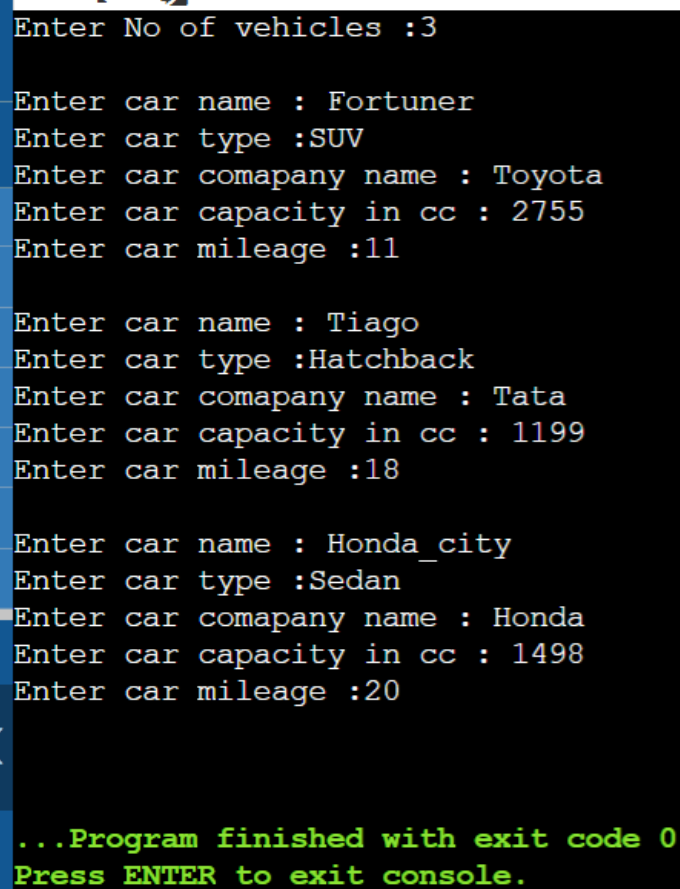
```
}
```

```
data_file << endl << "Data successfully saved";
```

```
return 0;
```

```
}
```

## OUTPUT



```
Enter No of vehicles :3

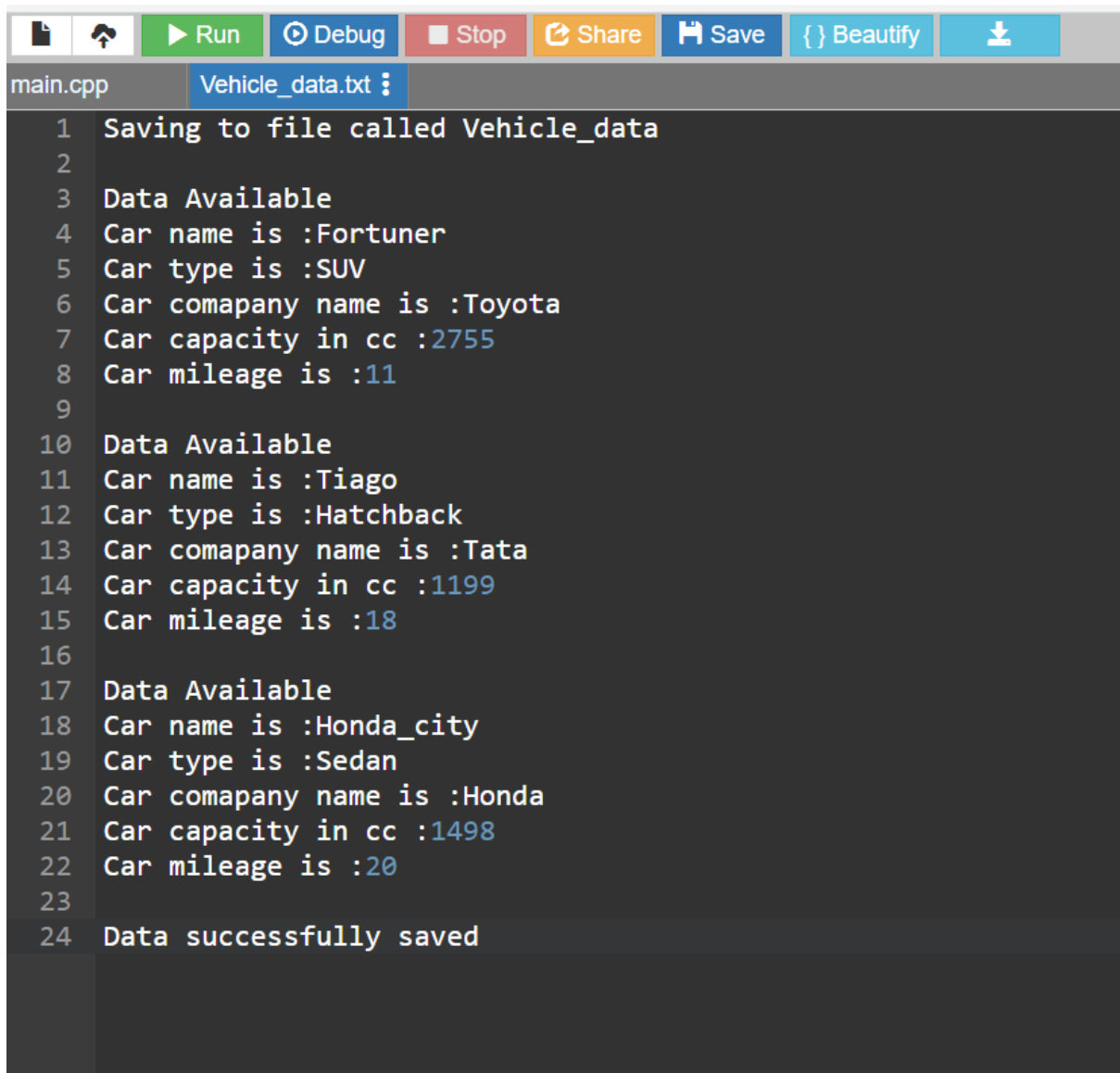
Enter car name : Fortuner
Enter car type :SUV
Enter car comapany name : Toyota
Enter car capacity in cc : 2755
Enter car mileage :11

Enter car name : Tiago
Enter car type :Hatchback
Enter car comapany name : Tata
Enter car capacity in cc : 1199
Enter car mileage :18

Enter car name : Honda_city
Enter car type :Sedan
Enter car comapany name : Honda
Enter car capacity in cc : 1498
Enter car mileage :20

...Program finished with exit code 0
Press ENTER to exit console.
```

## FILE HANDLING OUTPUT

A screenshot of a code editor interface. At the top, there is a toolbar with icons for file operations and buttons labeled 'Run', 'Debug', 'Stop', 'Share', 'Save', 'Beautify', and a download icon. Below the toolbar, the editor shows two tabs: 'main.cpp' and 'Vehicle\_data.txt'. The 'Vehicle\_data.txt' tab is active, displaying a C++ program. The program consists of 24 lines of code. Lines 1-24 show the process of saving car data to a file. The data is organized into three groups, each starting with 'Data Available'. The first group (lines 4-8) is for a Fortuner SUV by Toyota with 2755 cc and 11 kmpl mileage. The second group (lines 11-15) is for a Tiago Hatchback by Tata with 1199 cc and 18 kmpl mileage. The third group (lines 18-22) is for a Honda City Sedan by Honda with 1498 cc and 20 kmpl mileage. The program ends with a confirmation message 'Data successfully saved' on line 24.

```
1 Saving to file called Vehicle_data
2
3 Data Available
4 Car name is :Fortuner
5 Car type is :SUV
6 Car comapany name is :Toyota
7 Car capacity in cc :2755
8 Car mileage is :11
9
10 Data Available
11 Car name is :Tiago
12 Car type is :Hatchback
13 Car comapany name is :Tata
14 Car capacity in cc :1199
15 Car mileage is :18
16
17 Data Available
18 Car name is :Honda_city
19 Car type is :Sedan
20 Car comapany name is :Honda
21 Car capacity in cc :1498
22 Car mileage is :20
23
24 Data successfully saved
```

## ASSIGNMENT 2

CODE :

```
//constructor , file and inheritance
```

```
//Assignment 2 TSDL
```

```
//Merwin Pinto
```

```
//202100102
```

```
//Div D : D1 batch
```

```
#include<iostream>
```

```
#include<fstream>
```

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

```
using namespace std;
```

```
class computer_details
```

```
{
```

```
    public :
```

```
    // string processor[10];
```

```
    int ram;
```

```
    int harddisk;
```

```
    int usb_port;
```

```
    int hdmi_port;
```

```
    unsigned int battery_backup;
```

```
    computer_details()
```

```
{
```

```
    // processor = "inteli";
```

```
    ram = 4;
```

```
    harddisk = 512;
```

```
    usb_port = 2;
```

```
    hdmi_port = 1;
```

```
    battery_backup = 180;
```

```
}
```

```
};
```

```
class purchase_detail : public computer_details
```

```
{
```

```
    public :
```

```
    //string person_name[20];
```

```
    unsigned long int mobile;
```

```
    // string email[20];
```

```
    // string computer_details[20];
```

```
    // string date[10];
```

```
    // string company_name[20];
```

```
    unsigned long int contact_number;
```

```
    // string email[20];
```

```
    int quantity;
```

```
    purchase_detail()
```

```
    {
```

```
        //person_name = "merwin_Pinto";
```

```
        mobile = 8208905080;
```

```
        // email = merwinpinto5gmail.com;
```

```
        // computer_details = laptop;
```

```
        // company_name = Acer;
```

```
        contact_number = 7263921150;
```

```
        quantity = 1;
```

```
        // date = 24_05_2022;
```

```
    }
```

```
};
```

```
int main()
```

```
{
```

```

computer_details a;

purchase_detail b;

int i;

char device[30];

ofstream data_file;

data_file.open("Device_data.txt");

data_file << "Coded using C++ programming language." << endl;

cout << " _____ " << endl;

cout << "the computer details are as follows : " << endl;

//cout << "processor : " << a.processor << endl;

cout << "ram : " << a.ram << endl;

cout << "Harddisk : " << a.harddisk << endl;

cout << "usb port : " << a.usb_port << endl; ;

cout << "hdmi port : " << a.hdmi_port << endl;

cout << "battery backup : " << a.battery_backup << endl;

cout << " _____ " << endl;


cout << "the purchase details are as follows : " << endl;

// cout << "person name : " << b.person_name << endl;

cout << "mobile : " << b.mobile << endl;

// cout << "email : " << b.email << endl;

// cout << "computer_detail : " << b.computer_details << endl;

// cout << "date : " << b.date << endl;


cout << " _____ " << endl;


cout << "the company details are as follows : " << endl;

// cout << "company name : " << b.company_name << endl;

cout << "contact number : " << b.contact_number << endl;

// cout << "email : " << b.email << endl;

// cout << "computer detail : " << b.computer_details << endl;

```

```

// cout << "date : "<< b.date << endl;

cout << " _____ "<<endl;
data_file << "the following data added to Data File" << endl;

data_file << " _____ "<<endl;
data_file << "the computer details are as follows : " << endl;
//cout << "processor : " << a.processor << endl;
data_file << "ram : " << a.ram << endl;
data_file << "Harddisk : " << a.harddisk << endl;
data_file << "usb port : " << a.usb_port << endl; ;
data_file << "hdmi port : " << a.hdmi_port << endl;
data_file << "battery backup : " << a.battery_backup << endl;

data_file << " _____ "<<endl;
data_file << "the purchase details are as follows : " << endl;
//data_file << "person name : " << b.person_name << endl;
data_file << "mobile : "<< b.mobile<< endl;
// data_file << "email : "<< b.email << endl;
// data_file << "computer_detail : "<< b.computer_details << endl;
// data_file << "date : " << b.date << endl;

data_file << " _____ "<<endl;
data_file << "the company details are as follows : " << endl;
// data_file << "company name : " << b.company_name << endl;
data_file << "contact number : "<< b.contact_number<< endl;
// data_file << "email : "<< b.email << endl;
// data_file << "computer detail : "<< b.computer_details << endl;
// data_file << "date : " << b.date << endl;

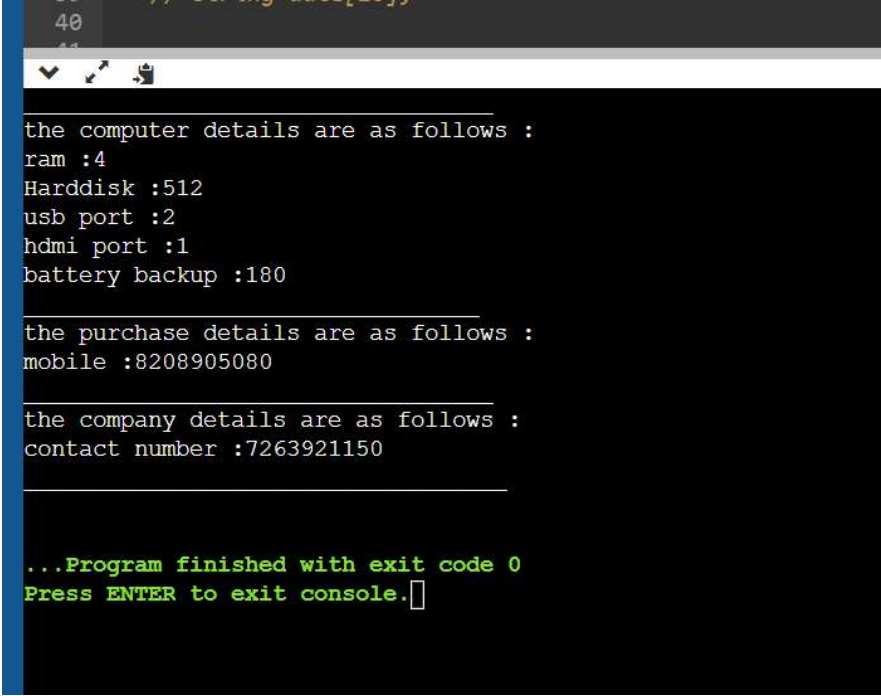
data_file << " _____ "<<endl;

```



```
    return 0;
}
```

OUTPUT :

A screenshot of a terminal window with a dark background. The output of a C++ program is displayed in white text. It shows three sections of data separated by horizontal lines: computer details (ram, Harddisk, usb port, hdmi port, battery backup), purchase details (mobile), and company details (contact number). At the bottom, a green message indicates the program finished with exit code 0 and prompts the user to press ENTER to exit the console.

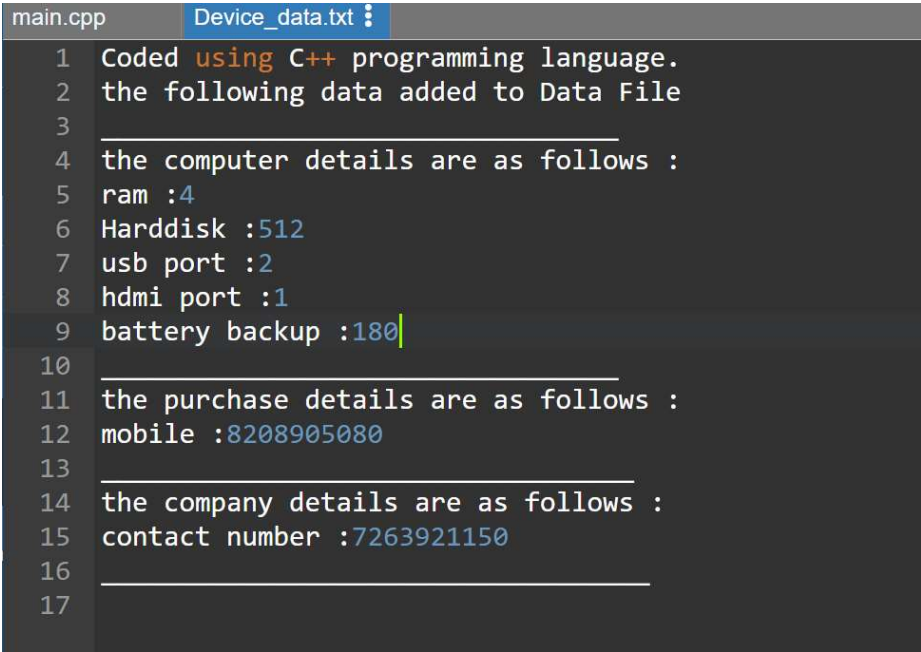
```
40
41
the computer details are as follows :
ram :4
Harddisk :512
usb port :2
hdmi port :1
battery backup :180

the purchase details are as follows :
mobile :8208905080

the company details are as follows :
contact number :7263921150

...Program finished with exit code 0
Press ENTER to exit console.
```

Putting output in a file

A screenshot of a code editor with a dark background. The editor has two tabs: 'main.cpp' and 'Device\_data.txt'. The 'Device\_data.txt' tab is active, showing the output of the program being written to a file. The output is identical to the one shown in the terminal screenshot, including the three sections of data and the final green message.

```
main.cpp  Device_data.txt
1  Coded using C++ programming language.
2  the following data added to Data File
3
4  the computer details are as follows :
5  ram :4
6  Harddisk :512
7  usb port :2
8  hdmi port :1
9  battery backup :180
10
11 the purchase details are as follows :
12 mobile :8208905080
13
14 the company details are as follows :
15 contact number :7263921150
16
17
```

### ASSIGNMENT 3

#### CODE :

```
//Merwin Pinto
//202100102
//Div : D
//Library information storing to be modified
#include<iostream>
#include<fstream>
using namespace std;

class librarian_info
{
    public :
        char name[20];
        char qualification[10];
        char experience[40];
};

class student_info
{
    public :
        char student_name[20];
        char department[30];
        int Class;
        char division[10];
};

class book_info
{
    public :
        char book_name[20];
```

```

    char author[20];

    char publication[20];

    int copies;
}book_info[10];


class book_issue : public book_info , public student_info
{
    public :

    char book_issued_date[20];
    char book_returned_date[20];
    int damage;
    char Damage_to_book[10];
};


class library_info : public book_issue , public librarian_info
{

}library[10];


int main()
{
    int i,j,books;

    ofstream data;

    data.open("Library_Data_information.txt");

    cout<<"Enter no of books student issued :";

    cin >> books;


    for(i=0;i<1;i++)
    {
        cout <<"____Library Info____"<<endl;

        cout << "Enter name of librarian : " ;

        cin >> library[i].name;
    }
}

```

```

cout << "Enter qualification of librarian : " ;
cin >> library[i].qualification;
cout << "Enter experience of librarian : " ;
cin >> library[i].experience;
cout << endl;
cout << " ____Student Info____ " << endl;
cout << "Enter name of student : " ;
cin >> library[i].student_name;
cout << "Enter department of student : " ;
cin >> library[i].department;
cout << "Enter class of student : " ;
cin >> library[i].Class;
cout << "Enter division of student : " ;
cin >> library[i].division;
cout << endl;

```

```

for(j=0;j<books;j++)
{
    cout << " ____Book Info____: " << j+1 << endl;
    cout << "Enter name of book : " ;
    cin >> book_info[j].book_name;
    cout << "Enter author of book : " ;
    cin >> book_info[j].author;
    cout << "Enter publication of book : " ;
    cin >> book_info[j].publication;
    cout << endl ;
}

```

```

cout << " ____Book issue Info____ " << endl;
cout << "book issued date : " ;
cin >> library[i].book_issued_date;

```

```

cout<<endl;
cout << "book returned date : ";
cin >> library[i].book_returned_date;
cout<<endl;
cout <<"Enter 1 for YES "<<endl;
cout <<"Enter 2 for NO "<<endl;
cout <<"option : ";
cin >> library[i].damage;
cout << "Damage to book : ";
if(library[i].damage == 1)
{
    cout<<"YES";
}
if(library[i].damage ==2)
{
    cout <<"NO";
}
}

for(i=0;i<1;i++)
{
data <<"____Library Info____"<<endl;
data << "Enter name of librarian : " << library[i].name << endl;
data << "Enter qualification of librarian : " <<library[i].qualification << endl;
data << "Enter experience of librarian : " << library[i].experience << endl;
data << endl;
data << " ____Student info_____"<<endl;
data << "Enter name of student : "<< library[i].student_name <<endl;
data << "Enter department of student : "<< library[i].department <<endl;
data << "Enter class of student : "<< library[i].Class <<endl;
data << "Enter division of student : "<< library[i].division <<endl;

```

```

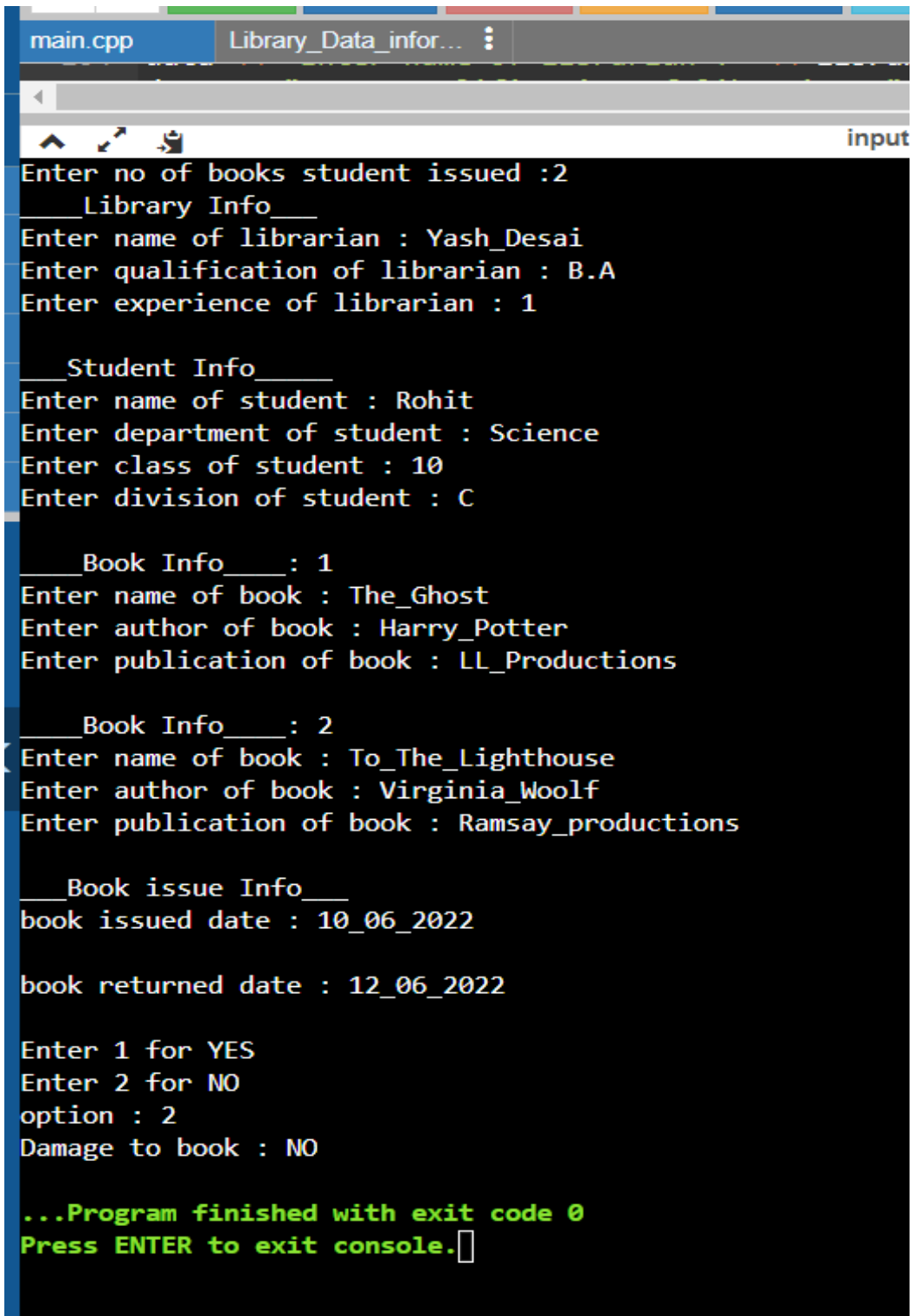
data << endl;

for(j=0;j<books;j++)
{
    data <<" ____Book info : " << j+1 <<" ____ "<<endl;
    data << "Enter name of book : " << book_info[j].book_name << endl;
    data << "Enter author of book : " << book_info[j].author << endl;
    data << "Enter publication of book : " << book_info[j].publication <<endl;
    data << "\n \n";
}

data << " ____Book issue Info ____ "<<endl;
data << "book issued date : " << library[i].book_issued_date <<endl;
data << "book returned date : " << library[i].book_returned_date <<endl;
data <<"Enter 1 for YES "<<endl;
data <<"Enter 2 for NO "<<endl;
data <<"option : ";
data << library[i].damage;
data << endl;
data << "Damage to book : ";
if(library[i].damage == 1)
{
    data<<"YES ";
}
if(library[i].damage ==2)
{
    data <<"NO ";
}
}
return 0;
}

```

OUTPUT :

A screenshot of a C++ program running in a terminal window. The window has two tabs: 'main.cpp' and 'Library\_Data\_infor...'. The terminal shows the program's output, which includes prompts for library and student information, book details, and issue/return dates. The program ends with a green message: '...Program finished with exit code 0' and 'Press ENTER to exit console.'.

```
main.cpp Library_Data_infor...  
input  
Enter no of books student issued :2  
____Library Info____  
Enter name of librarian : Yash_Desai  
Enter qualification of librarian : B.A  
Enter experience of librarian : 1  
  
____Student Info____  
Enter name of student : Rohit  
Enter department of student : Science  
Enter class of student : 10  
Enter division of student : C  
  
____Book Info____: 1  
Enter name of book : The_Ghost  
Enter author of book : Harry_Potter  
Enter publication of book : LL_Productions  
  
____Book Info____: 2  
Enter name of book : To_The_Lighthouse  
Enter author of book : Virginia_Woolf  
Enter publication of book : Ramsay_productions  
  
____Book issue Info____  
book issued date : 10_06_2022  
  
book returned date : 12_06_2022  
  
Enter 1 for YES  
Enter 2 for NO  
option : 2  
Damage to book : NO  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

The Word Document !

```
main.cpp  Library_Data_infor...  
1  ___Library Info___  
2  Enter name of librarian :Yash_Desai  
3  Enter qualification of librarian :B.A  
4  Enter experience of librarian :1  
5  
6  ___Student info___  
7  Enter name of student :Rohit  
8  Enter department of student :Science  
9  Enter class of student :10  
10 Enter division of student :C  
11  
12 ___Book info :1___  
13 Enter name of book :The_Ghost  
14 Enter author of book :Harry_Potter  
15 Enter publication of book :LL_Productions  
16  
17  
18 ___Book info :2___  
19 Enter name of book :To_The_Lighthouse  
20 Enter author of book :Virginia_Woolf  
21 Enter publication of book :Ramsay_productions  
22  
23  
24 ___Book issue Info___  
25 book issued date :10_06_2022  
26 book returned date :12_06_2022  
27 Enter 1 for YES  
28 Enter 2 for NO  
29 option : 2  
30 Damage to book : NO
```