



Computer Science (283) AISSCE Practical Examination 2019-20

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Roll No. -

Certificate

Roll No.					

Certified that Master **Anubhav Arya** of Grade **XII**th has completed project work in Computer Science on the topic "**Library Management**" prescribed by the Central Board of Secondary Education, New Delhi during the academic year **2019-20**.

Teacher's Signature

Principal's Signature



Library Management Programmed in C++ Environment

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Acknowledgement

I am grateful to all those who have guided me by all means in preparation of this record file.

I am highly thankful to my respected Computer Teacher Mr. Gajendra Singh Dhami for his invaluable guidance, help and constant encouragement in the completion of this record file.

I wish to acknowledge my	thanks to my
Principal	who contributed in the
preparation of this record	file indirectly by their
valuable moral support.	

Last but not least I am also thankful to all those whose names are not mentioned above but helped, encouraged and inspired me knowing or unknowing in doing this work.

Hardware and Software Requirements

Processor Required : P-IV or above

• RAM : Min. 512MB

• Operating System : Windows XP/7/10

Front End Development Tool: TURBO C++

Back End Tool : DATA FILE

Preface

The software uses interactive menu based environment created using Turbo C++. The software adds modifies and deletes records in data files through the front end menus which are easy to implement.

The software also provides highly sophisticated way of searching data from the database and provides windows as well as software help.

About the Project

This project uses the concept of Data File Handling and other concepts of Object Oriented Programming. Its aim is to collect various vital data of Library in a School. IT stores the data of book and borrowers in a highly detailed and structured form. Its interactive environment is easy to operate and handle. It will surly help in smooth execution of data stored in a Library.

This project helps to store data in a very compact easily accessible way instead of storing data in huge bulk of files.

Project Coding

```
#include<iostream.h>
#include<conio.h>
#include<stdio.h>
#include<fstream.h>
class book
 public:
 char name[1000];
 char author[1000];
 char section[1000];
 long serialno;
 long isbn;
 void enter()
   clrscr();
   cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
   cout<<"\t\t\t"<<"School Library Management"<<endl;
   cout<<"\nEnter name of book"<<endl;</pre>
   gets(name);
   cout<<"\nEnter name of author"<<endl;
   gets(author);
   cout<<"\nEnter section of the Library"<<endl;</pre>
   gets(section);
   cout<<"\nEnter Serial No."<<endl;
   cin>>serialno;
   cout<<"\nEnter ISBN No. of book"<<endl;
   cin>>isbn;
 void display()
   cout<<"\nSerial No. - "<<serialno<<endl;
   cout<<"\nName of Book - "<<name<<endl;
   cout<<"\nAuthor of Book - "<<author<<endl;
   cout << ``\nSection - ``<< section << endl;
   cout<<"\nISBN No. - "<<isbn<<endl;
 }
};
class Borrowers
```

```
public:
 char iname[100];
 long ID;
 char ibook[100];
 long serial;
 char date[100];
 void enter()
   clrscr();
   cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
   cout<<"\t\t"<<"School Library Management"<<endl;</pre>
   cout<<"\nEnter Borrower's ID No."<<endl;
   cin>>ID;
   cout<<"\nEnter name of Borrower"<<endl;
   gets(iname);
   cout<<"\nEnter name of book"<<endl;
   gets(ibook);
   cout<<"\nEnter Serial No."<<endl;</pre>
   cin>>serial;
   cout<<"\nEnter Date in DD/MM/YYYY format"<<endl;</pre>
   gets(date);
 void display()
   cout<<"\nBorrower's ID No. - "<<ID<<endl;
   cout<<"\nBorrower's Name - "<<iname<<endl;
   cout<<"\nName of Book - "<<ibook<<endl;
   cout<<"\nSerial No. - "<<serial<<endl;</pre>
   cout<<"\nDate of Borrowing - "<<date<<endl;</pre>
};
void libook();
void issue();
void create();
void add();
void disp1();
void del(long);
void dispsr1(long);
double calser();
void icreate();
void iadd();
void idisp1();
void idel(long);
void idispsr1(long);
double calser()
```

```
book Q;
 ifstream T;
 long sen;
 T.open("schlib.dat",ios::in|ios::binary);
 while(T.read((char*)&Q,sizeof(Q)))
   sen = Q.serialno;
 }
 T.close();
 return sen;
void main()
 clrscr();
 int ch;
 int c;
 char ch2;
 do
  clrscr();
  c=0;
  cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;</pre>
  cout<<"\t\t"<<"School Library Management"<<endl;</pre>
  cout<<"\n\nFor Book Management Press '1'"<<endl;
  cout<<"For Borrowers Management Press '2""<<endl;
  cin>>ch;
  switch(ch)
  {
        case 1:
        libook();
         break;
        case 2:
        issue();
         break;
        default:
         C++;
         break;
  if(c!=0)
  {
   clrscr();
   cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
   cout<<"\t\t"<<"School Library Management"<<endl;</pre>
   cout<<"\n\nWrong Choice";
   cout<<endl<<"To continue with Main Menu Press 'Y'"<<endl<<"To exit Press 'N'"<<endl;
   cin>>ch2;
  }
  else
  {
```

```
cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
    cout<<"\t\t\t"<<"School Library Management"<<endl;</pre>
    cout<<endl<<"To continue with Main Menu Press 'Y'"<<endl<<"To exit Press 'N'"<<endl;
    cin>>ch2;
  }
  while(ch2 =='y' || ch2 =='Y');
  cout<<"\t\t ***********
  cout<<"\t\t * Program Coding by - Anubhav Arya *"<<endl;
   cout<<"\t\t **********
   getch();
}
void libook()
 clrscr();
 int ch;
 char ch2;
 int c;
 long sr;
 do
 {
   clrscr();
   c=0;
   cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
   cout<<"\t\t"<<"School Library Management"<<endl<<endl;</pre>
   cout<<"Enter 1 - Reset or Create New Library"<<endl;
   cout<<"Enter 2 - Add New Book in Library"<<endl;
   cout<<"Enter 3 - Remove any book from Library"<<endl;</pre>
   cout<<"Enter 4 - Display all books"<<endl;
   cout<<"Enter 5 - Display Particular Book"<<endl;
   cin>>ch;
   switch(ch)
   {
        case 1:
          create();
          break;
        case 2:
          add():
          break;
        case 3:
          cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
          cout<<"\t\t"<<"School Library Management"<<endl;</pre>
          cout<<"\nEnter Serial No. to Remove Book"<<endl;
          cin>>sr;
          del(sr);
          break;
```

```
case 4:
          disp1();
          break;
        case 5:
          clrscr();
          cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
          cout<<"\t\t\t"<<"School Library Management"<<endl;</pre>
          cout<<"\nEnter Serial No. to display particular book"<<endl;</pre>
          dispsr1(sr);
          break;
        default:
          C++;
          break;
   }
   if(c!=0)
   {
        cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;</pre>
        cout<<"\t\t"<<"School Library Management"<<endl;</pre>
        cout<<"\n\nWrong Choice"<<endl;
        cout<<"\nlf you want to continue with Book Mangement Press 'Y'"<<endl;
        cout<<"If you want to go to Main Menu Press 'N'"<<endl;
        cin>>ch2;
   }
   else
        cout<<"\nlf you want to continue with Book Mangement Press 'Y'"<<endl;
        cout<<"If you want to go to Main Menu Press 'N'"<<endl;
        cin>>ch2;
   }
 while(ch2=='Y' || ch2=='y');
void issue()
 clrscr();
 int ch;
 char ch2;
 int c;
 double sr;
 do
 {
   clrscr();
   c=0;
   cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
   cout<<"\t\t"<<"School Library Management"<<endl;</pre>
   cout<<"Enter 1 - Reset or Create Borrower's Group"<<endl;</pre>
   cout<<"Enter 2 - Add New Borrower"<<endl;
```

```
cout<<"Enter 3 - Remove any Borrower"<<endl;
cout<<"Enter 4 - Display all Borrower"<<endl;
cout<<"Enter 5 - Display Particular Borrower"<<endl;</pre>
cin>>ch;
switch(ch)
{
     case 1:
       icreate();
       break;
     case 2:
       iadd();
       break;
     case 3:
       clrscr();
       cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
       cout<<"\t\t"<<"School Library Management"<<endl;</pre>
       cout<<"\nEnter ID No. to Remove Borrower"<<endl;
       cin>>sr;
       idel(sr);
       break;
     case 4:
       idisp1();
       break;
     case 5:
       clrscr();
       cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
       cout<<"\t\t\t"<<"School Library Management"<<endl;
       cout<<"\nEnter ID No. to display particular Borrower"<<endl;
       cin>>sr;
       idispsr1(sr);
       break;
     default:
       C++;
       break;
}
if(c!=0)
{
     clrscr();
     cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;</pre>
     cout<<"\t\t"<<"School Library Management"<<endl;</pre>
     cout<<"\n\nWrong Choice"<<endl;
     cout<<"\nlf you want to continue with Borrower Mangement Press 'Y'"<<endl;
     cout<<"If you want to go to Main Menu Press 'N'"<<endl;
     cin>>ch2;
}
else
{
     cout<<"\nlf you want to continue with Borrower Mangement Press 'Y'"<<endl;
     cout<<"If you want to go to Main Menu Press 'N'"<<endl;
     cin>>ch2;
```

```
}
 while(ch2=='Y' || ch2=='y');
void create()
  book Q;
  ofstream T;
  T.open("schlib.dat",ios::out|ios::binary);
  Q.enter();
  T.write((char*)&Q,sizeof(Q));
  T.close();
}
void add()
 long ser;
 ser = calser();
 book Q;
 ofstream T;
 clrscr();
 cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
 cout<<"\t\t\t"<<"School Library Management"<<endl;</pre>
 cout<<"\n\nLast Serial No. = "<<ser<<endl<<"\nMake sure you enter Serial No. by adding 1 to last Serial
No."<<endl;
 T.open("schlib.dat",ios::app|ios::binary);
 Q.enter();
 T.write((char*)&Q,sizeof(Q));
 T.close();
void disp1()
 clrscr();
 cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
 cout<<"\t\t"<<"School Library Management"<<endl;</pre>
 book Q;
 ifstream T;
 T.open("schlib.dat",ios::in|ios::binary);
 while(T.read((char*)&Q,sizeof(Q)))
   Q.display();
 }
 T.close();
void del(long n)
 book Q;
```

```
ifstream T;
 ofstream T1;
 T.open("schlib.dat",ios::in|ios::binary);
 T1.open("schlib1.dat",ios::in|ios::binary);
 while(T.read((char*)&Q,sizeof(Q)))
   if(n!=Q.serialno)
        T1.write((char*)&Q,sizeof(Q));
   }
 }
 T.close();
 T1.close();
 remove("schlib.dat");
 rename("schlib1.dat", "schlib.dat");
void dispsr1(long n)
 clrscr();
 cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
 cout<<"\t\t"<<"School Library Management"<<endl;</pre>
 book Q;
 ifstream T;
 int c=0;
 T.open("schlib.dat",ios::in|ios::binary);
 while(T.read((char*)&Q,sizeof(Q)))
   if(n==Q.serialno)
        Q.display();
        C++;
   }
 }
 if(c==0)
  clrscr();
  cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;</pre>
  cout<<"\t\t"<<"School Library Management"<<endl;</pre>
  cout<<"\nRecord not Found"<<endl;</pre>
 T.close();
//FROM HERE Borrower's FUNCTIONS STARTS
void icreate()
  Borrowers Q;
```

```
T.open("schiss.dat",ios::out|ios::binary);
  Q.enter();
  T.write((char*)&Q,sizeof(Q));
  T.close();
void iadd()
 Borrowers Q;
 ofstream T;
 T.open("schiss.dat",ios::app|ios::binary);
 Q.enter();
 T.write((char*)&Q,sizeof(Q));
 T.close();
void idisp1()
{
 clrscr();
 cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
 cout<<"\t\t"<<"School Library Management"<<endl;</pre>
 Borrowers Q;
 ifstream T;
 T.open("schiss.dat",ios::in|ios::binary);
 while(T.read((char*)&Q,sizeof(Q)))
   Q.display();
 T.close();
void idel(long n)
 Borrowers Q;
 ifstream T;
 ofstream T1;
 T.open("schiss.dat",ios::in|ios::binary);
 T1.open("schiss1.dat",ios::in|ios::binary);
 while(T.read((char*)&Q,sizeof(Q)))
 {
   if(n!=Q.ID)
   {
         T1.write((char*)&Q,sizeof(Q));
   }
 T.close();
 T1.close();
 remove("schiss.dat");
 rename("schiss1.dat", "schiss.dat");
```

```
void idispsr1(long n)
 clrscr();
 cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;
 cout<<"\t\t"<<"School Library Management"<<endl;</pre>
 Borrowers Q;
 int c=0;
 ifstream T;
 T.open("schiss.dat",ios::in|ios::binary);
 while(T.read((char*)&Q,sizeof(Q)))
 {
   if(n==Q.ID)
        Q.display();
        C++;
   }
 }
 if(c==0)
  clrscr();
  cout<<"\t\t"<<"Lucknow Public School, A-Block South City"<<endl;</pre>
  cout<<"\t\t"<<"School Library Management"<<endl;</pre>
  cout<<"\n\nRecord Not Found"<<endl;</pre>
 }
 T.close();
}
```

Project Output

Basically Program is divided into two parts:-

- 1. Book Management
- 2. Borrowers Management

We will firstly choose the Book Management Part as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

For Book Management Press '1'
For Issuers Management Press '2'
```

Now we will come across different options in Book Management Part as shown in output screen. We will choose the first option by entering '1' in screen to create new record of books in school library.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Enter 1 - Reset or Create New Library
Enter 2 - Add New Book in Library
Enter 3 - Remove any book from Library
Enter 4 - Display all books
Enter 5 - Display Particular Book

1
```

After choosing first option we will need to enter the details of book. When we are done with entering the details we come across two conditions.

- 1. To continue with Book Management
- 2. To quit for Main Menu

We will enter 'Y' to continue for Book Management as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Enter name of book
Inventors of World

Enter name of author
RV Gopal

Enter section of the Library
Science

Enter Serial No.
1365

Enter ISBN No. of book
123456789

If you want to continue with Book Mangement Press 'Y'
If you want to go to Main Menu Press 'N'
Y_
```

Now will again come back to Book Management Menu where we will choose second option i.e. "Add a new book" by entering '2' on screen. We will now enter the details of new book and we will continue for Book Management Menu by entering 'Y' as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Enter name of book
End of Life

Enter name of author
Henrik Wood

Enter section of the Library
Novels

Enter Serial No.
1378

Enter ISBN No. of book
123456798

If you want to continue with Book Mangement Press 'Y'
If you want to go to Main Menu Press 'N'
Y_
```

Now will again come back to Book Management Menu where we will choose third option i.e. "Remove any book" by entering '3' on screen. For example we will enter Serial No. of first book we entered i.e. 1365. Once we entered the details, that book will be removed from data and we will continue for Book Management Menu by entering 'Y' as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Enter Serial No. to Remove Book
1365

If you want to continue with Book Mangement Press 'Y'

If you want to go to Main Menu Press 'N'

Y
```

Now we will again come back to Book Management Menu where we will choose fourth option i.e. "Display all the books" by entering '4' on screen. After that all the books saved in data will be displayed and we will continue for Book Management Menu by entering 'Y' as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Serial No. - 1378

Name of Book - End of Life

Author of Book - Henrik Wood

Section - Novels

ISBN No. - 123456798

If you want to continue with Book Mangement Press 'Y'

If you want to go to Main Menu Press 'N'
```

At last will again come back to Book Management Menu where we will choose fifth option i.e. "Display a particular book" by entering '5' on screen. We will now enter the Serial No. of that book [Enter Serial No. - 1378] to view its details as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Serial No. - 1378

Name of Book - End of Life
Author of Book - Henrik Wood

Section - Novels

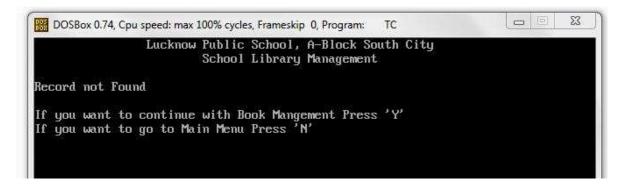
ISBN No. - 123456798

If you want to continue with Book Mangement Press 'Y'

If you want to go to Main Menu Press 'N'
```

In case we have entered the wrong Serial No. of the book or that book is not present in data. For example let us enter that Serial No. of that we have deleted earlier i.e. 1365. Then we will come across a message that "Record not found". This means that book is not present in record.

And this time we will quit the Book Management Menu to proceed for Main Menu by entering 'N' as shown in output.



We will again get two conditions -

- 1. To continue for Main Menu.
- 2. To quit from whole program.

We will enter 'Y' to continue for Main Menu as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

To continue with Main Menu Press 'Y'
To exit Press 'N'
-
```

After this we will choose second option i.e. **Borrowers Management Part** by entering '2' in Main Menu to proceed for Borrowers Management Menu.

Now we will come across different options in Borrowers Management Part as shown in output screen.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Enter 1 - Reset or Create Borrower's Group
Enter 2 - Add New Borrower
Enter 3 - Remove any Borrower
Enter 4 - Display all Borrower
Enter 5 - Display Particular Borrower
```

After choosing first option i.e. "Create Borrower's Group" by entering '1' on screen to create new record of borrowers. Now we need to enter the details of borrower. When we are done with entering the details we come across two conditions.

- 1. To continue with Borrowers Management
- 2. To quit for Main Menu

We will enter 'Y' to continue for Borrowers Management as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Enter Borrower's ID No.
1245

Enter name of Borrower
Arnav

Enter name of book
End of Life

Enter Serial No.
1378

Enter Date in DD/MM/YYYY format
93/06/2019

If you want to continue with Borrower Mangement Press 'Y'
If you want to go to Main Menu Press 'N'
Y
```

Now will again come back to Borrowers Management Menu where we will choose second option i.e. "Add a new borrower" by entering '2' on screen. We will now enter the details of new borrower and continue for Borrowers Management Menu by entering 'Y' as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program:
                                                                       Lucknow Public School, A-Block South City
                        School Library Management
Enter Borrower's ID No.
1284
Enter name of Borrower
Ayushi
Enter name of book
Inventors of world
Enter Serial No.
1365
Enter Date in DD/MM/YYYY format
07/06/2019
If you want to continue with Borrower Mangement Press
  you want to go to Main Menu Press
```

Now will again come back to Borrowers Management Menu where will choose third option i.e. "Remove any Borrower" by entering '3' on screen. For example we will enter ID No. of second borrower we entered i.e. 1284. Once we enter the ID No., that borrower will be removed from data and we will continue for Borrowers Management Menu by entering 'Y' as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Enter ID No. to Remove Borrower
1284

If you want to continue with Borrower Mangement Press 'Y'
If you want to go to Main Menu Press 'N'
Y_
```

Now we will again come back to Borrowers Management Menu where we will choose fourth option i.e. "Display all the borrowers" by entering '4' on screen. After that all the borrower's details saved in data will be displayed on screen and we will continue for Borrowers Management Menu by entering 'Y' as shown in output

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Borrower's ID No. - 1245

Borrower's Name - Arnav

Name of Book - End of Life

Serial No. - 1378

Date of Borrowing - 03/06/2019

If you want to continue with Borrower Mangement Press 'Y'

If you want to go to Main Menu Press 'N'
```

At last will again come back to Borrowers Management Menu where will choose fifth option i.e. "Display a particular Borrower" by entering '5' on screen. We will now enter the ID No. of that borrower [Enter ID No. - 1245] to view its details as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Borrower's ID No. - 1245

Borrower's Name - Arnav

Name of Book - End of Life

Serial No. - 1378

Date of Borrowing - 03/06/2019

If you want to continue with Borrower Mangement Press 'Y'

If you want to go to Main Menu Press 'N'

Y_
```

In case we have entered wrong ID No. of the borrower or that borrower's detail is not present in data. For example let us enter ID No. of that borrower which we have deleted earlier i.e. 1284. Then we will come across a message that "Record not found". This means that, that borrower's detail is not present in record. And this time we will quit the Borrowers Management Menu to proceed for Main Menu by entering 'N' as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

Record Not Found

If you want to continue with Borrower Mangement Press 'Y'
If you want to go to Main Menu Press 'N'
-
```

Since we have came at the end of program we will now choose second option i.e. "To exit" by entering 'N' on Screen as shown in output.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Lucknow Public School, A-Block South City
School Library Management

To continue with Main Menu Press 'Y'
To exit Press 'N'
```

And at last credit screen appears with the message – "Program Coding by – Anubhav Arya" as shown in output.