CHAPTER-7

Data File Handling

VERY SHORT/SHORT ANSWER QUESTIONS

1. What are input and output streams? What is the significance of fstream.h file?

Ans. Input stream: The stream that supplies data to the program is known as input stream.
Output stream: The stream that receives data from the program is known as output stream.
fstream.h file includes the definitions for the stream classes ifstream, ofstream and fstream. In C++ file input output facilities implemented through fstream.h header file.

2. Discuss the files stream classes defined inside fstream.h header file.

Ans. ifstream: can be used for read operations.
ofstream: can be used for write operations.
fstream: can be used for both read & write operations.

3. What are the steps involved in using a file in a C++ program?

Ans. In order to process files, follow these steps:
(i) Determine the type of link.
(ii) Declare a stream accordingly.
(iii) Link file with the stream
(iv) Process as required, and
(v) De-link the file with the stream.

4. Describe the various classes available for file operations.

Ans.

Class	Functions
filebuf	It sets the file buffers to read and write.
fstreambase	This is the base class for fstream, ifstream and ofstream classes.
ifstream	It provides input operations for file.
ofstream	It provides output operations.
fstream	It provides support for simultaneous input and output operations.

5. Discuss the two methods of opening a file within a C++ program. When is one method preferred over the other?

Ans. A file can be opened in two ways :-

a) Using the constructor of the stream class – This method is useful when only one file is used in the stream. Constructors of the stream classes ifstream, ofstream and fstream are used to initialize the file stream object with the file name. For example,

```
ifstream read_file("Names.Dat");
```

b) Using the function open() - This method is useful when we want to use different files in the stream. If two or more files are to be processed simultaneously, separate streams must be declared for each. For example,

```
ifstream ifl; //input stream ifl created
ifl.open("Names.Dat"); // file Names.Dat linked with ifl
```

Second method is preferred over first method when there is a situation to open more than one file.

6. When a file is opened for output what happens when
(i) the mentioned file does not exist.
(ii) the mentioned file does exist.

Ans. (i) Creates a new file.
(ii) the act of opening a file for output scraps it off so that output starts with a fresh file.

7. Explain how while (filin) statement detects the eof for a file i.e., connected to filin stream.

Ans. To detect end of file, without using EOF(), we may check whether the stream object has become NULL or not. For example,

```
while(filin){
……
}
```

The value in filin becomes zero when the end of file is reached, and the loop ends. Since reading occurs inside the loop, there will be no more attempts to read the file.

8. What role is played by file modes in file operations? Describe the various file mode constants and their meanings.

Ans. A file mode describes how a file is to be used: read it, write to it, append it, and so on. Different file modes constants and their meanings are as following:

Constant	Meaning
ios::in	Opens file for reading.
ios::out	Opens file for writing.
ios::ate	This seeks to end-of-file upon opening of the file.
ios::app	This causes all output to that file to be appended to the end.
ios::trunc	The contents of a pre-existing file by the same name to be destroyed and truncates the file to zero length.
ios::nocreate	Causes open() function to fail if the file does not already exist.
ios::noreplace	Causes open() function to fail if the file already exist.
ios::binary	Causes a file to be opened in binary mode.

9. Write a code snippet that will create an object called filout for writing, associate it with the filename STRS. The code should keep on writing strings to it as long as the user wants.

Ans.

```
#include<iostream.h>
#include<stdio.h>
#include<conio.h>
#include<fstream.h>
void main(){
    char c,fname[10];
    ofstream filout;
    filout.open("STRS");
    cout<<"Enter contents to store in file (Enter # to stop):\n";
    while((c=getchar())!='#')
    {
        filout<<c;
    }
    filout.close();
    getch();
}
```

10. How many file objects would you need to create to manage the following situations? Explain
(i) to process three files sequentially
(ii) to merge two sorted files into a third file

Ans.

```
i) 3
ii) 3
```

11. Both ios::ate and ios::app place the file pointer at the end of the file when it is opened. What then, is the difference between them?

Ans. Both ios::ate and ios::app place the file pointer at the end of the file when it is opened. The difference between the two is that ios::app lets you add data to the end of the file only, while the ios::ate mode when opened with ofstream allows you to write data anywhere in the file, even over old data.

12. What are the advantages of saving data in:
(i) binary form (ii) text form

Ans. (i) binary form:

- ✓ Binary files are faster and easier for a program to read and write than are text files.
- ✓ As long as the file doesn't need to be read by people or need to be ported to a different type of system, binary files are the best way to store program information.

(ii) text form:

- ✓ It can be read by people.

	✓ It can be ported to a different type of system.
13.	**When do you think text files should be preferred over binary files?**
Ans.	When file does need to be read by people or need to be ported to a different type of system, text files should be preferred over binary files.
14.	**Write a program that counts the number of characters up to the first $ in input and that leaves the $ in the input stream.**

Ans.	`#include<fstream.h>`
	`#include<stdio.h>`
	`#include<iostream.h>`
	`void main(){`
	`  char s[80],ch;`
	`  int count=0;`
	`  ifstream file("abc.txt");`
	`  while(!file.eof())`
	`  {  file.getline(s,80);`
	`  for(int i=0;i<80;i++)`
	`  {  if(s[i]=='$')`
	`  break;`
	`  count++;`
	`  }`
	`  };`
	`  cout<<count;`
	`  file.close();`
	`}`

15.	**Write a program that reads a text file and creates another file that is identical expect that every sequence of consecutive blank space is replaced by a single space.**

Ans.	`#include <fstream.h>`
	`#include <iostream.h>`
	`#include <ctype.h>`
	`#include <conio.h>`
	`void main(){`
	`  char ch;`
	`  int count=0;`
	`  ifstream in_stream;`
	`  ofstream out_stream;`
	`  clrscr();`
	`  in_stream.open("A.txt");`
	`  out_stream.open("B.txt");`
	`  while (!in_stream.eof())`
	`  {`
	`  ch = (char)in_stream.get( );`
	`  if(isspace(ch))`
	`  count++;`
	`  if(count >= 2)`
	`  {`
	`  ch=' ';`
	`  count = 0;`
	`  }`
	`  else`
	`  {`
	`  out_stream <<ch;`
	`  }`
	`  }`
	`}`

16. **Suggest the situation where write() and read() are preferred over get() and put() for file I/O operations. Support your answer with examples.**

Ans. The get() and put() functions perform I/O byte by byte. On the other hand, read() and write() functions let you read and write structures and objects in one go without creating need for I/O for individual constituent fields.
Example:

```
file.get(ch);
file.put(ch);
file.read((char *)&obj, sizeof(obj));
file.write((char *)&obj, sizeof(obj));
```

17. **Discuss the working of good() and bad() functions in file I/O error handling.**

Ans. good(): Returns nonzero (true) if no error has occurred. For instance, if fin.good() is true, everything is okay with the stream named as fi and we can proceed to perform I/O operations. When it returns zero, o further operations can be carried out.
bad(): Returns true if a reading or writing operation fails. For example in the case that we try to write to a file that is not open for writing or if the device where we try to write has no space left.

18. **What are the similarities and differences between bad() and fail() functions.**

Ans. Similarities: bad() and fail() both are error handling functions and return true if a reading or writing operation fails.
Differences: Both bad() and fail() return true if a reading or writing operation fails but fail() also returns true in the case that a format error happens, like when an alphabetical character is extracted when we are trying to read an integer number.

19. **How is the working of file I/O error handling functions associated with error-status flags?**

Ans The error-status flags store the information on the status of a file that is being currently used. The current state of the I/O system is held in an integer, in which the following flags are encoded:

Name	Meaning
eofbit	1 when end-of-file is encountered, 0 otherwise.
failbit	1 when non-fatal I/O error has occurred, 0 otherwise.
badbit	1 when fatal I/O error has occurred, 0 otherwise.
goodbit	0 value

20(a) **Observe the program segment given below carefully, and answer the question that follows:**

```
class Book
{     int Book_no;
      char Book_name[20];
    public:
      //function to enter Book details
      void enterdetails();
      //function to display Book details
      void showdetails();
      //function to return Book_no
      it Rbook_no() { return book_no; }
};
void Modify(Book NEW)
{     fstream File;
      File.open("BOOK.DAT",ios::binary|ios::in|ios::out);
      Book OB;
      int Recordsread=0,Found=0;
      while(!Found&&File.read((char*)&OB,sizeof(OB)))
      {     Recordsread++;
            if(NEW.RBook_no()==OB.RBook_OB())
            {  _______________     //Missing Statement
               File.write((char*)&NEW,sizeof(NEW));
               Found=1;
            }
            else
```

```
            File.write((char*)&OB,sizeof(OB));
      }
      if(!Found)
            cout<<"Record for modification does not exist";
            File.close();
}
```

If the function Modify() is supposed to modify a record in file BOOK.DAT with the values of Book NEW passed to its argument, write the appropriate statement for Missing Statement using seekp() or seekg(), whichever needed, in the above code that would write the modified record at its proper place.

Ans. `File.seekg(-1*sizeof(NEW),ios::cur);`

20(b)

```
int main()
{     char ch='A';
      fstream fileout("data.dat",ios::out);
      fileout<<ch;
      int p=fileour.tellg();
      cout<<p;
      return 0;
}
```

What is the output if the file content before the execution of the program is the string "ABC"?
(Note that " " are not part of the file).

Ans. 1

20(c)

(i) Write a user defined function in C++ to read the content from a text file NOTES.TXT, count and display the number of blank spaces present in it.

(ii) Assuming a binary file FUN.DAT is containing objects belonging to a class LAUGHTER (as defined below). Write a user defined function in C++ to add more objects belonging to class LAUGHTER at the bottom of it.

```
class LAUGHTER {   int Idno  //Identification number
                   char Type[5]; //LAUGHTER Type
                   char Desc[255]; //Description
                public:
                   void Newentry()
                   {  cin>>Idno;
                      gets(Type);
                      gets(Desc);
                   }
                  Void Showscreen()
                   {   cout<<Idno<<":"<<Type<<endl<<Desc<<endl;
                   }
               };
```

Ans.

```
(i) void countspace(){
      ifstream fins;
      fins.open("NOTES.TXT");
      char ch;
      int count=0;
      while(!fins.eof())
      {
          fin.get(ch);
          if(ch==' ')
             count++;
      }
      cout<<"Number of blank spaces"<<count;
      fin.close();
    }
(ii)
```

21.

```
int main()
```

```
{     char ch='A';
      fstream fileout("data.dat",ics::app);
      fileout<<ch;
      int p=fileout.tellg();
      cout<<p;
      return 0;
}
```

What is the output if the file content before the execution of the program is the string "ABC"?
(Note that " " are not part of the file).

Ans. 4

22(a) **Observe the program segment given below carefully, and answer the question that follows:**

```
class Labrecord
{     int Expno;
      char Expriment[20];
       char Checked;
       int Marks;
    public:
      //function to enter Expriment details
      void EnterExp();
      //function to display Expriment details
      void ShowExp();
      //fuction to retur Expno
      char RChecked() { return Checked; }
     //fuction to assign Marks
     void Assignmarks(int M)
     {   Marks=M;
     };
};
void ModifyMarks()
{     fstream File;
      File.open("Marks.DAT",ios::binary|ios::in|ios::out);
      Labrecord L;
      int Rec=0;
      while(File.read((char*)&L,sizeof(L)))
      {     if(L.RChecked()=='N')
                L.Assignmarks(0);
            else
                L.Assignmarks(10);
            _____     //statement 1
            _____     //statement 2
           Rec++;
      }
      File.close();
}
```

If the function ModifyMarks() is supposed to modify Marks for the records in file MARKS.DAT based on their status of the member Checked (containing value either 'Y' or 'N'). Write C++ statements for the statement 1 and statement 2, where statement 1 is required to position the file write pointer to an appropriate place in the file statement 2 is to perform the write operation with the modified record.

Ans.

```
Statement 1:
            File.seekp(-1*sizeof(L),ios::cur);
Statement 2:
            File.write((char*)&L,sizeof(L));
```

22(b) **Write a function in C++ to print the count of the word as an independent word in a text file STORY.TXT.**
For example, if the content of the file STORY.TXT is:

	There was a monkey in the zoo. The monkey was very naughty. Then the output of the program should be 2.

Ans.	`void wordcount(){`
	`ifstream fil("STORY.TXT");`
	`char word[30]; //assuming longest word can be 29 characters long`
	`int count=0;`
	`while(!fil.eof())`
	`{ cin>>word;`
	`if((strcmp("the",word)==0) && (strcmp("The",word)==0));`
	`count++;`
	`}`
	`fil.close();`
	`cout<<count;`
	`}`

22(c)	Given a binary file SPORTS.DAT, containing records of the following structure type:
	`struct Sports`
	`{ char Event[20];`
	`char Participant[10][30];`
	`};`
	Write a function in C++ that would read contents from the file SPORTS.DAT and creates a file named ATHLETIC.DAT copying only those records from SPORTS.DAT where the event name is "Athletics".

Ans.	`void copyfile(){`
	`ifstream fin;`
	`ofstream fout;`
	`fin.open("SPORTS.DAT",ios::in|ios::binary);`
	`fout.open("ATHELETIC.DAT",ios::out|ios::binary);`
	`Sports s1;`
	`while(!fin.eof())`
	`{ fin.read((char*)&s1,sizeof(s1));`
	`if(strcmp(s1.Event,"Athletics")==0)`
	`fout.write((char*)&s1,sizeof(s1));`
	`}`
	`fin.close();`
	`fout.close();`
	`}`

LONG ANSWER QUESTIONS

1(a)	Observe the program segment given below carefully and fill the blanks marked as statement 1 and Statement 2 using tellg() and seekp() functions for performing the required task.
	`#include<fstream.h>`
	`class Customer`
	`{`
	`long Cno;`
	`char Name[20],Mobile[12];`
	`public:`
	`//function to allow user to enter the Cno, Name, Mobile`
	`void Enter();`
	`//function to allow user to enter (modify) mobile number`
	`void Modify();`
	`//function to return value of Cno`
	`long GetCno() { return Cno;}`
	`};`
	`void ChangeMobile()`
	`{`

```
   Customer C;
   fstream F;
   F.open("CONTACT.DAT",ios::binary|ios::in|ios::out);
   long Cnoc;  //customer no. whose mobile number needs to be changed
   cin>>Cnoc;
   while(F.read((char*)&C,sizeof(c)))
   {
     If(Cnoc==C.GetCno())
     {
         C.Modify();
         //statement 1
         Int Pos= _____________   //to find the current position
                                  //of file pointer
         // statement 2
          _____________     //to move the file pointer to write the
                            //modified the record back on to the file
                           //for the desired Cnoc
         F.write((char*)&C,sizeof(c));
       }
    }
   File.close();
}
```

Ans.

```
Statement 1:
F.tellg() ;
Statement 2:
F.seekp(Pos-sizeof(C));
OR
F.seekp(-l*sizeof(C) ,ios::cur);
```

1(b) **Write a function in C++ to count the words to and the present in a text file "POEM.TXT".**
[Note. *that the words "to' and "the" are complete words.*]

Ans.

```
void COUNT ()
 {
            ifstream File;
            File. open (POEM.TXT);
            char Word[80] ;
            int Cl = 0, C2 = 0;
            while(!File.eof())
            {
                     File>>Word;
                     if (strcmp (Word, to) ==0)
                                 Cl++;
                     else if (strcmp (Word, the) ==0)
                                 C2++;
             }
          cout<<"Count of -to- in file:" <<Cl;
          cout<<"Count of -the- in file:"<<C2;
         File.close(); //Ignore
}
```

1(c). **Write a function in C++ to search and display details. of all trains, whose destination is "Delhi" from a binary file "TRAIN.DAT". Assuming the binary file is containing the objects of the following class.**

```
class TRAIN
 {
     int Tno;                  // Train Number
     char From[20];           // Train Starting Point
     char To[20];             // Train Destination
```

```
   public:
     char* GetFrom (){return From;}
     char* GetTo (){return To;}
     void Input () {cin>>Tno;gets(From);gets(To);}
     void Show () {cout<<Tno<<:<<From<<:<<To<<endl;}
};
```

Ans.

```
void Read ( )
 {
      TRAIN T;
       ifstream fin;
       fin. open (TRAIN.DAT, ios::binary);
       while(fin.read((char*)&T, sizeof(T)))
       {
            if(strcmp(T.GetTo() ,Delhi)==0)
            T.Show() ;
       }
       fin.close(); //Ignore
}
```

2. **Observe the program segment given below carefully, and answer the question that follows:**

```
class Candidate
{     long CId;          //Candidate's Id
      char CName[20];    //Candidate's Name
        float Marks;       //Candidate's Marks
   public:
      void Enter();
      void Display();
      void MarksChange();
                 //Funcion to change marks
      long R_CId() { return CId; }
};
void MarksUpdate(log ID)
{     fstream File;
      File.open("CANDIDATE.DAT",ios::binary|ios::in|ios::out);
      Candidate C;
      int Record=0,Found=0;
      while(!Found&&File.read((char*)&C,sizeof(C)))
      {     if(Id==C.R_CId())
            {     cout<<"Enter new Marks";
                  C.MarkChange();
                  ________________    //Statement 1
                  ________________    //statement 2
                  Found=1;
            }
            Record++;
      }
      if(found==1) cout<<"Recoed Updated";
            File.close();
}
```

Write the statement 1 to position the File Pointer at the beginning of the Record for which the Candidate's Id matches with the argument passed, ad statement 2 to write the updated Recode at that position.

Ans.

```
Statement 1:
            File.seekg()-1*sizeof(C),ios::cur);
Statement 2:
             File.write((char*)&C,sizeof(C));
```

3. **Write a function in C++ to count the number of uppercase alphabets present in a text file "ARTICLE.TXT".**

Ans.

```
int countupcase(){
      ifstream fin("ARTICLE.TXT");
      int count=0;
      char ch;
      while(!fin.eof())
      {     fin>>ch;
            if(isupper(ch))
                  count++;
      }
      fin.close();
      return count;
}
```

4. **Given a binary file TELEPHON.DAT, containing records of the following class Directory:**

```
class Directory
{     char Name[20];
      char Address[30];
      char AreaCode[5];
      char Phone_No[15];
    public:
      void Register();
      void Show();
      int CheckCode(char AC[])
      {     return strcmp(AreaCode,AC);  }
};
```

Write a function COPYABC() in C++, that would copy all those records having AreaCode as "123" from TELEPHONE.DAT to TELEBACK.DAT.

Ans.

```
void COPYABC(){
      ifstream fin("TELEPHON.DAT",ios::in|ios::binary);
      ofstream fout("TELEBACK.DAT",ios::out|ios::binary);
      Directory ph;
      while(!fin.eof())
      {     fin.read((char*)&ph,sizeof(ph));
            if(ph.checkcode("123")==0)
                  fout.write((char*)&ph,sizeof(ph));
      }
      fin.close();
      fout.close();
}
```

5. **Observe the program segment given below carefully, and answer the question that follows:**

```
class Team
{     long TId[10];    //Team's Id
      char TName[20];  //Team's Name
      float Points;    //Team's Points
    public:
      void Accept();
      void Show();
      void PointChange();   //Function to change Points
      long R_TId() {return TId; }
};
void ReplacePoints(long Id)
{     fstream File;
      File.open("TEAM.DAT",ios::binary|ios::in|ios::out);
      Team T;
      int Record=0;Found=0;
      while(!Found && File.read((char*)&T,sizeof(T)))
```

```
      {
            if(Id==T.R_TId())
            {     cout<<"Enter new Points";
                  T.PointsChange();
                  _________________     //Statement 1
                  _________________     //Statement 1
                  Found=1;
            }
            Record++;
            }
            if(found==1)
                  cout<<"Record Updated";
            File.close();
}
```

Write the statement 1 to position the File Pointer at the beginning of the Record for which the Team's Id matches with the argument passed, ad statement 2 to write the updated Recode at that position.

Ans.

```
Statement 1:
            File.seekg()-1*sizeof(T),ios::cur);
Statement 2:
             File.write((char*)&T,sizeof(T));
```

6. **Write a function in C++ to count the number of digits present in a text file "PARA.TXT".**

Ans.

```
void countdigit(){
      ifstream fil("PARA.TXT",ios::in);
      int count=0;
      char ch=fil.get();
      while(!fil.eof())
      {     if(isdigit(ch))
                  count++;
            ch=fil.get();
      }
      cout<<"no of digit: "<<count<<endl;
}
```

7. **Given a binary file CONSUMER.DAT, containing records of the following structure type**

```
class Consumer
{     char C_Name[20];
      char C_Address[30];
      char Area[25];
      char C_Phone_No[15];
   public:
      void Ledger();
      void Disp();
      int checkCode(char AC[])
      {   return strcmp(Area,AC);  }
};
```

Write a function COPYAREA() in C++, that would copy all those records having Area as "SOUTH" from CONSUMER.DAT to BACKUP.DAT.

Ans.

```
void COPYAREA(){
      ifstream fin("CONSUMER.DAT",ios::in|ios::binary);
      ofstream fout("BACKUP.DAT",ios::out|ios::binary);
      Consumer c;
      while(!fin.eof())
      {     fin.read((char*)&c,sizeof(c));
            if(c.checkcode("SOUTH")==0)
                  fout.write((char*)&c,sizeof(c));
      }
```

```
      fin.close();
      fout.close();
}
```

8. **Observe the program segment given below carefully, and answer the question that follows:**

```
class PracFile
{     int Pracno;
      char PracName[20];
            char TimeTaken;
            int Marks;
    public:
      //function to enter PracFile details
      void EnterPrac();
      //function to display PracFile details
      void ShowPrac();
      //function to return TimeTaken
      char RTime() { return TimeTaken; }
      //fuction to assign Marks
      void Assignmarks(int M)
      {   Marks=M;
      };
};
void AllocateMarks()
{     fstream File;
      File.open("MARKS.DAT",ios::in|ios::out);
      PracFile P;
      int Record=0;
      while(File.read((char*)&P,sizeof(P)))
      {     if(P.RTime()>50)
                P.Assignmarks(0);
            else
                P.Assignmarks(10);
            _____     //statement 1
            _____     //statement 2
           Record++;
      }
      File.close();
}
```

If the function AllocateMarks() is supposed to Allocate Marks for the records in file MARKS.DAT based on their value of member TimeTaken. Write C++ statements for the statement 1 and statement 2, where statement 1 is required to position the file write pointer to an appropriate place in the file statement 2 is to perform the write operation with the modified record.

Ans.

```
Statement 1: File.seekp((Record)*sizeof(P));
                          OR
             File.seekp(-1*sizeof(P),ios::cur);
Statement 2: File.write((char*)&P,sizeof(P));
```

9. **Write a function in C++ to print the count of the word is an independent word in a text file DIALOGUE.TXT.**
For example, if the content of the file DIALOGUE.TXT is:

This is his book. Is this good?

Then the output of the program should be 2.

Ans.

```
void wordcount
{     ifstream fin("DIALOGUE.TXT");
      char word[10];
      int wc=0;
      while(!fin.eof())
      {     fin>>word;
```

```
            if((strcmp(word,"Is")==0)||(strcmp(word,"is")==0))
                  wc++;
      }
      cout<<wc;
      fin.close();
}
```

10. **Given a binary file GAME.DAT, containing records of the following structure type**

```
struct Game
{     char GameName[20];
      char Participant[10][30];
};
```

Write a function in C++ that would read contents from the file GAME.DAT and creates a file named BASKET.DAT copying only those records from GAME.DAT where the event name is "Basket Ball".

Ans.

```
void CreateNewFile(){
      Game g1;
      ifstream fin;
      ofstream fout;
      fin.open("GAME.DAT",ios::in|ios::binary);
      fout.open("BASKET.DAT",ios::out|ios::binary);
      while(!fin.eof())
      {     fin.read((char*)&g1,sizeof(g1));
            if(strcmp(g1.GameName,"Basket Ball")==0)
                  fout.write((char*)&g1.sizeof(g1));
      }
      fin.close();
      fout.close();
}
```

11. **A file contains a list of telephone numbers in the following form:**

Arvind 7258031
Sachin 7259197
Karma 5119812

The names contain only one word the names and telephone numbers are separated by white spaces. Write program to read a file and display its contents in two columns.

Ans.

```
#include<fstream.h>
#include<conio.h>
void main(){
      ifstream fin;
      fin.open("telephone.txt");
      char ch;
      while(!fin.eof())
      {
            fin.get(ch);
            cout<<ch;
      }
      fin.close();
      getch();
}
```

12. **Write a program that will create a data file similar to the one mentioned in question 1 (type C). Use a class object to store each set of data.**

Ans. **Try to solve this problem.**

13. **Write a program that copies one file to another. Has the program to take the file names from the users? Has the program to refuse copy if there already is a file having the target name?**

Ans.

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

```
#include<fstream.h>
#include<stdlib.h>
void main(){
  ofstream outfile;
  ifstream  infile;
  char fname1[10],fname2[20];
  char ch,uch;
  clrscr( );
  cout<<"Enter a file name to be copied ";
  cin>> fname1;
  cout<<"Enter new file name";
  cin>>fname2;
  infile.open(fname1);
  if( infile.fail( ) )
  {
      cout<< " No such a file Exit";
      getch();
      exit(1);
  }
  outfile.open(fname2,ios::noreplace);
  if(outfile.fail())
  {
      cout<<"File Already Exist";
      getch();
      exit(1);
  }
  else
  {
      while(!infile.eof( ))
      {
          ch = (char)infile.get( );
          outfile.put(ch);
      }
  }
  infile.close( );
  outfile.close( );
  getch( );
}
```

14. **Write a program that appends the contents of one file to another. Have the program take the filenames from the user.**

Ans.

```
#include<iostream.h>
#include<conio.h>
#include<fstream.h>
#include<stdlib.h>
void main(){
  ofstream outfile;
  ifstream  infile;
  char fname1[10],fname2[20];
  char ch,uch;
  clrscr( );
  cout<<"Enter a file name from where to append ";
  cin>> fname1;
  cout<<"Enter the file name where to append";
  cin>>fname2;
  infile.open(fname1);
```

```
  if( infile.fail())
  {
      cout<< " No such a file Exit";
      getch();
      exit(1);
  }
  outfile.open(fname2,ios::app);
      while( !infile.eof())
      {
          ch = (char)infile.get();
          outfile.put(ch);
      }

  infile.close( );
  outfile.close( );
  getch( );
}
```

15. **Write a program that reads character from the keyboard one by one. All lower case characters get store inside the file LOWER, all upper case characters get stored inside the file UPPER and all other characters get stored inside OTHERS.**

Ans.

```
#include<iostream.h>
#include <ctype.h>
#include<conio.h>
#include <stdio.h>
#include<fstream.h>
void main(){
    char c,fname[10];
    ofstream filout1,filout2,filout3;
    filout1.open("UPPER.txt");
    filout2.open("LOWER.txt");
    filout3.open("OTHER.txt");
    cout<<"Enter contents to store in file (Enter # to stop):\n";
    while((c=getchar())!='#')
    {
        if(isupper(c))
        {
           filout1<<c;
        }
        else if(islower(c))
        {
           filout2<<c;
        }
        else
        {
           filout3<<c;
        }
    }
    filout1.close();
    filout2.close();
    filout3.close();
    getch();
}
```

16. **Write a program to search the name and address of person having age more than 30 in the data list of persons.**

Ans. Assuming the file "employee.dat" is already existing in binary format.

```
#include<iostream.h>
```

```
#include<conio.h>
#include <stdio.h>
#include<fstream.h>
class employee{
      char name[20];
      char address[20];
      int age;

      public:
            void showdata()
            {
                  cout<<"\nEmployee Name : ";
                  puts(name);
                  cout<<"\nEmployee Address : ";
                  puts( address);
            }
            int retage()
            {
                  return age;
            }
};
void search (){
          employee emp;
          ifstream ifs;
          ifs.open("employee.dat",ios::binary);
          while(ifs.read((char*)&emp,sizeof(emp)))
          {
                    if(emp.retage()>30)
                              emp.showdata();
          }
          ifs.close();
}
void main(){
    clrscr();
    search();
    getch();
}
```

17. **Write a program to maintain bank account using two files:**
(i) Master (accno, ac-holder's name, balance)
(ii) Transaction (accno, transactiondate, fromtype, amt)
The trantype can either be'd' for Deposit or 'w' for Withdraw, Amt stores the amount deposited or withdrawn. For each transaction the corresponding record in Master file should get updated.

Ans. **Try to solve this problem.**

18(i) **Write a function in C++ to count and display the number of lines starting with alphabet 'A' present in a text file "LINES.TXT".**
Example: If the file "LINES.TXT" contains the following lines:
A boy is playing there.
There is a playground.
An aeroplane is in the sky.
Alphabets and numbers are allowed in the password.
The function should display the output as 3.

Ans.

```
void countAlines(){
     ifstream fin("LINES.TXT");
      char str[80];
```

```
      int c=0;
      while(!fin.eof())
      {     fin.getline(str,80);
            if(str[0]=='a'||str[0]=='A')
                  c++;
      }
      fin.close();
      cout<<"Total lines starting with a/a are: "<<c<<endl;
}
```

18(ii) **Given a binary file STUDENT.DAT, containing records of the following class Student type**

```
class Student
{     char S_Admno[10];  //Admissio number of student
      char S_Name[30];   //Name of student
      int Percentage;   // Marks Percentage of student
    public:
      void EnterData()
      {     gets(S_Admno); gets(S_Name);
            cin>>Percentage;   }
            void DisplayData()
            {     cout<<setw(12)<<S_Admno;
                  cout<<setw(32)<<S_Name;
                  cout<<setw(3)<<Percentage<<endl;
            }
            int ReturnPercentage()
            { return Percentage; }
};
```

Write a function in C++, that would read contents of file STUDENT.DAT and display the details of those Students whose Percentage is above 75.

Ans.

```
void Dispmore75(){
     ifstream fin;
      fin.open("STUDENT.DAT",ios::in|ios::out|ios::binary);
      Student A;
      while(!fin.eof())
      {     fin.read((char*)&A,sizeof(A));
            if(A.ReturnPercentage()>75)
                  A.DisplayData();
      }
      fin.close();
}
```

19(a) **Observe the program segment given below carefully and fill the blanks marked as Line 1 and Line 2 using fstream functions for performing the required task.**

```
#include<fstream.h>
class Stock{
     long Ino; // Item Number
            char Item[20]; // Item Name
             int Qty; // Quantity
public:
     void Get(int);
     Get(int);// Function to enter the content
     void Show( ); // Function to display the content
     void Purchase(int Tqty)
     {
         Qty+ = Tqty; // Function to increment in Qty
     }
     long KnowIno( )
```

```
    { return Ino;}
};
void Purchaseitem(long PINo, int PQty)
    // PINo -> Info of the item purchased
    // PQty -> Number of items purchased
{
    fstream File;
     File.open("ITEMS.DAT",ios::binary|ios::in|ios::cut); int Pos=-1;
    Stock S;
    while (Pos== -1 && File.read((char*)&S, sizeof(S)))
        if (S.KnowInc( ) == PINo)
        {
            S.Purchase(PQty);      // To update the number of items
            Pos = File.tellg()- sizeof(S);
            //Line 1 : To place the file pointer to the required position
            ____________________________________;

            //Line 2 : To write the objects on the binary file
            ____________________________________;
        }
        if (Pos == -1)
            cout<<"No updation done as required Ino not found...";
        File.close( );
}
```

Ans.

```
Line 1:
        File.seekp(Pos);
Line 2:
        File.write((char*) &S, sizeof(S));
```

19(b) **Write a function COUNT_DO( ) in C++ to count the presence of a word „do" in a text file "MEMO.TXT".**

Example : If the content of the file "MEMO.TXT" is as follows:

I will do it, if you
request me to do it.
It would have been done much earlier.

The function COUNT_DO( ) will display the following message:

Count of -do- in file: 2

Ans.

```
void COUNT_TO( ){
             ifstream Fi1("MEMO.TXT");
             char STR[10];
             int c=0;
             while(Fi1.getline(STR,10,' '))
            {
                 if (strcmpi(STR, "do") = = 0)
                 C++;
            }
            Fi1.close( );
            cout<<"Count to -do- in file: "<<c<<endl;
}
```

19(c) **Write a function in C++ to read and display the detail of all the users whose status is 'A' (i.e. Active) from a binary file "USER.DAT". Assuming the binary file "USER.DAT" is containing objects of class USER, which is defined as follows:**

```
class USER{
    int Uid;              // User Id
    char Uname[20];      // User Name
    char Status;         // User Type: A Active I Inactive public:
```

```
  public:
    void Register( );      // Function to enter the content
    void show( );         // Function to display all data members
    char Getstatus( )
    {   return Status;   }
};
```

Ans.

```
void DisplayActive( ) {
        USER U;
        ifstream fin;
        fin.open("USER.DAT", ios:: binary);
        while (fin.read( ( char*) &U, sizeof(U)))
        {
             if (U.Getstatus( ) = = 'A')
             U.show( );
        }
        fin.close( );       // Ignore
}
```

20(a) **Observe the program segment given below carefully and fill the blanks marked as statement 1 and statement 2 using seekg(), seekp(), tellp(), and tellg() functions for performing the required task.**

```
#include<fstream.h>
class PRODUCT{
   int Pno;
   char Pname[20];
   int Qty;
 public:
   void ModifyQty();  //the function is to modify quantity of a PRODUCT
};
void PRODUCT::ModifyQty()
{
fstream File;
File.open("PRODUCT.DAT",ios::binary|ios::in|ios::out);
int MPno;
cout<<"product no to modify quantity:";
cin>>MPno;
while(File.read((char*)this,sizeof(PRODUCT)))
{
  if(MPno==Pno)
   {
     cout<<"present quantity:"<<Qty<<endl;
     cout<<"changed quantity:";
     cin>>Qty;
     int Position=   _____;     //statement 1
       _____ ;  //statement 2
     File.write((char*)this,sizeof(PRODUCT)); //Re-writing the record
   }
}
File.close();
}
```

Ans.

```
Statement 1:
int Position=File.tellg( );
Statement 2:
File.seekp(Position-sizeof(PRODUCT),ios::beg);
```

20(b) **Write a function in C++ to count the no of "Me" or "My" words present in a text file "DIARY.TXT".**
If the file "DIARY.TXT" content is as follows:

	My first book was Me and My family. It gave me chance to be known the world. **The output of the function should be** **Count of Me/My in file : 4**

Ans.	`void COUNT( ){`
	`  ifstream Fil("DIARY. TXT");`
	`  char STR[10];`
	`  int count = 0;`
	`  while(!Fil.eof( ))`
	`  {`
	`  Fil>>STR;`
	`  if(strcmp(STR,"Me")==0||strcmp(STR,"My")==0)`
	`  count++;`
	`  }`
	`  Cout<<"Count of Me/My in file :"<<count<<end1;`
	`  Fil.close( ); //Ignore`
	`}`

20(c)	**Write a function in C++ to search for a laptop from a binary file "LAPTOP.DAT" containing the objects of class LAPTOP (as defined below). The user should enter the Model No and the function should search and display the details of the laptop.** **`class LAPTOP{`** **`  long ModelNo;`** **`  float RAM,HDD;`** **`  char Details[120];`** **`public:`** **`  void StockEnter()`** **`  { cin>>Modelno>>RAM>>HDD;`** **`  gets(Details);`** **`  }`** **`  void StockDisplay()`** **`  { cout<<ModelNo<<RAM<<HDD<<Details<<endl;`** **`  }`** **`  long ReturnModelNo()`** **`  { return ModelNo;  }`** **`};`**

Ans.	`void Search( ){`
	`  LAPTOP L;`
	`  long modelnum;`
	`  cin>>modelnum;`
	`  ifstream fin;`
	`  fin.open("LAPTOP.DAT",ios::binary|ios::in);`
	`  while(fin.read((char*)&L,sizeof(L)))`
	`  {`
	`  if(L.ReturnModelNo( )==modelnum)`
	`  L.StockDisplay( );`
	`  }`
	`  fin.close(); //Ignore`
	`}`