

DATA FILE HANDLING

OUTSIDE DELHI : 2008

4.a) 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() ; //Function to change marks
    long R_Cid() {return Cid ;}
};
void MarksUpdate (long Id)
{   ifstream 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.MarksChange() ;
```

```
        File.seekp(File.tellp() - sizeof(C)); //Statement 1
        //File.seekp(Record * sizeof(C));
```

```
        File.write((char*)&C, sizeof(C)); //Statement 2
        //File.write((char*)&C, sizeof(Candidate));
```

```
        Found = 1 ;
    }
    Record++ ;
}
if (Found == 1)
    cout << "Record Updated" ;
File.close() ;
}
```

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

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

Solution:

```
void UpperLetters()
{   clrscr();
    ifstream fin("ARTICLE.TXT", ios::in);
    char ch;
    int uppercount=0;
    while(fin)
    {   fin.get(ch);
        if(isupper(ch))
            uppercount++;
    }
    cout<<"\nTotal number of Uppercase alphabets in the file = "<<uppercount;
    getch();
}
```

4.c) 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 TELEPHON.DAT to TELEBACK.DAT.

Solution:

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

DELHI : 2008

4.a) Observe the program segment given below carefully, and answer the question that follows :

```
class Applicant
{ long Aid ; // Applicant's Id
  char Name[20] ; // Applicant's Name
  float Score ; // Applicant's Score
public ;
  void Enroll() ;
  void Disp() ;
  void MarksScore() ; //Function to change Score
  long R_Aid() {return Aid ;}
};
void ScoreUpdate (long Id)
{ fstream File ;
  File.open ("APPLI.DAT" , ios :: binary | ios :: in | ios :: out) ;
  Applicant A ;
  int Record = 0, Found = 0 ;
  while (!Found && File.read( (char*)&C, sizeof(c) ))
  { if (Id == A.R_Aid())
    { cout << "Enter new Score" ;
      A.MarksScore() ;
      File.seekp(File.tellp() - sizeof(A)); //Statement 1
      //File.seekp(Record * sizeof(Applicant));
      File.write((char*)&A, sizeof(A)); //Statement 2
      Found=1;
    }
    Record++;
  }
  if (Found == 1)
    cout << "Record Updated" ;
  File.close() ;
```

}
Write the Statement1 to position the File Pointer at the beginning of the Record for which the Applicant's Id matches with the argument passed, and Statement 2 to write the updated record at that position.

4.b) Write a function in C++ to count the number of lowercase alphabets present in a text file "BOOK.TXT".

Solution:

```
void LowerLetters( )
{ clrscr( );
  ifstream fin("BOOK.TXT",ios::in);
  char ch;
  int lowercount=0;
  while(fin)
  {fin.get(ch);
   if(islower(ch))
    lowercount++;
  }
  cout<<"\nTotal number of Lowercase alphabets in the file = "<<lowercount;
  getch( );
}
```

4.c) Given a binary file PHONE.DAT, containing records of the following structure type

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

Write a function TRANSFER() in C++, that would copy all those records which are having AreaCode as "DEL" from PHONE.DAT to PHONBACK.DAT.

Solution:

```
void TRANSFER( )
{ ifstream fin("PHONE.DAT",ios::in,ios::binary);
  ofstream fout("PHONBACK.DAT",ios::out,ios::binary);
  phonlist P;
  while(fin) // or while(!fin.eof( ))
  {   fin.read((char*)&P,sizeof(P));
     if(P.CheckCode("DEL")== 0)
      fout.write((char*)&P,sizeof(P));
  }
  fin.close( );
  fout.close( );
}
```

DELHI : 2007

4.a) Observe the program segment given below carefully, and answer the question that follows :

```
class PracFile
{   int Pracno ;

    char PracName[20]

    int TimeTaken ;

    int Marks ;
```

```

public :

    void EnterPrac( ) ;//Function to enter PracFile details

    void ShowPrac( ) ;//Function to display PracFile details

    int RTime( )    //function to return Time Taken

    {return TimeTaken;}

    void Assignmarks(int M) //Function to assign Marks

    { Marks = M ;}

};

void AllocateMarks( )

{
    ifstream File ;

    File.open ("MARKS.DAT", ios :: binary | 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)

File.seekp(File.tellp( )-sizeof(P)); //Statement 1
//File.seekp(Record*sizeof(P));
File.write((char*)&P,sizeof(P)); //Statement 2
//File.write((char*)&P,sizeof(PracFile));
        Record++ ;

    }

    File . close( ) ;

}

```

If the function AllocateMarks() is supposed to Allocate Marks for the records in the file MARKS.DAT based on their value of the 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 and **statement 2** is to perform the write operation with the modified record.

4.b) Write a function in C++ to print the count of the word **is** as 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 book good ?

Then the output of the program should be 2.

Solution:

(Children, try this program as an assignment)

4.c) Given a binary file GAME.DAT, containing records of the following structure type

```
struct Game
{
    char GameName[20] ;
    char Participate[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 game name is "Basket Ball".

Solution:

```
void BPlayers()
{ ifstream fin("GAME.DAT",ios::in,ios::binary);
  ofstream fout("BASKET.DAT",ios::out|ios::binary);
  Game G;
  while(fin) // or while(!fin.eof( ))
  { fin.read((char*)&G,sizeof(Game));
```

```

        if(strcmp(G.GameName,"Basket Ball")== 0)
            fout.write((char*)&G,sizeof(G));
    }
    fin.close( );
    fout.close( );
}

```

OUTSIDE DELHI : 2007

4.a) Observe the program segment given below carefully, and answer the question that follows:

```

class Labrecord

{
    int Expno ;

    char Experiment[20] ;

    char Checked ;

    int Marks ;

public :

    void EnterExp( ) ; //function to enter Experiment details

    void ShowExp( ) ; //function to display Experiment details

    char RChecked( ) //function to return Expno

    {return Checked ;}

    void Assignmarks (int M) //function to assign Marks

    { 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)

        File.seekp(File.tellp()-sizeof(L)); //Statement 1
        //File.seekp(Rec*sizeof(L));
        File.write((char*)&L,sizeof(L)); //Statement 2
        //File.write((char*)&L,sizeof(Labrecord));
        Rec++ ;

    }
}

```

```
File.close( );  
}
```

If the function ModifyMarks () is supposed to modify marks for the records in the 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 and statement 2 is to perform the write operation with the modified record.

4.b) Write a function in C++ to print the count of the word **the** 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.

Solution:

(Children, try this program as an assignment)

4.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 create a file named ATHLETIC.DAT copying only those records from SPORTS.DAT where the event name is "Athletics".

Solution:

```
void AthletsList()  
{ ifstream fin("SPORTS.DAT", ios::in, ios::binary);  
  ofstream fout("ATHLETIC.DAT", ios::out | ios::binary);  
  Sports S;  
  while(fin) // or while(!fin.eof())
```

```

{   fin.read((char*)&S,sizeof(Sports));
    if(strcmp(S.Event,"Athletics")== 0)
        fout.write((char*)&S,sizeof(S));
}
fin.close( );
fout.close( );
}

```

DELHI : 2006

4.a)void main()

```

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

```

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 (Since, the file is opened in out mode, it loses all the previous content, if the file mode is app, then result will be 4)

4.b)Write a function to count the number of words present in a text file named "PARA.TXT". Assume that each word is separated by a single blank/space character and no blanks/spaces in the beginning and end of the file.

Solution:

```

void WordsCount( )
{ clrscr( );
  ifstream fin("PARA.TXT",ios::in);
  char ch;
  int Words=1;
  if(!fin)
  {   cout<<"No words at all in the file";
      exit(0);
  }
  while(fin)
  {fin.get(ch);
   if(ch== ' ')
       Words++;
  }
  cout<<"\nTotal number of Words in the file = "<<Words;
  getch( );
}

```

4.c)Following is the structure of each record in a data file named "COLONY.DAT"

```

struct COLONY

{   char Colony_Code[10] ;

    char Colony_Name[10]

    int No_of_People ;

} ;

```

Write a function in C++ to update the file with a new value of No_of_People. The value of Colony_Code and No_of_People are read during the execution of the program.

Solution:

```

void Update()
{
    fstream finout("COLONY.DAT",ios::in|ios::out);

    COLONY C;

    finout.seekg(0);

    while(finout)

    {
        finout.read((char *)&C, sizeof(C));

        cout<<"\nThe Colony Code is "<<C.Colony_Code;

        cout<<"\nThe Colony Name is"<<C.Colony_Name;

        cout<<"\nEnter the Number of People";

        cin>>C.No_of_People;

        finout.seekp(finout.seekp()-sizeof(C));

        finout.write((char *)&C,sizeof(C));

    }
}

```

OUTSIDE DELHI : 2006

```

4.a)void main()
    {
        char ch = 'A' ;
        fstream fileout("data.dat", ios :: app) ;
        fileout<<ch ;
        int p = fileout.tellg( ) ;
        cout << p ;
    }

```

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 (Since, the file is opened in app mode, it retains the previous content also, if the file mode is out, then result will be 0 since it will loose all the old content of the file.)

4.b)Write a function to count the number of blanks present in a text file named "PARA.TXT" .

Solution:

```

void BlanksCount()
{
    clrscr();
    ifstream fin("PARA.TXT",ios::in);
    char ch;
    int Blanks=0;
    if(!fin)
    {
        cout<<"No words at all in the file. So no blank spaces";
        exit(0);
    }
    while(fin)
    {
        fin.get(ch);
        if(ch== ' ')
            Blanks++;
    }
}

```

```

cout<<"\nTotal number of Blank Spaces in the file = "<<Blanks;
getch();
}

```

4.c) Following is the structure of each record in a data file named "PRODUCT.DAT" .

```

struct PRODUCT
{
    char Product_Code[10];
    char Product_Description[10];
    int Stock;
};

```

Write a function in C++ to update the file with a new value of Stock. The Stock and the Product_Code, whose Stock to be updated, are read during the execution of the program.

Solution:

```

void Update()
{
    fstream finout("PRODUCT.DAT",ios::in|ios::out);
    PRODUCT P;
    finout.seekg(0);
    while(finout)
    {
        finout.read((char *)&P, sizeof(P));
        cout<<"\nThe Product Code is "<<P.Product_Code;
        cout<<"\nThe Product Description is "<<P.Product_Description;
        cout<<"\nEnter the Stock: ";
        cin>>P.Stock;
        finout.seekp(finout.seekp()-sizeof(P));
        finout.write((char *)&P,sizeof(P));
    }
}

```

DELHI : 2005

4.a) Observe the program segment given below carefully, and answer the question that 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
    int Rbook_no() {return Book_no ;}
};
void Modify (Book NEW)
{   fstream File ;
    File.open("BOOK.DAT", ios :: binary | ios :: in | ios :: out) ;
    Book OB ;
    int Record = 0, Found = 0 ;
    while (!Found && File.read((char*) &OB, sizeof(OB) ) )
    {   Recordsread++ ;
        if (NEW.RBook_no() == OB.RBook_no( ))
        {   _____ //Missing Statement
            File.write((char*) &NEW, size of(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.

4.b) 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

4.c) Given a binary file STUDENT.DAT, containing records of the following class Student type

```

class Student
{   char S_Adjno[10] ;           //Admission number of student
    char S_Name[30] ;           //Name of student
    int Percentage ;           //Marks Percentage of student
public :
    void EnterData( )
    {   gets(S_Adjno) ; gets(S_Name) ; cin >> Percentage ;
    }
    void DisplayData( )
    {   cout << setw(12) << S_Adjno ;
        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.

OUTSIDE DELHI : 2005

4.a) Observe the program segment given below carefully , and answer the question that follows :

```
class Member
{
    int Member_no ;
    char Member_name[20] ;
public :
    //function to enter Member details
    void enterdetails ( ) ;
    //function to display Member details
    void showdetails ( ) ;
    //function to return Member_no
    int RMember_no ( ) {return Member_no ;}
};
void Update (Member NEW)
{
    fstream File ;
    File.open("MEMBER.DAT" , ios :: binary | ios :: in | ios :: out) ;
    Member OM ;
    int Recordsread = 0, Found = 0 ;
    while (!Found && File.read((char*) & OM, sizeof(OM)))
    {
        Recordsread++ ;
        if (NEW.RMember_no() == OM.RMember_no ( ))
        {
            _____ //Missing Statement
            File.write((char*) & NEW , sizeof(NEW) ;
            Found = 1 ;
        }
        else
            File.write((char*) & OM, sizeof(OM));
    }
    if (!Found)
        cout<<"Record for modification does not exist" ;
    File.close() ;
}
```

If the function Update() is supposed to modify a record in file MEMBER.DAT with the values of Member 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.

2.b) Write a function in C++ to count and display the number of lines not starting with alphabet 'A' present in a text file "STORY.TXT".

Example :

If the file "STORY.TXT" contains the following lines,

The rose is red.

A girl is playing there.

There is a playground.

An aeroplane is in the sky.

Numbers are not allowed in the password.

The function should display the output as 3

4.c) Given a binary file APPLY.DAT, containing records of the following class Applicant type 3

```
class Applicant
{
    char A_Rno[10] ;           //Roll number of applicant
    char A_Name[30] ;         //Name of applicant
    int A_Score ;             //Score of applicant
public :
    void Enrol()
    {
        gets(A_Rno) ; gets(A_Name) ; cin >> A_Score ;
    }
    void Status ( )
    {
        cout << setw(12) << A_Adjno ;
        cout << setw(32) << A_Name ;
    }
}
```

```

        cout << setw(3) << A_Score << endl ;
    }
    int ReturnScore() {return A_Score ;}
};

```

Write a function in C++, that would read contents of file APPLY.DAT and display the details of those Students whose A_Score is above 70.

DELHI : 2004

4.a) Assuming that a text file named FIRST.TXT contains some text written into it, write a function named **vowelwords()**, that reads the file FIRST.TXT and creates a new file named SECOND.TXT, to contain only those **words** from the file FIRST.TXT which start with start with a lowercase vowel (i.e. with 'a', 'e', 'I', 'o', 'u'). For example if the file FIRST.TXT contains

Carry umbrella and overcoat when it rains

Then the file SECOND.TXT shall contain:

umbrella and overcoat it

4.b) Assuming the class Computer as follows:

```

class computer
{
    char chiptype[10];
    int speed;
public:
    void getdetails( )
    {
        get(chiptype);
        cin>>speed;
    }
    void showdetails( )
    {
        cout<<"Chip"<<chiptype<<"Speed = "speed;
    }
};

```

4.c) Write a function **readfile()** to read all the records present in already existing binary file SHIP.DAT and display them on the screen, also count the number of records present in the file.

DELHI : 2003

4.a) 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.

4.b) 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 Showonscreen( )
    { cout<<Idno<<"."<<Type<<endl<<Desc<<endl;}
};

```

DELHI : 2002

4.a) What is the difference between pub() and write ()?

4.b) Write a C++ program, which initializes a string variable to the content "Time is a great teacher but unfortunately it kills all its pupils. Berlioz" and outputs the string one character at a time to the disk file OUT.TXT. You have to include all the header files if required.

DELHI : 2001

4.a) Distinguish between ios::out and ios::app.

The ios::out mode opens the file in output mode only.

The ios::app mode opens the file in append mode, where the file can be appended.

4.b) Consider the class declaration

```

class FLIGHT
{ protected:
    int flight_no;
    char destination[20];
    float distance;
public:

```

```

void INPUT( ); //To read an object from the keyboard
void write_file(int); //To write N objects into the file,
//Where N is passed as argument.
void OUTPUT( ); //To display the file contents on the monitor.
};

```

Complete the member functions definitions.

2000

Q 4 (a) Name two member functions of ofstream class.

Q 4 (b) Assuming the class DRINKS defined below, write functions in C++ to perform the following:

(i) Write the objects of DRINKS to a binary file.

(ii) Read the objects of DRINKS from binary file and display them on screen when DNAME has

value "INDY COLA".

```

class DRINKS
{
    int DCODE;
    char DNAME[13]; //Name of the drink
    int DSIZE; //Size in liters float DPRICE;public:
    void getdrinks( ) {cin>>DCODE>>DNAME>>DSIZE>>DPRICE;}
    void showdrinks( )
    {cout<<DCODE<<DNAME<<DSIZE<<DPRICE<<endl;}
    char *getname( ) {return DNAME;}
};

```

1999

Q 4 (a) Differentiate between functions read() and write().

Q 4 (b) Assuming the class FLOPPYBOX, write a function in C++ to perform following:

(i) Write the objects of FLOPPYBOX to a binary file.

(ii) Reads the objects of FLOPPYBOX from binary file and display them on screen.

```

class FLOPPYBOX
{ int size;
  char name[10];
public:
  void getdata() {cin>>size;gets(name);}
  void showdata() {cout<<size<<" "<<name<<endl;}
};

```

1998

Q 4(a) Write name of two member functions belonging to fstream class.

Q 4(b) Assuming the class EMPLOYEE given below, write functions in C++ to perform the following:

(i) Write the objects of EMPLOYEE to a binary file.

(ii) Read the objects of EMPLOYEE from binary file and display them on the screen.

```

class EMPLOYEE
{
    int ENO;
    char ENAME[10];
public:
    void GETIT( )
    {
        cin>>ENO;
        gets(ENAME);
    }
    void SHOWIT( )
    {
        cout<< ENO<<ENAME<<endl;
    }
};

```