Assignment 7

Class - S.E.IV.   Roll No = 2143 30
Batch - t4
DOP - 16/10/2020   DOS = 22/10/2020

Problem statement :-
Write a c++ program that creates an output file, writes information to it, closes the file, open it again as an input file and re read the information from the file.

Learning objectives:-
To learn the concept of file handling & strings in c++ programming.
To apply file handling on class and objects.

Learning Outcomes:-
To learn the concept of
Will be able to design a program in c++ using concept of file handling and strings.

Theory-:
Stream - A stream is a sequence of bytes. It acts as a source from which the input data can be obtained or as a destination to which the o/p data can be sent.

1. Input stream - It is used to had input from a data producer, such as a keyboard, a file or a network. The source stream that provides data to the program is called the input stream.

2. Output stream -: It is used to hold output for a particular data consumer such as a monitor a file or a printer. The destination stream that receives data from the program is called the output stream.

Ofstream - Output file stream and used to create and write into files.

ifstream - Input file stream and used to read from file.

fstream - it can create, write and read from files.

1) Opening file -:
Syntax -:
    void open (const char * filename; ios :: openmode);

   Mode -:
   ios :: app - Append mode, all output to file to be
                 appended to the end.
   ios :: in - Open file for reading
   ios :: out - Open file for writing
   ios :: trunc - if file already exits, content will be
   truncated before opening file.

2) Closing a file -:
TO close file when not in use.
Syntax:
        fstream object_name ;
        object_name. close();

3) Writing to file :-

   Syntax -:

   fstream obj_name ;
   obj_name. Write ((char *)+ class obj , Sizeof (Class. obj))

iv) Reading from a file -:

   Syntax -:

   fstream obj ;
   Class-name obj1 ;
   obj.read ((char *)+ obj1 , sizeof (obj1)) ;

* Psuedocode -:

* ADT of class Student.

class student
     char name[30];
     int roll ;
     Void getdata() // Take data of student.

     void showdata() // show data of student
     int search ()

* int main()
     fstream obj.
     Obj.open (" student.txt", ios :: in || ios::out | ios:: bi
     if (Obj.fail())
          exit (1)

```
While(1)
    read choice
    if choice == y'
        red read student_data
    else
        break.
Display   1. show
          2. search
          3. Exit.
Read choice.
Switch (choice):
    case(1):
        obj.seekg(0, ios::beg)
        While(obj.Eof ==1)
        {
            obj.read((char*)&s, sizeof(s))
            s.showdata();
        }
    case(2)
        Read number to be search.
        if(s.search (number)
            s.showdata();
        break;
    case(3):
        Exit(1)
```

Test cases :-

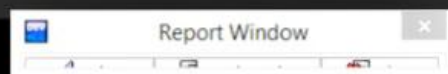| No.	Description	Input	Expected output	Actual O./P	Result.
1.	1. Show 2. Search 3. Exit.	Name: ABC Roll - 72 ch = 2. Sr - 25	Roll no. not found	Roll no. not found	Pass
2.	1. Show 2. Search 3. Exit	Name: ABC Roll - 52 ch = 1	Name : ABC Roll = 52	Name · ABC Roll - 52	Pass

* Conclusion :-
We learnt to implement file handling with class and object.

```cpp
 1  #include<stdio.h>
 2  #include<fstream>
 3  #include<iostream>
 4  using namespace std;
 5  class Student
 6  {
 7      public:
 8          char name[20];
 9          int roll;
10          void getdata()
11          {
12              cout<<"\nEnter name : ";
13              cin.getline(name,18);
14              cout<<"\nEnter roll : ";
15              cin>>roll;
16              cin.ignore(1);
17          }
18          void putdata()
19          {
20              cout<<"Name : "<<name<<"\nRoll : "<<roll<<endl<<endl;
21          }
22  };
23  int main()
24  {
25      fstream fobj;
26      fobj.open("myfile.txt",ios::in|ios::out|ios::binary);
27      Student obj;
28      int i,count=0,choice;
29      char ch;
30      while(1)
31      {
32          cout<<"\n!!!!Enter Choice!!!!\n\n";
```
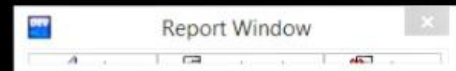
Report Window

```cpp
        cout<<"\nEnter 1 to add Data";
        cout<<"\nENter 2 to find Data";
        cout<<"\nEnter 3 to show all data";
        cout<<"\nEnter 0 to exit";
        cout<<"\n\nChoice : ";
        cin>>choice;
        cin.ignore(1);
        switch(choice)
        {
            case 1:
            {
                while(1)
                {
                    count++;
                    obj.getdata();
                    fobj.write((char *)&obj,sizeof(obj));
                    cout<<"\nEnter y to continue or n \n";
                    cin>>ch;
                    cin.ignore(1);
                    if(ch!='y')
                    {
                        break;
                    }
                }
                break;
            }
            case 2:
            {
                int num=0;
                fobj.seekg(0,ios::beg);
                cout<<"\nEnter Roll No Student to show data : ";
                cin>>choice;
```

```cpp
62          fobj.seekg(0,ios::beg);
63          cout<<"\nEnter Roll No Student to show data : ";
64          cin>>choice;
65          while(fobj.eof()==0)
66          {
67              fobj.read((char *)& obj,sizeof(obj));
68              if(obj.roll==choice)
69              {
70                  num++;
71                  obj.putdata();
72                  break;
73              }
74
75          }
76          if(num==0)
77          {
78              cout<<"\nEnter Roll no not found\n\n";
79          }
80          break;
81      }
82      case 3:
83      {
84          fobj.seekg(0,ios::beg);
85          cout<<"\n--------Student Data--------\n";
86          for(i=0;i<count;i++)
87          {
88              fobj.read((char *)& obj,sizeof(obj));
89              obj.putdata();
90          }
91          break;
92      }
93      case 0:
```
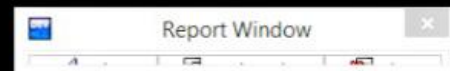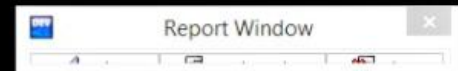
Report Window

```cpp
                    {
                        cout<<"\nEnter Roll no not found\n\n";
                    }
                    break;
                }
            case 3:
                {
                    fobj.seekg(0,ios::beg);
                    cout<<"\n--------Student Data--------\n";
                    for(i=0;i<count;i++)
                    {
                        fobj.read((char *)& obj,sizeof(obj));
                        obj.putdata();
                    }
                    break;
                }
            case 0:
                {
                    fobj.close();
                    exit(1);
                }
            default :
                {
                    cout<<"\nInvalid choice\n";
                }
            }

        }
    return 0;
}
```

```
F:\Ganesh\DEV CPP\program\oop5.exe                                  –  □   ×

!!!!Enter Choice!!!!

Enter 1 to add Data
ENter 2 to find Data
Enter 3 to show all data
Enter 0 to exit

Choice : 1

Enter name : ganesh

Enter roll : 30

Enter y to continue or n
y

Enter name : amit

Enter roll : 45

Enter y to continue or n
n

!!!!Enter Choice!!!!

Enter 1 to add Data
ENter 2 to find Data
Enter 3 to show all data
Enter 0 to exit

Choice : 2

Enter Roll No Student to show data : 30
Name : ganesh
Roll : 30

!!!!Enter Choice!!!!

Enter 1 to add Data
ENter 2 to find Data
Enter 3 to show all data
Enter 0 to exit

Choice : 2

Enter Roll No Student to show data : 2

Enter Roll no not found

!!!!Enter Choice!!!!
```

```
Enter roll : 30

Enter y to continue or n
y

Enter name : amit

Enter roll : 45

Enter y to continue or n
n

!!!!Enter Choice!!!!

Enter 1 to add Data
ENter 2 to find Data
Enter 3 to show all data
Enter 0 to exit

Choice : 2

Enter Roll No Student to show data : 30
Name : ganesh
Roll : 30

!!!!Enter Choice!!!!

Enter 1 to add Data
ENter 2 to find Data
Enter 3 to show all data
Enter 0 to exit

Choice : 2

Enter Roll No Student to show data : 2

Enter Roll no not found

!!!!Enter Choice!!!!

Enter 1 to add Data
ENter 2 to find Data
Enter 3 to show all data
Enter 0 to exit

Choice : 3

----------Student Data----------
Name : amit
Roll : 45
```