ASSIGNMENT 8

Aim:-

Department maintains a student information. The file contains roll number, name, division and address. Allow user to add, delete information of student. Display information of particular employee. If record of student does not exist an appropriate message is displayed. If it is, then the system displays the student details. Use sequential file to main the data.

Objective:-

To Display information of particular employee. If record of student does not exist an appropriate message is displayed. If it is, then the system displays the student details. Use sequential file to main the data.

Theory:-

- **"r" –** Searches file. If the file is opened successfully fopen( ) loads it into memory and sets up a pointer which points to the first character in it. If the file cannot be opened fopen( ) returns NULL.
- **"w" –** Searches file. If the file exists, its contents are overwritten. If the file doesn't exist, a new file is created. Returns NULL, if unable to open file.
- **"a" –** Searches file. If the file is opened successfully fopen( ) loads it into memory and sets up a pointer that points to the last character in it. If the file doesn't exist, a new file is created. Returns NULL, if unable to open file.
- **"r+" –** Searches file. If is opened successfully fopen( ) loads it into memory and sets up a pointer which points to the first character in it. Returns NULL, if unable to open the file.
- **"w+" –** Searches file. If the file exists, its contents are overwritten. If the file doesn't exist a new file is created. Returns NULL, if unable to open file.
- **"a+" –** Searches file. If the file is opened successfully fopen( ) loads it into memory and sets up a pointer which points to the last character in it. If the file doesn't exist, a new file is created. Returns NULL, if unable to open file.

As given above, if you want to perform operations on a binary file, then you have to append 'b' at the last. For example, instead of "w", you have to use "wb", instead of "a+" you have to use "a+b". For performing the operations on the file, a special pointer called File pointer is used which is declared as

```
FILE *filePointer;

So, the file can be opened as

filePointer = fopen("fileName.txt", "w")
```

The second parameter can be changed to contain all the attributes listed in the above table.

- **Reading from a file –**
  The file read operations can be performed using functions fscanf or fgets. Both the functions performed the same operations as that of printf and gets but with an additional parameter, the file pointer. So, it depends on you if you want to read the file line by line or character by character.
  And the code snippet for reading a file is as:

```
FILE * filePointer;

filePointer = fopen("fileName.txt", "r");

fscanf(filePointer, "%s %s %s %d", str1, str2, str3, &year);
```

- **Writing a file –**:
  The file write operations can be perfomed by the functions filePointerrintf and filePointeruts with similarities to read operations. The snippet for writing to a file is as :

```
FILE *filePointer ;

filePointer = fopen("fileName.txt", "w");

filePointerrintf(filePointer, "%s %s %s %d", "We", "are", "in", 2012);
```

- **Closing a file –**:
  After every successful fie operations, you must always close a file. For closing a file, you have to use fclose function. The snippet for closing a file is given as :
- ```
  FILE *filePointer ;
  ```
- ```
  filePointer= fopen("fileName.txt", "w");
  ```
- ```
  ---------- Some file Operations -------
  ```

```
fclose(filePointer)
```

Code:-

```cpp
    #include <iostream>
#include<fstream>
#include<string>
using namespace std;
class student
{
    int id;
    string name,div,addr;
public:
    void set_info()
    {
        cout<<"Enter roll no.: ";
```

```
        cin>>id;
        cout<<"Enter name: ";
        cin>>name;
        cout<<"Enter division: ";
        cin>>div;
        cout<<"Enter address: ";
        cin>>addr;
    }
    void show_info()
    {
        cout<<"The name is "<<name<<" and the roll no is "<<id<<endl;
    }
    void write_record(student obj)
    {
        ofstream fout;
        fout.open("sample.txt",ios::binary|ios::app);
        fout.write((char*)&obj,sizeof(obj));
        fout.close();
        cout<<"Data written\n";
    }
    void read_record(int id)
    {
        ifstream fin;
        student obj;
        int loc,i=0;
        fin.open("sample.txt",ios::binary);
        fin.seekg(0, ios::beg);
        while(fin.read((char*)&obj,sizeof(obj)))
        {
            loc=sizeof(obj)*i;
            fin.seekg(loc, ios::beg);
            fin.read((char*)&obj,sizeof(obj));
            obj.show_info();
            if(obj.id==id)
            {
                obj.show_info();
                cout<<"This\n";
                break;
            }
            i++;
        }
        if(obj.id!=id)
        {
                cout<<"Error 404! Record not found\n";
        }
    }
};
int main()
{
    char op;
    do
    {
        int c;
        cout<<"=====================Menu====================\n";
```

```
        cout<<"1] Add record\n2] Search record\n3] Delete record\n";
        cout<<"_____\n";
        cout<<"Enter your choice: ";
        cin>>c;
        switch(c)
        {
            case 1: {
                        student s;
                        s.set_info();
                        s.write_record(s);
                    }
                    break;
            case 2: {
                        int id;
                        student s;
                        cout<<"Enter roll no. of record you wish to
search\n";
                        cin>>id;
                        s.read_record(id);
                    }
                    break;
            default:cout<<"Invalid\n";
        }
        cout<<"Do you wish to go again?(y/n): ";
        cin>>op;
    }while(op=='y' || op=='Y');
    return 0;
}
```

Output Screenshot:-

"C:\Users\Dell\Downloads\main (5).exe"

```
=====================Menu=====================
1] Add record
2] Search record
3] Delete record
_____
Enter your choice: 1
Enter roll no.: 23
Enter name: tanuj
Enter division: c
Enter address: xyz
Data written
Do you wish to go again?(y/n): y
=====================Menu=====================
1] Add record
2] Search record
3] Delete record
_____
Enter your choice: 2
Enter roll no. of record you wish to search
23
The name is tanuj and the roll no is 11
The name is tanuj and the roll no is 23
The name is tanuj and the roll no is 23
This
Do you wish to go again?(y/n): y
=====================Menu=====================
1] Add record
2] Search record
3] Delete record
_____
Enter your choice: 3
Invalid
Do you wish to go again?(y/n): n

Process returned 0 (0x0)   execution time : 97.777 s
Press any key to continue.
```