Lab-12

Title: File handling in C++

Objective:

To be familiar with file handling in C++

Theory:

- **File handling and its importance**
- **File input and output streams**
- **Stream class Hierarchy**

1. Write a program to input Book_name, Publication and price. Now store these information in a file named “Library.dat” and display it.

```
#include<iostream>
#include<fstream>
using namespace std;
class Book{
        private:
                char bname[20];
                char pub[20];
                float price;
        public:
                void get_data(){
                        cout<<"Enter the name of book"<<endl;
                        cin>>bname;
                        cout<<"Enter the name of publication"<<endl;
                        cin>>pub;
                        cout<<"Enter the price of book"<<endl;
                        cin>>price;
                }
                void show_data(){
                        cout<<"Book name:"<<bname<<endl;
                        cout<<"Publication name:"<<pub<<endl;
                        cout<<"price of book;"<<price<<endl;
                }
};
int main(){
        Book b1;
        fstream file;
        file.open("book.dat",ios::in|ios::out);
        cout<<"Enter the detail of books"<<endl;
        b1.get_data();
        file.seekg(0);
        cout<<"Detailed store in file are"<<endl;
        file.read((char*)&b1,sizeof(b1));
        b1.show_data();
        file.close();
        return 0;
}
```

2. Write a single program to implement the following details: ✓ Create a file named “fruits” and write Apple, Mango, Banana to the file and read from the file and display it. ✓ Create a file named “vegetable” and Write Potato, Cauliflower, Cabbage to the file and read from the file and display it

```
#include<iostream>
#include<fstream>
using namespace std;
int main(){
        ofstream fout;
        fout.open("fruits");
        fout<<"Apple"<<endl;
        fout<<"Mango"<<endl;
        fout<<"Banana"<<endl;
        fout.close();
        fout.open("vegetable");
        fout<<"potato"<<endl;
        fout<<"cauliflower"<<endl;
        fout<<"cabbage"<<endl;
        fout.close();
        char line[50];
        ifstream fin;
        fin.open("fruits");
        cout<<"content of fruit file"<<endl;
        while(fin){
                fin.getline(line,50);
                cout<<line<<endl;
        }
        fin.close();
        fin.open("Vegetable");
        cout<<"content vegetable file"<<endl;
        while(fin){
                fin.getline(line,50);
                cout<<line<<endl;
        }
        fin.close();
        return 0;
}
```

3. Write a program that stores the object of student class. (Assume that data members are roll, name and university_name) into a file and read values from the file and display the data in console.

```
#include<iostream>
#include<fstream>
using namespace std;
class student{
        private:
                int roll;
                char name[20];
                char uname[20];
        public:
                void read_data(){
                cout<<"Enter the roll"<<endl;
                cin>>roll;
                cout<<"Enter the name of student"<<endl;
                cin>>name;
                cout<<"Enter the university name"<<endl;
                cin>>uname;}
                void write_data(){
                        cout<<"Roll:"<<roll<<endl;
                        cout<<"Name of student:"<<name<<endl;
                        cout<<"Name of university:"<<uname<<endl;
                }
};
int main(){
        student st1;
        fstream file;
        file.open("student.dat",ios::in|ios::out|ios::binary);
        cout<<"Enter the detail of student"<<endl;
        st1.read_data();
        file.write((char*)&st1,sizeof(st1));
        file.seekg(0);
        cout<<"Details of student store in file are:"<<endl;
        file.read((char*)&st1,sizeof(st1));
        st1.write_data();
        file.close();
        return 0;
}
```

4. Write a C++ program to input records of n students(name, address and roll) and save to the file. Display the record of only those student whose address is “Kathmandu” after reading from the file.

```
#include<iostream>
#include<cstring>
#include<fstream>
using namespace std;
class Student{
        private:
                char name[20];
                char address[20];
                int roll;
        public:
                void read_data(){
                cout<<"Enter the name of student"<<endl;
                cin>>name;
                cout<<"Enter the address of student "<<endl;
                cin>>address;
                cout<<"Enter the roll"<<endl;
                cin>>roll;}
                void write_data(){
                        if(strcmp(address,"kathmandu")==0){
                        cout<<"Name of student:"<<name<<endl;
                        cout<<"Address of student:"<<address<<endl;
                        cout<<"Roll:"<<roll<<endl;}       }
};
int main(){
        Student st[100];
        int n;
        cout<<"Enter number of student "<<endl;
        cin>>n;
        fstream file;
        file.open("employee.dat",ios::in|ios::out|ios::binary);
        cout<<"Enter the detail of n student "<<endl;
        for(int i=0;i<n;i++){
        st[i].read_data();
        file.write((char*)&st[i],sizeof(st[i]));}
        file.seekg(0);
        cout<<"Details of student store in file whose address is kathmandu :"<<endl;
        for(int i=0;i<n;i++){
        file.read((char*)&st[i],sizeof(st[i]));
        st[i].write_data();}
        file.close();
        return 0;}
```

5. Create a class named Employee with data members: emp_id, name, position and salary. Now, input the records of n employees and store them in a file named “employee.dat”. After writing the data to the file, read the records from the file and display the information of those employees whose salary is greater than 25,000.

```
#include<iostream>
#include<fstream>
using namespace std;
class Employee{
        private:
                int emp_id;
                char name[20];
                char position[20];
                float salary;
        public:
                void read_data(){
                cout<<"Enter the emp_id"<<endl;
                cin>>emp_id;
                cout<<"Enter the name of employee"<<endl;
                cin>>name;
                cout<<"Enter the position of employee"<<endl;
                cin>>position;
                cout<<"Enter the salary of employee"<<endl;
                cin>>salary;
}
                void write_data(){
                        if(salary>25000.0){
                        cout<<"emp_id:"<<emp_id<<endl;
                        cout<<"Name of employee:"<<name<<endl;
                        cout<<"position of employee:"<<position<<endl;
                        cout<<"Salary:"<<salary<<endl;
                        }       }
};
int main(){
        Employee e[100];
        int n;
        cout<<"Enter number of employee"<<endl;
        cin>>n;
        fstream file;
        file.open("employee.dat",ios::in|ios::out|ios::binary);
        cout<<"Enter the detail of n employee"<<endl;
        for(int i=0;i<n;i++){
        e[i].read_data();
        file.write((char*)&e[i],sizeof(e[i]));}
        file.seekg(0);
```

```
        cout<<"Details of employee store in file whose salary is greater than  25000 are:"<<endl;
        for(int i=0;i<n;i++){
        file.read((char*)&e[i],sizeof(e[i]));
        e[i].write_data();}
        file.close();
        return 0;
}
```