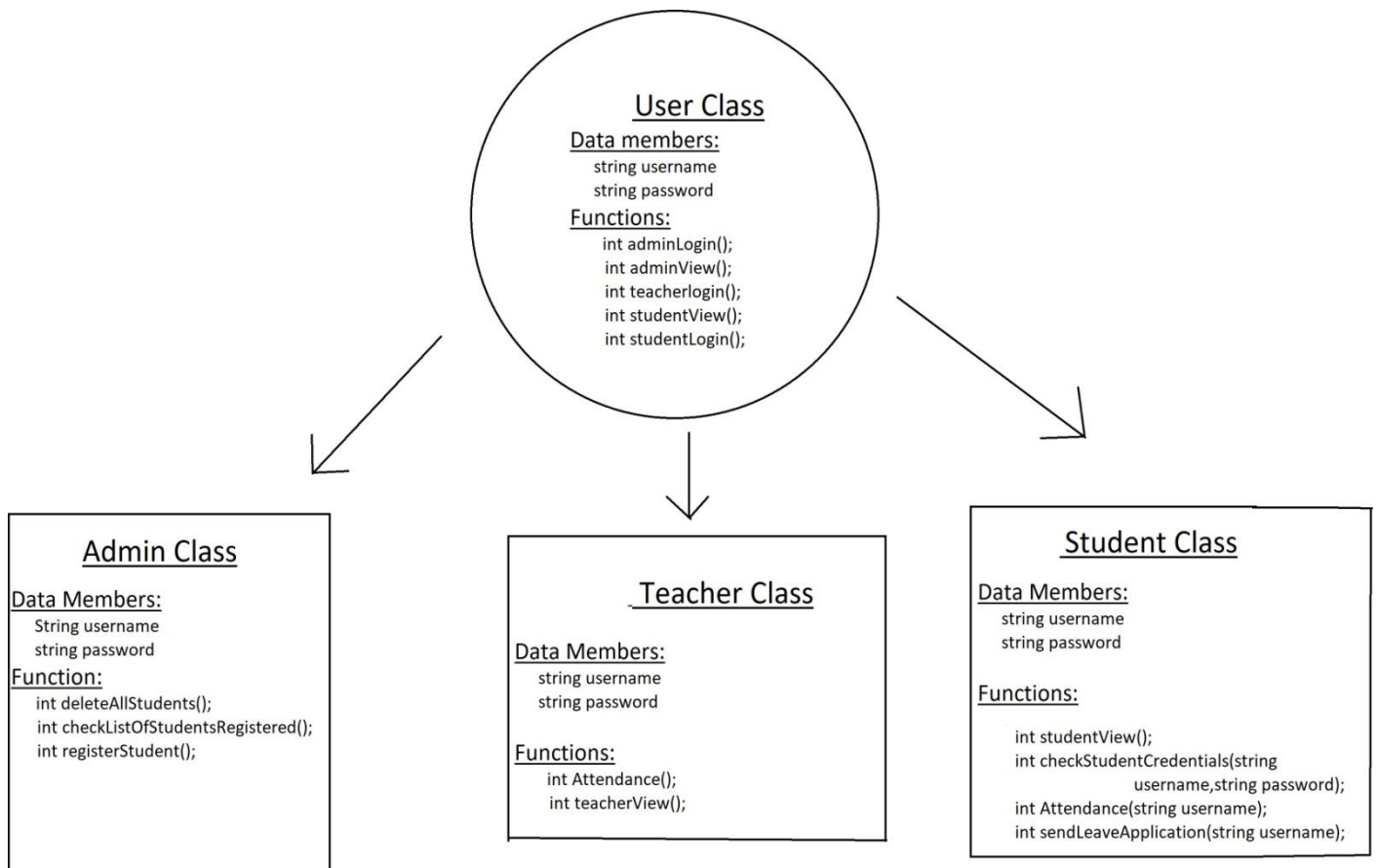


**Project:**

# **Attendance Management**

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# Basic Structure of project



## Explanation:

### # Admin Role

- int deleteAllStudents() - can delete all data from the database
- int checkListOfStudentsRegistered() - displays list of students in the class along with their present attendance.

- `int registerStudent()` - Register new students taking various details of the student.

## # Teacher Role

- `int Attendance()` - Mark attendance of each student of the class.

## # Student Role

- `int checkStudentCredentials(string username, string password)` - This function allows authentication of each student by checking their username and password.
- `int Attendance(string username)` - Displays total no. attendance of the student along with attendance percentage.
- `int sendLeaveApplication(string username)` - It allows sending application for leave.

### **OOP Topic covered:**

- Classes
- Objects
- Polymorphism
- Inheritance

## File Structure:

- **User.h** - It is the main header file containing the **class user**.
- Teacher
  - **teacher\_header.h** - header file containing teacher class
  - **teacher.cpp** - contains all functions of teacher class
- Student
  - **student\_header.h** - header file containing student class
  - **student.cpp** - contains all functions of student class
- Admin
  - **admin\_header.h** - header file containing admin class
  - **admin.cpp** - contains all functions of admin class

- **db.dat** - main database containing all registered students file name
- **attendance.dat** - contains all the leave application submitted by the students along with name and date.

# Implementation of code

## User.h

```
#include <iostream>
#include <string>
#include <fstream>
#include <cstring>
#include <time.h>
#include <stdlib.h>
#include <sstream>
using namespace std;

class user{
    private:
        string username,password;
    public:
        int adminLogin();
        int adminView();
        int teacherlogin();
        int studentView();
        int studentLogin();
};
```

## teacher header.h

```
#include "user.h"
using namespace std;
class teacher: public user
{
```

```

    string username,password;
public:
    int Attendance();
    int teacherView();};

```

## **Student header.h**

```

#include "user.h"
using namespace std;

class student : public user
{
    string username,password;
public:
    int studentView();
    int checkStudentCredentials(string username,string
password);
    int Attendance(string username);
    int sendLeaveApplication(string username);
};

```

## **Admin header.h**

```

#include "user.h"

class Admin : public user
{
    private:
        string username,password;
public:
    int deleteAllStudents();
    int checkListOfStudentsRegistered();
    int registerStudent();
};

```

## Admin.cpp

```
#include <iostream>
#include <string>
#include <fstream>
#include <cstring>
#include <time.h>
#include <typeinfo>
#include <stdlib.h>
#include <sstream>
#include "admin_header.h"

using namespace std;

int adminView();
int deleteAllStudents();
int checkListOfStudentsRegistered();
int adminLogin();
int registerStudent();
int m = 0;
int k = 0;

int adminLogin()
{
    system("cls");
    cout<<"\n ----- Admin Login
-----";
```

```

string username;
    string password;

    cout<<"\n Enter username : ";
    cin>>username;
    cout<<"\n Enter password : ";
    cin>>password;

    if(username=="admin" && password=="admin")
    {
        adminView();
        getchar();
    }
    else
    {
        cout<<"\n Error ! Invalid Credintials..";
        cout<<"\n Press any key for main menu ";
        getchar();getchar();
    }

    return 0;

}

int adminView()
{
    int goBack = 0;
    while(1)
    {
        system("cls");
        cout<<"\n 1 Register a Student";
        cout<<"\n 2 Delete All students name registered";
    }
}

```



```

        cout<<"\n 3 Check List of Student registered by
username";
        cout<<"\n 0. Go Back <- \n";
        int choice;

        cout<<"\n Enter you choice: ";
        cin>>choice;

        switch(choice)
        {
            case 1: registerStudent();break;
            case 2: deleteAllStudents(); break;
            case 3: checkListOfStudentsRegistered(); break;
            case 0: goBack = 1;break;
                    default: cout<<"\n Invalid choice. Enter
again ";

                                getchar();
        }

        if(goBack == 1)
        {
            break;
        }

    }

    return 0;

}

int deleteAllStudents()

```

```

{
    remove("db.dat");
    cout<<"\n Please any key to continue..";

    getchar(); getchar();
    return 0;
}

int checkListOfStudentsRegistered() {
    cout<<"\n ----- Check List of Student Registered by
Username-----";

    //check if record already exist..
    ifstream read;
    read.open("db.dat");

    if(read)
    {
        int recordFound =0;
        string line;
        while(getline(read, line)) {

            char name[100];
            strcpy(name, line.c_str());
            string filename = name;
            cout<<"\n"<<filename;

            int total_lines = 0;
            ifstream read1;
            read1.open(filename.c_str(), ios::app);
            string line;
            while(getline(read1, line)) {
                ++ total_lines;
            }
        }
    }
}

```

```

    }
    read1.close();
    ifstream read;
    read.open(filename.c_str(), ios::app);
    string l;
    if(read)
    {
        int line_no = 0;
        while (line_no != total_lines && getline(read,
1)) {

            ++line_no;
        }
        if (line_no == total_lines) {
            cout<<"-> "<<l<<"\n";
            read.close();
            // char name[100];
            // strcpy(name, line.c_str());
            // char onlyname[100];
            // strncpy(onlyname, name, (strlen(name) - 4));
            // cout<<" \n " << onlyname;

        }
        read.close();
    }
    else
    {
        cout<<"\n No Record found : (";
    }

    cout<<"\n Please any key to continue..";
    getchar(); getchar();

```

```

    return 0;
}

int registerStudent()
{
    cout<<"\n ----- Form to Register Student-----\n";

    string name, username, password, rollno, branch;
    int total;

    cout<<"\n Enter Name : ";    cin>>name;

    cout<<"\n Enter Username : ";    cin>>username;

    cout<<"\n Enter password : ";    cin>>password;

    cout<<"\n Enter rollno : ";    cin>>rollno;
    getchar();

    cout<<"\n Enter branch : ";    cin>>branch;
    cout<<"\n Enter initial number of presents :"; cin>>m;

    //check if record already exist..
    ifstream read;
    read.open("db.dat");

    if(read)
    {
        int recordFound =0;
        string line;

```

```

        while(getline(read, line)) {
            if(line == username+".dat" )
            {
                recordFound = 1 ;
                break;
            }
        }
        if(recordFound == 1)
        {
            cout<<"\n Username already Register. Please choose
another username ";
            getchar(); getchar();
            read.close();
            return 0;
        }
    }
    read.close();

    ofstream out;
    out.open("db.dat", ios::app);
    out<<username+".dat"<<"\n";
    out.close();

    ofstream out1;
    string temp = username+".dat";
    out1.open(temp.c_str());
    out1<<name<<"\n";    out1<<username<<"\n";
out1<<password<<"\n";
    out1<<rollno<<"\n";    out1<<branch<<"\n";

    out1<<m<<"\n";

    out1.close();

```

```

        cout<<"\n Student Registered Successfully !!";

        cout<<"\n Please any key to continue..";
        getchar(); getchar();
        return 0;
}

```

## Teacher.cpp

```

#include <iostream>
#include <string>
#include<bits/stdc++.h>
#include <fstream>
#include <cstring>
#include <time.h>
#include <typeinfo>
#include <stdlib.h>
#include <sstream>

#include "teacher_header.h"

int Attendance();
int teacherView();
int teacherlogin();

int teacherlogin()
{
    system("cls");

```

```

        cout<<"\n ----- Teacher Login
-----";

        string username;
        string password;

        cout<<"\n Enter username : ";
        cin>>username;
        cout<<"\n Enter password : ";
        cin>>password;

        if(username=="teacher" && password=="teacher")
        {    teacherView();
            getchar();
        }
        else
        {
            cout<<"\n Error ! Invalid Credintials..";
            cout<<"\n Press any key for main menu ";
            getchar();getchar();
        }

        return 0;

}

```

```

int Attendance()
{    ifstream read;
    read.open("db.dat");

    if(read)
    {        int recordFound =0;

```

```

    string line;
    while(getline(read, line)) {

        char name[100];
        strcpy(name, line.c_str());
        string filename = name;

int total_lines = 0;
        ifstream read1;
        read1.open(filename.c_str(), ios::app);
        string line;
        while(getline(read1, line)) {
            ++ total_lines;
        }
    read1.close();

    ifstream read;
    read.open(filename.c_str(), ios::app);
    // ifstream read;
    // read.open("db.dat");
    cout<<"name:"<<filename<<endl;
    int c;
    cout<<"1: present:"<<"\t"<<"0 : absent:"<<endl;
    cout<<"enter choice:"<<endl;
    cin>>c;
    switch(c)
    {
        case 1:
            { string line;
              if(read)
              {
                  int line_no = 0;

```



```

        while (line_no != total_lines && getline(read,
line)) {

            ++line_no;
        }
        if (line_no == total_lines) {
            int i;
            istringstream(line)>>i;
            i++;

            ofstream out1;
            string temp = name;
            out1.open(temp.c_str(), ios::app);
            out1<<i<<"\n";

        }
        }
        break;
    }
    case 0:
        break;

}

read.close();
}

}
read.close();

cout<<"\n Please any key to continue..";

getchar();getchar();

```

```

return 0;
}

```

```

int teacherView()
{
    int goBack = 0;
    while(1)
    {
        system("cls");
        cout<<"\n 1 Mark Attendance";
        cout<<"\n 0. Go Back <- \n";
        int choice;

        cout<<"\n Enter you choice: ";
        cin>>choice;

        switch(choice)
        {
            case 1: Attendance();break;
            case 0: goBack = 1;break;
            default: cout<<"\n Invalid choice. Enter
again ";

                        getch();
        }

        if(goBack == 1)
        {

```

```
        break;
    }

}

return 0;

}
```

## **Student.cpp**

```
#include <iostream>
#include <string>
#include <fstream>
#include <cstring>
#include <time.h>
#include <typeinfo>
#include <stdlib.h>
#include <sstream>

#include "student_header.h"

using namespace std;

int studentView();
int studentLogin();
int checkStudentCredentials(string userName, string password);
int adminLogin();
int teacherlogin();
int Attendance(string username);
int sendLeaveApplication(string username);
```

```

int total=10;


//student part
int student::studentView()
{
    cout<<"\n Enter username : ";
    cin>>username;

    cout<<"\n Enter password : ";
    cin>>password;

    int res = checkStudentCredentials(username, password);

    if(res == 0)
    {
        cout<<"\n Invalid Credentials !!";
        cout<<"\n Press any key for Main Menu..";
        getch(); getch();
        return 0;
    }

    int goBack = 0;
    while(1)
    {

        system("cls");
        cout<<"\n 1 Count my Attendance";
        cout<<"\n 2 Send a leave application";
        cout<<"\n 0. Go Back <- \n";
    }
}

```

```

    int choice;

    cout<<"\n Enter you choice: ";
    cin>>choice;

    switch(choice)
    {
        case 1: Attendance(username); break;
        case 2: sendLeaveApplication(username);break;
        case 0: goBack = 1;break;
        default: cout<<"\n Invalid choice. Enter
again ";

                getchar();
    }

    if(goBack == 1)
    {
        break;
    }

}

}

```

```

int studentLogin()
{
    student s;          // creating object of class studnet
    system("cls");
    cout<<"\n ----- Student Login
-----";

    s.studentView();
    return 0;
}

```

```
}
```

```
int student::checkStudentCredentials(string username, string
password)
{

    ifstream read;
    read.open("db.dat");
    int recordFound = 0;
    if (read) {
        string line;
        string temp = username + ".dat";
        while(getline(read, line)) {
            if(line == temp)
            {
                recordFound = 1;
            }
        }
    }
    read.close();
    if(recordFound == 1)
    {
        ifstream read;
        string filename = username + ".dat";
        read.open(filename.c_str(), ios::app);
        int line_number = 0;
        string line;
        while (line_number != 3 && getline(read, line))
        {
            ++line_number;
        }
        if(password == line)
            return 1;
    }
}
```

```

        else
            return 0;
    }

}

```

```

int student::Attendance(string username)
// Function OVERLOADING
{
    int total_lines = 0;
    string filename = username+".dat";

    ifstream read;
    read.open(filename.c_str(), ios::app);
    string line;
    while(getline(read,line)){
        ++ total_lines;
    }

    read.close();

    ifstream read1;
    read1.open(filename.c_str(), ios::app);
    if(read1)
    {
        int line_no = 0;

        while (line_no != total_lines && getline(read1, line)) {
++line_no;
        }
    }
}

```

```

    if (line_no == total_lines) {

        cout<<"\nTotal present: "<<line;
        int i;
        istringstream(line) >> i;
        cout<<"\nPercentage of attendance :\t"<<
(i*100/total)<<"%";
    }
}

cout<<"\n Please any key to continue..";

getchar();getchar();

return 0;
}

int student::sendLeaveApplication(string username)
{
    char add[100];
    cout<<"\n Write your application here: ";
    getchar();
    cin.getline(add, 100);

    time_t now = time(0);
    tm *ltm = localtime(&now);

    ofstream out;
    out.open("application.dat", ios::app);

```



```

        out<<add<<" ->
"<<ltm->tm_mday<<"/"<<1+ltm->tm_mon<<"/"<<1900+ltm->tm_year<<
-> "<<username<<"\n";
        out.close();
        cout<<"\n Application successfully sent !!";
        cout<<"\n Please any key to continue..";
        getchar();
        return 0;
}

```

```
// Main Function
```

```

int main(int argc, char** argv) {
    while(1)
    {
        system("cls");

        cout<<"\t\t\t\t\t Attendance Management System \n";

        cout<<"-----\n\n";

        cout<<"1. Student Login\n";
        cout<<"2. Admin Login\n";
        cout<<"3. teacher Login\n";
        cout<<"0. Exit\n";
        int choice;
        cout<<"\n Enter you choice: ";
        cin>>choice;
        switch(choice)
        {
            case 1: studentLogin(); break;

```

```

case 2: adminLogin(); break;
case 3: teacherlogin();break;
case 0:
    while(1)
    {
        system("cls");
        cout<<"\n Are you sure, you want to exit? y
| n \n";

        char ex;
        cin>>ex;
        if(ex == 'y' || ex == 'Y')
            exit(0);
        else if(ex == 'n' || ex == 'N')
        {
            break;
        }
        else{

            cout<<"\n Invalid choice !!!";
            getchar();

        }
    } break;

default: cout<<"\n Invalid choice. Enter again ";
        getchar();

    }

}

return 0;

}

```

**Outputs:-**