Project:
Attendance Management

Team Members

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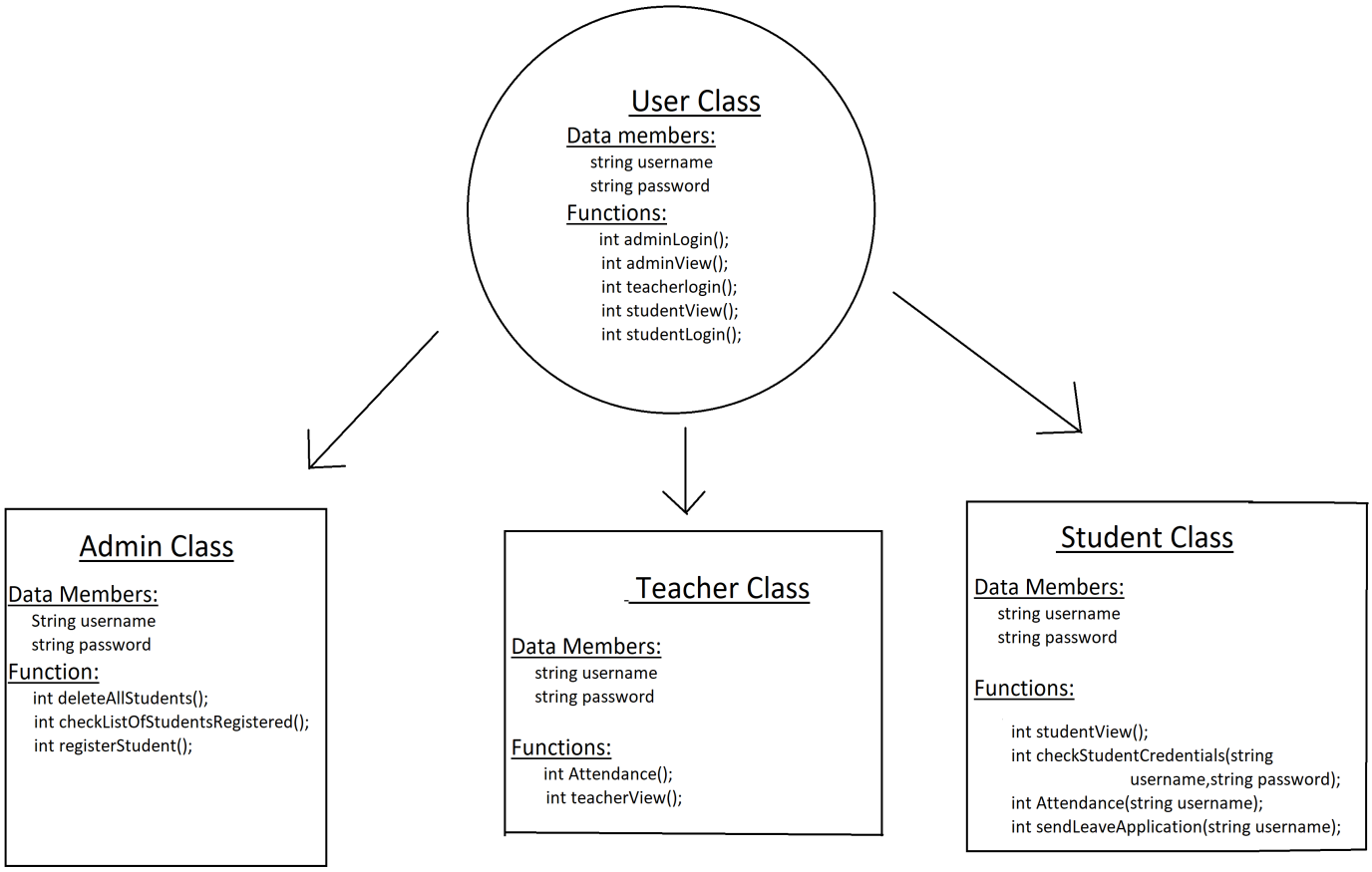
Basic Structure of project



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,
l)) {
               ++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 ";
                     getchar();
       }

       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..";
  getchar(); getchar();
  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;
}
```