Project Report

Object Oriented Programming Semester- 2

**Name of Project**: Student data management system

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**Description**:

The Student data management system allows the user to enter data like Name, Roll no. , Class , Course , Contact of Multiple students then user decide what he/she wants to do with this data .

User can Enter the data, Show the data of students, Search a particular student, Update the data of students and Delete the date of students.

**Source Code:**

#include <iostream>

using namespace std;

class Students

{

public:

    string arr1[20], arr2[20], arr3[20], arr4[20], arr5[20];

    int total = 0;

    void enter();

    void show();

    void search();

    void update();

    void deleterecord();

};

void Students::enter()

{

    int ch = 0;

    cout << "How many students do u want to enter??" << endl;

    cin >> ch;

    if (total == 0)

    {

        total = ch + total;

        for (int i = 0; i < ch; i++)

        {

            cout << "\nEnter the Data of student " << i + 1 << endl

                 << endl;

            cout << "Enter name ";

            cin >> arr1[i];

            cout << "Enter Roll no ";

            cin >> arr2[i];

            cout << "Enter course ";

            cin >> arr3[i];

            cout << "Enter class ";

            cin >> arr4[i];

            cout << "Enter contact ";

            cin >> arr5[i];

        }

    }

    else

    {

        for (int i = total; i < ch + total; i++)

        {

            cout << "\nEnter the Data of student " << i + 1 << endl

                 << endl;

            cout << "Enter name ";

            cin >> arr1[i];

            cout << "Enter Roll no ";

            cin >> arr2[i];

            cout << "Enter course ";

            cin >> arr3[i];

            cout << "Enter class ";

            cin >> arr4[i];

            cout << "Enter contact ";

            cin >> arr5[i];

        }

        total = ch + total;

    }

}

void Students::show()

{

    if (total == 0)

    {

        cout << "No data is entered" << endl;

    }

    else

    {

        for (int i = 0; i < total; i++)

        {

            cout << "\nData of Student " << i + 1 << endl

                 << endl;

            cout << "Name " << arr1[i] << endl;

            cout << "Roll no " << arr2[i] << endl;

            cout << "Course " << arr3[i] << endl;

            cout << "Class " << arr4[i] << endl;

            cout << "Contact " << arr5[i] << endl;

        }

    }

}

void Students::search()

{

    if (total == 0)

    {

        cout << "No data is entered" << endl;

    }

    else

    {

        string rollno;

        cout << "Enter the roll no of student" << endl;

        cin >> rollno;

        for (int i = 0; i < total; i++)

        {

            if (rollno == arr2[i])

            {

                cout << "Name " << arr1[i] << endl;

                cout << "Roll no " << arr2[i] << endl;

                cout << "Course " << arr3[i] << endl;

                cout << "Class " << arr4[i] << endl;

                cout << "Contact " << arr5[i] << endl;

            }

        }

    }

}

void Students::update()

{

    if (total == 0)

    {

        cout << "No data is entered" << endl;

    }

    else

    {

        string rollno;

        cout << "Enter the roll no of student which you want to update" << endl;

        cin >> rollno;

        for (int i = 0; i < total; i++)

        {

            if (rollno == arr2[i])

            {

                cout << "\nPrevious data" << endl

                     << endl;

                cout << "Data of Student " << i + 1 << endl;

                cout << "Name " << arr1[i] << endl;

                cout << "Roll no " << arr2[i] << endl;

                cout << "Course " << arr3[i] << endl;

                cout << "Class " << arr4[i] << endl;

                cout << "Contact " << arr5[i] << endl;

                cout << "\nEnter new data" << endl

                     << endl;

                cout << "Enter name ";

                cin >> arr1[i];

                cout << "Enter Roll no ";

                cin >> arr2[i];

                cout << "Enter course ";

                cin >> arr3[i];

                cout << "Enter class ";

                cin >> arr4[i];

                cout << "Enter contact ";

                cin >> arr5[i];

            }

        }

    }

}

void Students::deleterecord()

{

    if (total == 0)

    {

        cout << "No data is entered" << endl;

    }

    else

    {

        int a;

        cout << "Press 1 to delete all record" << endl;

        cout << "Press 2 to delete specific record" << endl;

        cin >> a;

        if (a == 1)

        {

            total = 0;

            cout << "All record is deleted..!!" << endl;

        }

        else if (a == 2)

        {

            string rollno;

            cout << "Enter the roll no of student which you wanted to delete" << endl;

            cin >> rollno;

            for (int i = 0; i < total; i++)

            {

                if (rollno == arr2[i])

                {

                    for (int j = i; j < total; j++)

                    {

                        arr1[j] = arr1[j + 1];

                        arr2[j] = arr2[j + 1];

                        arr3[j] = arr3[j + 1];

                        arr4[j] = arr4[j + 1];

                        arr5[j] = arr5[j + 1];

                    }

                    total--;

                    cout << "Your required record is deleted" << endl;

                }

            }

        }

        else

        {

            cout << "Invalid input";

        }

    }

}

int main()

{

    Students st;

    int value;

    while (true)

    {

        cout << "\nPress 1 to enter data" << endl;

        cout << "Press 2 to show data" << endl;

        cout << "Press 3 to search data" << endl;

        cout << "Press 4 to update data" << endl;

        cout << "Press 5 to delete data" << endl;

        cout << "Press 6 to exit" << endl;

        cout << "Enter Option: ";

        cin >> value;

        switch (value)

        {

        case 1:

            st.enter();

            break;

        case 2:

            st.show();

            break;

        case 3:

            st.search();

            break;

        case 4:

            st.update();

            break;

        case 5:

            st.deleterecord();

            break;

        case 6:

            exit(0);

            break;

        default:

            cout << "Invalid input" << endl;

            break;

        }

    }

}

**Explanation:**

A class student contains 5 functions:

1) Enter()

2) Show()

3) Search()

4) Update()

5) Deleterecord()

Firstly, user enter the number of students for which user wants to save the data . Then using **Enter()** function user enter the data like Name, Roll no, Class, Course, Contact in the array of string arr1, arr2, arr3 ,arr4, arr5 **respectively** by **using for loop**

**Show():** This function is used to show the data of students by using for loop

**Search():** This function is used to search the data of student ,user enter the roll number of student which user wants to search then function match that roll number with the roll no. of all students by using for loop, then function display the data of that student which roll number matched.

**Update():** This function is used to update the data of student ,similarly user enter the roll number of student which user wants to update then function match that roll number with the roll no. of all students by using for loop, then function display the data of that student which roll number matched the user is able to update the data of that student.

**Deleterecord():** This function is used to delete the data of student , program ask **press 1** to delete the data of all students and **press 2** to delete the data of particular student , By pressing 1 data of all student is deleted and by pressing 2 user again enter the roll number of student which user wants to delete then function match that roll number with the roll no. of all students by using for loop, then function delete the data of that student which roll number matched.

**Inside main() function** using while loop user ask the input Press 1 to enter data, Press 2 to show data, Press 3 to search data, Press 4 to update data, Press 5 to delete data, The by using switch cases object of class student call the fuctions.