

// Write a program in C++ to Create a student database of SE IT class (at least 10 records).
and perform the Linear search.
// Using C++

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#include <iostream>
#include <string>
using namespace std;

typedef struct student
{
    int roll_num;
    string name;
    float marks;
} stud;

void create(stud s[20], int n);
void display(stud s[20], int n);
void linear_search(stud s[20], int n, int key);

int main()
{
    stud s[20];
    int ch, n, key;

    do
    {
        cout << "\n 1) Create Student Database";
        cout << "\n 2) Display Student Records";
        cout << "\n 3) Linear Search by Roll Number";
        cout << "\n 4) Exit";
        cout << "\n Enter Your Choice: ";
        cin >> ch;

        switch (ch)
        {
        case 1:
            cout << "\n Enter the Number of Records (at least 10): ";
            cin >> n;
            if (n < 10)
            {
                cout << "Please enter at least 10 records.\n";
                break;
            }
            create(s, n);
            break;

        case 2:
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        display(s, n);
        break;

    case 3:
        cout << "\n Enter the Roll Number to Search: ";
        cin >> key;
        linear_search(s, n, key);
        break;

    case 4:
        return 0;

    default:
        cout << "\n Invalid choice" << endl;
    }
} while (ch != 4);
}

void create(stud s[20], int n)
{
    for (int i = 0; i < n; i++)
    {
        cout << "\n Enter the roll number: ";
        cin >> s[i].roll_num;
        cin.ignore();
        cout << " Enter the Name: ";
        getline(cin, s[i].name);
        cout << " Enter the marks: ";
        cin >> s[i].marks;
    }
}

void display(stud s[20], int n)
{
    cout << "\n\tRoll No\t\tName\t\tMarks";
    for (int i = 0; i < n; i++)
    {
        cout << "\n\t" << s[i].roll_num << "\t\t" << s[i].name << "\t\t" << s[i].marks;
    }
    cout << endl;
}

void linear_search(stud s[20], int n, int key)
{
    bool found = false;
    cout << "\n\tRoll No\t\tName\t\tMarks";
    for (int i = 0; i < n; i++)
    {

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if (key == s[i].roll_num)
{
    cout << "\n\t" << s[i].roll_num << "\t\t" << s[i].name << "\t\t" << s[i].marks;
    found = true;
}
}

if (!found)
    cout << "\nRecord with Roll Number " << key << " not found.\n";
}
```