

## Students Management System

```
#include<iostream>
#include<string>
#include<stdlib.h>
using namespace std;

int main();
void show_data(int searchkey); //function used to show data to end-user.
void get_data(int i); //function used to obtain data from end-user.
void search_student(int searchkey);
void add_student(); //This function is used to add record of new student.
void edit_student(int idnumber); //function is used to edit existing record.
void fullscreen();
int ts;

struct student //Structure student is made to store student attributes.
{
    int rollno;
    string name;
    float maths;
    float cpp;
    float python;
    float daa;
    float economics;
    float electronics;
    float total;
};

student rec[50]; //This is basic array of defined structure to store data.
int main()
{
    system("CLS");
    system("color B1");
    int choice; //int variable used to determine which operation user want to do.
    int idnumber; //int variable used to record ID number which user want to edit.
    int searchkey; //int variable to store student roll_no by which user can search.

    cout<<"Enter The Total Number of Student(s)- Max 50: ";
    cin>>ts;

    while(ts-->0)
    {
```

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cout<<"\n\t\tWhat do you want to do?"<<endl;
cout<<"\t\t-----"<<endl;
cout<<"\t\t1-Add student report"<<endl;
cout<<"\t\t2-Edit student report"<<endl;
cout<<"\t\t3-Search student report"<<endl;
cout<<"\t\t4-Display all students reports"<<endl;
cout<<"\t\t5-Quit Program"<<endl;
cout<<"\t\t-----"<<endl;
cout<<"Enter your choice: ";

cin>>choice;
switch(choice)
{
case 1:      //If user presses 1 then student adding module would be displayed.
    add_student();
    break;
case 2:      //If there are no records in array then it will ask the user to input records first.
    if(rec[0].rollno==0)
    {
        cout<<"Please Add students first."<<endl;
        system("pause");
        main();
    }
    else      //If records are present in array then it will show table.
    {
        cout<<endl;
        cout<<"-----"<<endl;
        cout<<"-----Student record Table-----"<<endl;
        cout<<"-----"<<endl;
        cout<<"ID      "<<"Roll      "<<"Name      "<<" Maths\t "<<"Cpp      "<<"Python      "<<"DAA
"<<"Economics      "<<"Electronics      "<<"Total\n\n";
        cout<<"-----"<<endl;

        for(int i=0;i<ts;i++)
        {
            show_data(i);    //function is called with index value to show data.
        }

        cout<<"-----"<<endl;
        cout<<"Which ID number you want to edit: ";

        cin>>idnumber;      //Asking the user at which ID he wants to make a change.
    }
}

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if(idnumber>ts || idnumber<0) //Validating the ID number.
{
    cout<<"\nInvalid ID Number."<<endl;
}
else
{
    edit_student(idnumber); //Passing ID number to Edit Function.
}
}
break;

case 3:
if(rec[0].rollno==0) //If no record exist then ask the user o enter records first.
{
    cout<<"Please Add sudents first."<<endl;
    system("pause");
    main(); //Return to main so user can input new record.
}
else
{
    cout<<"Enter roll_no of student you want to search: ";
    cin>>searchkey; //roll_no as the search key can be entered by user.
    search_student(searchkey);}
    break;
case 4:
    cout<<endl;
    cout<<"-----"<<endl;
    cout<<"-----Student record Table-----"<<endl;
    cout<<"-----"<<endl;
    cout<<"ID " <<"Roll " <<"Name " <<" Maths\t " <<"Cpp " <<"Python " <<"DAA
" <<"Economics " <<"Electronics " <<"Total\n\n";
    cout<<"-----"<<endl;

    for(int i=0;i<=ts;i++)
    {
        show_data(i); //funtion is called with index value to show data.
    }
    break;
case 5:
return 0; //Terminating the records.
break;
default: //Default value for ivalid Input.
cout<<"Invalid number."<<endl;

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    system("pause");
main();
}
}
return 0;
}

```

void get\_data(int i)      //Function for receiving data from user and populatiing the variables with values.

```

{
    cout<<"Enter student roll number in format(1XXX): ";
    cin>>rec[i].rollno;
    cout<<"Enter student name: ";
    cin>>rec[i].name;
    cout<<"Enter student's Mathematics marks: ";
    cin>>rec[i].maths;
    cout<<"Enter student's CPP Marks: ";
    cin>>rec[i].cpp;
    cout<<"Enter student's Python Marks: ";
    cin>>rec[i].python;
    cout<<"Enter student's DAA Marks: ";
    cin>>rec[i].daa;
    cout<<"Enter student's Economics Marks: ";
    cin>>rec[i].economics;
    cout<<"Enter student's Electronics Marks: ";
    cin>>rec[i].electronics;
}

```

void show\_data(int searchkey)      //Function for showing data on the screen.

```

{
    int i=searchkey;
    cout<<i<<" ";
    cout<<rec[i].rollno<<" ";
    cout<<rec[i].name<<" \t ";
    cout<<rec[i].maths<<"\t ";
    cout<<rec[i].cpp<<" ";
    cout<<rec[i].python<<" ";
    cout<<rec[i].daa<<" ";
    cout<<rec[i].economics<<" ";
    cout<<rec[i].electronics<<" ";
    rec[i].total=rec[i].cpp+rec[i].daa+rec[i].economics+rec[i].electronics+rec[i].maths+rec[i].python;
    cout<<rec[i].total<<"\n\n";
}

```

```

}

void search_student(int searchkey)
{
    for(int i=0;i<=ts;i++)    //Loop through complete array.
    {
        if(rec[i].rollno==searchkey)    //If roll number matches to search term.
        {
            cout<<"ID    "<<"Roll    "<<"Name \t    "<<" Maths\t    "<<"Cpp    "<<"Python    "<<"DAA
"<<"Economics    "<<"Electronics    "<<"Total\n\n";
            show_data(i);    //A function is used inside another function.
        }
    }
}

```

```

void add_student()    //This function is used to add record of new student.
{
    for(int i=0;i<ts;i++)
    {
        get_data(i);    //Loop was processed 5 times to get input for 5 students.
    }
    system("CLS");
    cout<<endl;
    cout<<"-----"<<endl;
    cout<<"-----Student record Table-----"<<endl;
    cout<<"-----"<<endl;
    cout<<"ID    "<<"Roll    "<<"Name    "<<" Maths\t    "<<"Cpp    "<<"Python    "<<"DAA
"<<"Economics    "<<"Electronics    "<<"Total\n\n";
    cout<<"-----"<<endl;

    for(int i=0;i<=ts;i++)
    {
        show_data(i);    //Loop was processed for 5 times to show obtained records.
    }
    cout<<"-----"<<endl;
    cout<<"-----FINISH-----"<<endl;
    cout<<"-----"<<endl;
    system("pause");

    main();    //Return to main function to again show menu.
}

```

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void edit_student(int idnumber)    //function is used to edit existing record.

```

```

{
    for(int i=0;i<=ts;i++)    //Loop is started.
    {
        if(idnumber==i)    //Through loop every value is compared with search term.
        {
            cout<<"\nExisted information about this record.\n\n";
            cout<<"-----"<<endl;
            cout<<"ID    "<<"Roll    "<<"Name    "<<"Maths\t "<<"Cpp    "<<"Python    "<<"DAA
            "<<"Economics    "<<"Electronics    "<<"Total\n\n";
            cout<<"-----"<<endl;
            show_data(i);    //Load information for existing record.
            cout<<"\n\nEnter new data for above shown record.\n\n";
            get_data(i);    //Inputing data for that specific record.
            cout<<"\n\nRecord updated successfully."<<endl;
            system("pause");
            main();    //Return to main function.
        }
    }
}

```