Assignment 3: Database of students

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Batch: A2

Code:

```c
#include <stdio.h>
#include <string.h>

void display(int n);

struct student
{
    int roll_no, DS, DE, SS, total;
    char name[50];
    float avg;
};
struct student s[5], temp;

int main()
{
    int i, n;

    printf("Enter the number of the students: ");
    scanf("%d", &n);

    for (i = 0; i < n; i++)
    {

printf("--------------------------------------------------------------------------\n");
        printf("Enter the information of the student %d.\n", i + 1);
        printf("Enter the Roll no: ");
        scanf("%d", &s[i].roll_no);
```

```c
        printf("Enter the name: ");
        scanf("%s", s[i].name);
        printf("Enter the marks of DS, DE, SS: ");
        scanf("%d%d%d", &s[i].DS, &s[i].DE, &s[i].SS);

        s[i].total = (s[i].DS + s[i].DE + s[i].SS);
        s[i].avg = s[i].total / n;
    }
    display(n);

    while (1)
    {
        int ch, a, pos, n1, m, p, roll, new;
        char search[30];
        printf("\nMenu\n1.Search\n2.Append\n3.Sorting\n4.Modify\n");
        printf("Enter your choice: ");
        scanf("%d", &ch);

        switch (ch)
        {

        case 1:
            printf("Enter name: ");
            scanf("%s", search);

            for (i = 0; i < n; i++)
            {
                a = strcmp(search, s[i].name);

                if (a == 0)
                {
                    pos = i;
                    break;
                }
            }

            if (a == 0)
            {
                printf("|\tRoll
no\t|\tName\t|\tDS\t|\tDE\t|\tSS\t|\tTotal\t|\tAvg\t\t|\n");
```

```c
printf("----------------------------------------------------------------
----------------------------------------------------\n");

printf("\n|\t%d\t|\t%s\t|\t%d\t|\t%d\t|\t%d\t|\t%d\t|\t%f\t|\n",
s[pos].roll_no, s[pos].name, s[pos].DS, s[pos].DE, s[pos].SS,
s[pos].total, s[i].avg);
            }
            else
                printf("Name not found.\n");

            break;
        case 2:
            printf("Enter the entries to be add: ");
            scanf("%d", &n1);

            m = n + n1;

            for (i = n; i < m; i++)
            {

                printf("Enter the information of the student %d.\n", i +
1);
                printf("Enter the Roll no: ");
                scanf("%d", &s[i].roll_no);
                printf("Enter the name: ");
                scanf("%s", s[i].name);
                printf("Enter the marks of DS, DE, SS: ");
                scanf("%d%d%d", &s[i].DS, &s[i].DE, &s[i].SS);
                s[i].total = (s[i].DS + s[i].DE + s[i].SS);
                s[i].avg = s[i].total / n;
            }
            n = m;

            printf("The updated database is as follows\n");
            display(n);

            break;

        case 3:
```

```c
        for (p = 1; p < n; p++)
        {
            for (int c = 0; c < n - p; c++)
            {
                if (s[c].roll_no > s[c + 1].roll_no)
                {
                    temp = s[c];
                    s[c] = s[c + 1];
                    s[c + 1] = temp;
                }
            }
        }
        display(n);

        break;

    case 4:

        printf("\nEnter the roll no that you want to modify: ");
        scanf("%d", &roll);
        printf("Enter the new roll no: ");
        scanf("%d", &new);

        for (i = 0; i < n; i++)
        {
            if (s[i].roll_no == roll)
            {
                s[i].roll_no = new;
            }
        }

        printf("The updated database is as follows\n");
        display(n);

        break;
    }
    break;
}

return 0;
```

```c
}

void display(int n)
{

    int i;

    printf("The Student database is as follows.\n");

printf("-----------------------------------------------------------------------------------------------------\n");
    printf("|\tRoll no\t|\tName\t|\tDS\t|\tDE\t|\tSS\t|\tTotal\t|\tAvg\t\t|\n");

printf("-----------------------------------------------------------------------------------------------------\n");
    for (i = 0; i < n; i++)
    {
        printf("|\t%d\t|\t%s\t|\t%d\t|\t%d\t|\t%d\t|\t%d\t|\t%f\t|\n",
s[i].roll_no, s[i].name, s[i].DS, s[i].DE, s[i].SS, s[i].total, s[i].avg);

printf("_-----------------------------------------------------------------------------------------------------\n");
    }
}
```

Output:

Enter the number of the students: 3

Enter the information of the student 1.
Enter the Roll no: 1
Enter the name: Aarya
Enter the marks of DS, DE, SS: 23 24 25

Enter the information of the student 2.
Enter the Roll no: 2

Enter the name: Aboli
Enter the marks of DS, DE, SS: 25 15 22

Enter the information of the student 3.
Enter the Roll no: 3
Enter the name: Rixvi
Enter the marks of DS, DE, SS: 25 25 25
The Student database is as follows.

```
-------------------------------------------------------------------------------------------------------
|   Roll no |    Name   |    DS    |    DE   |     SS   |    Total  |     Avg        |
-------------------------------------------------------------------------------------------------------
|    1     |    Aarya  |    23    |    24   |    25    |    72    |    24.000000    |
_------------------------------------------------------------------------------------------------------
|    2     |    Aboli  |    25    |    15   |    22    |    62    |    20.000000    |
_------------------------------------------------------------------------------------------------------
|    3     |    Rixvi  |    25    |    25   |    25    |    75    |    25.000000    |
_------------------------------------------------------------------------------------------------------
```

Menu
1.Search
2.Append
3.Sorting
4.Modify
Enter your choice: 1
Enter name: Aarya

```
|   Roll no |    Name   |    DS    |    DE   |     SS   |    Total  |     Avg        |
-------------------------------------------------------------------------------------------------------

|    1     |    Aarya  |    23    |    24   |    25    |    72    |    24.000000    |
```

Enter your choice: 2
Enter the entries to be add: 1
Enter the information of the student 4.
Enter the Roll no: 4
Enter the name: Trisha
Enter the marks of DS, DE, SS: 10 14 17
The updated database is as follows
The Student database is as follows.

```
-------------------------------------------------------------------------------------------------------
|   Roll no |    Name   |    DS    |    DE   |     SS   |    Total  |     Avg        |
-------------------------------------------------------------------------------------------------------
|    1     |    Aarya  |    23    |    24   |    25    |    72    |    24.000000    |
_------------------------------------------------------------------------------------------------------
|    2     |    Aboli  |    25    |    15   |    22    |    62    |    20.000000    |
```

3	Rixvi	25	25	25	75	25.000000
4	Trisha	20	20	20	60	20.000000