

C Programming Projects &gt; C ChaitanyaManglaSMS.c &gt; ...

```
1 // Developing a Student Management System
2 // Chaitanya Mangla
3 #include <stdio.h>
4 #include <string.h>
5 #include <stdlib.h>
6
7 typedef struct Student
8 {
9     char name [50];
10    float marks ;
11    int rollNumber ;
12    struct Student *next ;
13 } Student;
14
15 typedef struct SMS
16 {
17     struct Student *head;
18     struct Student *curr;
19
20 }SMS;
21
22 void initializeSystem(SMS* system)
23 {
24     system->curr = NULL;
25     system->head = NULL;
26 }
27
28 Student *addNode(char name[] , float marks , int rollNumber)
29 {
30     Student *newStudent = (Student *)malloc(sizeof(Student));
31     newStudent->marks = marks;
32     strcpy(newStudent->name, name);
33     newStudent->rollNumber = rollNumber;
34
35     newStudent->next = NULL;
36     return newStudent;
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38     }
39     int isEmpty (SMS *system)
40     {
41         return system->head == NULL;
42     }
43
44     void addStudent(char name[], float marks , int rollNumber , SMS *system)
45     {
46         Student *newStudent = addNode(name , marks , rollNumber);
47
48         if (isEmpty(system))
49         {
50             system->head = newStudent;
51             system->curr = newStudent;
52         }
53         else
54         {
55             system->head = newStudent;
56             system->curr = newStudent;
57         }
58         printf ("Student %s added successfully!!\n" , name);
59     }
60     void displayDetails(Student *s)
61     {
62         printf ("Name: %s\n" , s->name);
63         printf ("Roll number: %s\n" , s->rollNumber);
64         printf ("Marks:%0.2f\n" , s->marks);
65     }
66 }
67 void search(int rollNumber, SMS*system)
68 {
69     Student *s = system->head;
70

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70
71 while (s != NULL)
72 {
73
74     if (s->rollNumber == rollNumber)
75     {
76         displayDetails(s);
77         return;
78     }
79     s = s->next;
80 }
81 printf ("There is no student found with %d rollnumber\n" , rollNumber);
82 }
83 Student* exists (int rollNumber , SMS *system)
84 {
85     Student *s = system->head;
86
87     while (s != NULL)
88     {
89         if (s->rollNumber == rollNumber)
90         {
91             return s;
92         }
93         s = s->next;
94     }
95     printf("There is no student found with %d Rollnumber\n" , rollNumber);
96     return NULL;
97 }
98 void displayAll(SMS *system)
99 {
100     Student *s = system->head;
101     while (s != NULL)
102     {
103         displayDetails(s);
104         printf ("\n");
105     }
```



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106         s=s->next;
107     }
108 }
109
110 void update(int rollNumber, SMS*system)
111 {
112     Student *s =system->head;
113
114     while (s != NULL)
115     {
116
117         if (s->rollNumber == rollNumber)
118         {
119             displayDetails(s);
120             return;
121         }
122         s = s->next;
123     }
124     printf("There is no student found with %d Roll Number\n", rollNumber);
125 }
126
127 void delete(int rollNumber,SMS* system){
128
129     //Head we want to delete
130
131     char name[50];
132
133     if(system->head->rollNumber== rollNumber){
134         Student* s = system->head->next;
135         strcpy(name,system->head->name);
136         free(system->head);
137         system->head = s;
138
139         if(s==NULL){

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141     }
142 } else {
143     Student* s = system->head;
144     while(s!=NULL){
145
146
147
148         if(s->next->rollNumber== rollNumber){
149
150             Student* nextStudent = s->next->next;
151             strcpy(name,s->next->name);
152             free(s->next);
153             s->next = nextStudent;
154             if(nextStudent==NULL)
155                 system->curr =s;
156             break;
157         }
158     }
159 }
160
161 printf ("%s Details  deleted successfully\n" , name);
162 }
163 int main()
164 {
165
166     int exit = 0;
167
168     SMS *system = (SMS *)malloc(sizeof(SMS));
169     initializeSystem(system);

```

```

do
{
    printf("===== STUDENT MANAGEMENT SYSTEM =====\n");
    printf("1. Add a Student\n");
    printf("2. View all Students\n");
    printf("3. Display Student Details\n");
    printf("4. Update Student Details\n");
    printf("5. Delete Student Details\n");
    printf("6. Exit\n");

    int choice;
    scanf("%d", &choice);

    if (choice == 1)
    {
        // Add a Student;
        char name[50];
        int rollNumber;
        float marks;
        printf("Enter the name of the new Student\n");
        scanf("%s", name);

        if (strcmp(name, ".") == 0)
        {
            // Error handling

            printf("Wrong Option. Please select again\n");
            continue;
            ;
        }

        printf("Enter the roll Number of the new Student\n");
        scanf("%d", &rollNumber);

        printf("Enter the marks of the new Student\n");
    }
}

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scanf("%f", &marks);

if(exists(rollNumber,system)!=NULL){
    printf("Student with roll number: %d already exists",rollNumber);
    continue;
}

addStudent(name, marks, rollNumber, system);
}
else if (choice == 2)
{
    displayAll(system);
}
else if (choice == 3)
{
    int rollNumber;
    printf("Enter the Roll Number of the Student\n");
    scanf("%d", &rollNumber);

    search(rollNumber, system);
}
else if (choice == 4)
{
    char name[50];
    int rollNumber;
    int marks;
    printf("Enter the Roll Number of the Student for the updation\n");
    scanf("%d", &rollNumber);

    student* s = exists(rollNumber,system);

```



```
Student* s = exists(rollNumber,system);

if(s==NULL){
    continue; // Again show the menu
}

// Do you want to update the Roll Number?
// Yes/No
// Yes-> New roll number input
// No Next Question proceed

printf("Do you want to update the Roll Number?\nYes \nNo\n");
char ch[5];
scanf("%s", ch);

if (strcmp(ch, "Yes") == 0)
{
    printf("Enter the New Roll Number of the Student\n");
    scanf("%d", &rollNumber);
    s->rollNumber = rollNumber;
}

printf("Do you want to update the Name?\nYes \nNo\n");

scanf("%s", ch);

if (strcmp(ch, "Yes") == 0)
{
    printf("Enter the New Name of the Student\n");
    scanf("%s", name);
    strcpy(s->name,name);
}
```



```
    printf("Do you want to update the Marks of the Student?\nYes \nNo\n");

    scanf("%s", ch);

    if (strcmp(ch, "Yes") == 0)
    {
        printf("Enter the New Marks of the Student\n");
        scanf("%d", &marks);
        s->marks = marks;
    }
    printf("Student details updated successfully\n");
    displayDetails(s);

}
else if (choice == 5)
{
    int rollNumber;
    printf("Enter the Roll Number of the Student for the deletion\n");
    scanf("%d", &rollNumber);

    Student* s = exists(rollNumber,system);

    if(s==NULL){
        continue; // Again show the menu
    }

    delete(rollNumber,system);
```

```
    }
    else if (choice == 5)
    {
        int rollNumber;
        printf("Enter the Roll Number of the Student for the deletion\n");
        scanf("%d", &rollNumber);

        Student* s = exists(rollNumber,system);

        if(s==NULL){
            continue; // Again show the menu
        }

        delete(rollNumber,system);
    }
    else if (choice == 6)
    {
        exit = 1;
        printf("Thanks for using the app. See you again\n");
    }
    else
    {
        // Error handling

        printf("Wrong Option. Please select again\n");
    }
} while (exit == 0);
}
```

```
PS D:\Coding\C Programming Projects> cd "d:\Coding\C Programming Projects\" ; if ($?) { gcc ChaitanyaManglaSMS.c -o ChaitanyaManglaSMS }  
; if ($?) { .\ChaitanyaManglaSMS }
```

```
===== STUDENT MANAGEMENT SYSTEM =====
```

1. Add a Student
2. View all Students
3. Display Student Details
4. Update Student Details
5. Delete Student Details
6. Exit

1

Enter the name of the new Student

CM

Enter the roll Number of the new Student

23

Enter the marks of the new Student

98

There is no student found with 23 Rollnumber

Student CM added successfully!!

```
===== STUDENT MANAGEMENT SYSTEM =====
```

1. Add a Student
2. View all Students
3. Display Student Details
4. Update Student Details
5. Delete Student Details
6. Exit

2

Name: CM

```
PS D:\Coding\C Programming Projects> █
```

```
PS D:\Coding\C Programming Projects> cd "d:\Coding\C Programming Projects\" ; if ($?) { gcc ChaitanyaManglaSMS.c -o ChaitanyaManglaSMS }
; if ($?) { .\ChaitanyaManglaSMS }
===== STUDENT MANAGEMENT SYSTEM =====
1. Add a Student
2. View all Students
3. Display Student Details
4. Update Student Details
5. Delete Student Details
6. Exit
1
Enter the name of the new Student
Vishwas
Enter the roll Number of the new Student
3
Enter the marks of the new Student
87
There is no student found with 3 Rollnumber
Student Vishwas added successfully!!
===== STUDENT MANAGEMENT SYSTEM =====
1. Add a Student
2. View all Students
3. Display Student Details
4. Update Student Details
5. Delete Student Details
6. Exit
3
Enter the Roll Number of the Student
3
Name: Vishwas
PS D:\Coding\C Programming Projects> |
```



```
PS D:\Coding\C Programming Projects> cd "d:\Coding\C Programming Projects\" ; if ($?) { gcc ChaitanyaManglaSMS.c -o ChaitanyaManglaSMS }  
; if ($?) { .\ChaitanyaManglaSMS }
```

```
===== STUDENT MANAGEMENT SYSTEM =====
```

1. Add a Student
2. View all Students
3. Display Student Details
4. Update Student Details
5. Delete Student Details
6. Exit

1

Enter the name of the new Student

Riya

Enter the roll Number of the new Student

42

Enter the marks of the new Student

89

There is no student found with 42 Rollnumber

Student Riya added successfully!!

```
===== STUDENT MANAGEMENT SYSTEM =====
```

1. Add a Student
2. View all Students
3. Display Student Details
4. Update Student Details
5. Delete Student Details
6. Exit

6

Thanks for using the app. See you again

```
PS D:\Coding\C Programming Projects> █
```