



# Students Management System

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First Term (Project 2)

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Mastering\_EMBEDDED\_System\_Diploma

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# PROBLEM STATEMENT

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A simple software for student information management system which can perform the following operations:

- Store first name of the student.
- Store last name of the student.
- Store unique roll number for every student.
- Store GPA for every student.
- Store courses registered by the student.

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# APPROACH

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Our system approach is to create an individual functions for every operation.

These functions are:

- Add student details from file.
- Add student details manually.
- Find the student by the given roll number.
- Find the student by the given first name.
- Find the student registered in a course.
- Count number of students.
- Delete a student by the given roll number.
- Update a student by the given roll number.
- Print all student's data.
- Exit the program and save all data in file to recover back.

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# SYSTEM IDEA

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Our software consists of 3 files:

- **main.c :**  
Which contains the user interface and the function calling based on the user input.
- **studentbase.c:**  
Which contains the body of every function and any global variable.
- **studentbase.h:**  
Which contains the prototype of every function and some type definitions.
- **Student.txt:**  
Which contains the students data our function will read.

# PROGRAM EXECUTIONS

## Add student manually:

```
Outline  Console  Task List  Build Targets
test.exe [C/C++ Application] [pid: 3]
=====
1. Add the student Details Manually
2. Add the student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Students Details by Roll Number
8. Update Student by Roll Number
9. Show all informations of the Students
10. TO Exit

Choose on of the following options :1
Add the student Details
=====
Enter the Roll number:
Enter the first name of student:
mostafa
Enter the last name of student
era
Enter the GPA you obtained:
1.1
Enter the course ID of each course
course 1 id:1
course 2 id:2
course 3 id:3
course 4 id:4
course 5 id:5
[INFO] Student Details is added successfully
-----
[INFO] The total number of students is 1
[INFO] You can add up to 50 students
[INFO] You can add 49 more students
```

## Add students from file:

```
Welcome to the Student Management System
=====
1. Add the student Details Manually
2. Add the student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Students Details by Roll Number
8. Update Student by Roll Number
9. Show all informations of the Students
10. TO Exit

Choose on of the following options :2
[ERROR] Roll Number 1 is already Taken
[ERROR] Roll Number 1 is already Taken
[INFO] Roll Number 3 is saved successfully
[INFO] Roll Number 4 is saved successfully
*****
[INFO] students Details is added successfully
*****
```

### Show students\_1

```
choose on of the following options :9
-----
The Students Details are
Student first name : mostafa
Student last name : tera
Student Roll Number : 1
Student GPA : 1.10
the courses id's are
course ID : 1
course ID : 2
course ID : 3
course ID : 4
course ID : 5
The Students Details are
Student first name : Bolis
Student last name : Karam
Student Roll Number : 3
Student GPA : 3.50
the courses id's are
course ID : 45
course ID : 21
course ID : 55
course ID : 18
course ID : 46
The Students Details are
Student first name : Kerolos
Student last name : Gamal
Student Roll Number : 4
Student GPA : 3.50
the courses id's are
course ID : 45
course ID : 21
course ID : 55
course ID : 18
course ID : 46
```

```
conlze ID : 46
conlze ID : 18
conlze ID : 22
conlze ID : 57
conlze ID : 42
thus conlze ID,2 mle
student gpa : 3.50
student roll number : 4
```

### Find student by roll number:

```
Welcome to the Student Management System
=====
1. Add the student Details Manually
2. Add the student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Students Details by Roll Number
8. Update Student by Roll Number
9. Show all informations of the Students
10. TO Exit
```

```
choose on of the following options :3
```

```
-----  
enter the Roll number of the student:
```

```
The student details are
The first name is mostafa
The last name is tera
The GPA is 1.100000
The courses ID are 1
The courses ID are 2
The courses ID are 3
The courses ID are 4
The courses ID are 5
```

```
thus conlze ID sL6 2
thus conlze ID sL6 4
thus conlze ID sL6 3
thus conlze ID sL6 5
thus conlze ID sL6 1
thus conlze ID sL6 0
```

### Find student by first name:

```
Welcome to the Student Management System  
=====  
1. Add the student Details Manually  
2. Add the student Details From Text File  
3. Find the Student Details by Roll Number  
4. Find the Student Details by First Name  
5. Find the Student Details by Course ID  
6. Find the Total number of Students  
7. Delete the Students Details by Roll Number  
8. Update Student by Roll Number  
9. Show all informations of the Students  
10. TO Exit
```

```
Choose on of the following options :4
```

```
-----  
Enter the first name of the student:
```

```
mostafa  
The student details are  
The first name is mostafa  
The last name is tera  
The roll number is 1  
The GPA is 1.100000  
The courses ID are 1  
The courses ID are 2  
The courses ID are 3  
The courses ID are 4  
The courses ID are 5
```

### Find student by course number:

```
=====  
1. Add the student Details Manually  
2. Add the student Details From Text File  
3. Find the Student Details by Roll Number  
4. Find the Student Details by First Name  
5. Find the Student Details by Course ID  
6. Find the Total number of Students  
7. Delete the Students Details by Roll Number  
8. Update Student by Roll Number  
9. Show all informations of the Students  
10. TO Exit
```

```
Choose on of the following options :5
```

```
-----  
Enter the course ID:
```

```
45  
The student details are  
The first name is Bolis  
The last name is Karam  
The roll number is 3  
The GPA is 3.500000  
The courses ID are 45  
The courses ID are 21  
The courses ID are 55  
The courses ID are 18  
The courses ID are 46  
The student details are  
The first name is Kerolos  
The last name is Gamal  
The roll number is 4  
The GPA is 3.500000  
The courses ID are 45  
The courses ID are 21  
The courses ID are 55  
The courses ID are 18
```

Delete student by roll number + Information of all students:

```
Choose on of the following options :7
-----
Enter the roll number which you want to delete:
4
[INFO] The roll number is removed successfully
-----
[INFO] The total number of students is 2
[INFO] You can add up to 50 students
[INFO] You can add 48 more students
```

[INFO] You can add up to 50 students

Update student by roll number:

```
=====
Welcome to the Student Management System
=====
1. Add the student Details Manually
2. Add the student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Students Details by Roll Number
8. Update Student by Roll Number
9. Show all informations of the Students
10. TO Exit
```

```
Choose on of the following options :8
```

```
Enter the roll number which you want to update:
```

```
1
1. Student first name :
2. Student last name :
3. Student ID number :
4. Student GPA :
5. courses
```

```
1
Enter Student first name :
ahmed
```

ahmed  
ENTER STUDENT FIRST NAME :

1
2. courses  
3. Student ID number :

### Show students \_2

```
5. Find the Student Details by course ID  
6. Find the Total number of Students  
7. Delete the Students Details by Roll Number  
8. Update Student by Roll Number  
9. Show all informations of the Students  
10. TO Exit
```

Choose on of the following options :9

The Students Details are

Student first name : Bolis

Student last name : Karam

Student Roll Number : 3

Student GPA : 3.50

the courses id's are

course ID : 45

course ID : 21

course ID : 55

course ID : 18

course ID : 46

The Students Details are

Student first name : ahmed

Student last name : tera

Student Roll Number : 1

Student GPA : 1.10

the courses id's are

course ID : 1

course ID : 2

course ID : 3

course ID : 4

course ID : 5

[INFO] The total number of students is 2

[INFO] You can add up to 50 students

[INFO] You can add 48 more students

[INFO] You can add up to 50 students

[INFO] The total number of students is 2

course ID : 2

course ID : 4

course ID : 3

course ID : 1

course ID : 5

### Exit software:

```
=====  
Welcome to the Student Management System  
=====  
1. Add the student Details Manually  
2. Add the student Details From Text File  
3. Find the Student Details by Roll Number  
4. Find the Student Details by First Name  
5. Find the Student Details by Course ID  
6. Find the Total number of Students  
7. Delete the Students Details by Roll Number  
8. Update Student by Roll Number  
9. Show all informations of the Students  
10. TO Exit
```

Choose on of the following options :10

=====Thank you=====

=====Thank you=====

=====Thank you=====

**For further information you can find codes files on my github:**

<https://github.com/mgteria200/Master-Embedded-System/tree/main/First-Term%20Projects/Project.2>