

Mastering Embedded Systems Online Diploma

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First Term (Final Project 2- Student Management System)

Eng. Samar Gamal Mahmoud Eid

My Profile:

<https://www.learn-in-depth-store.com/certificate/samargamalmahmoud%40gmail.com>

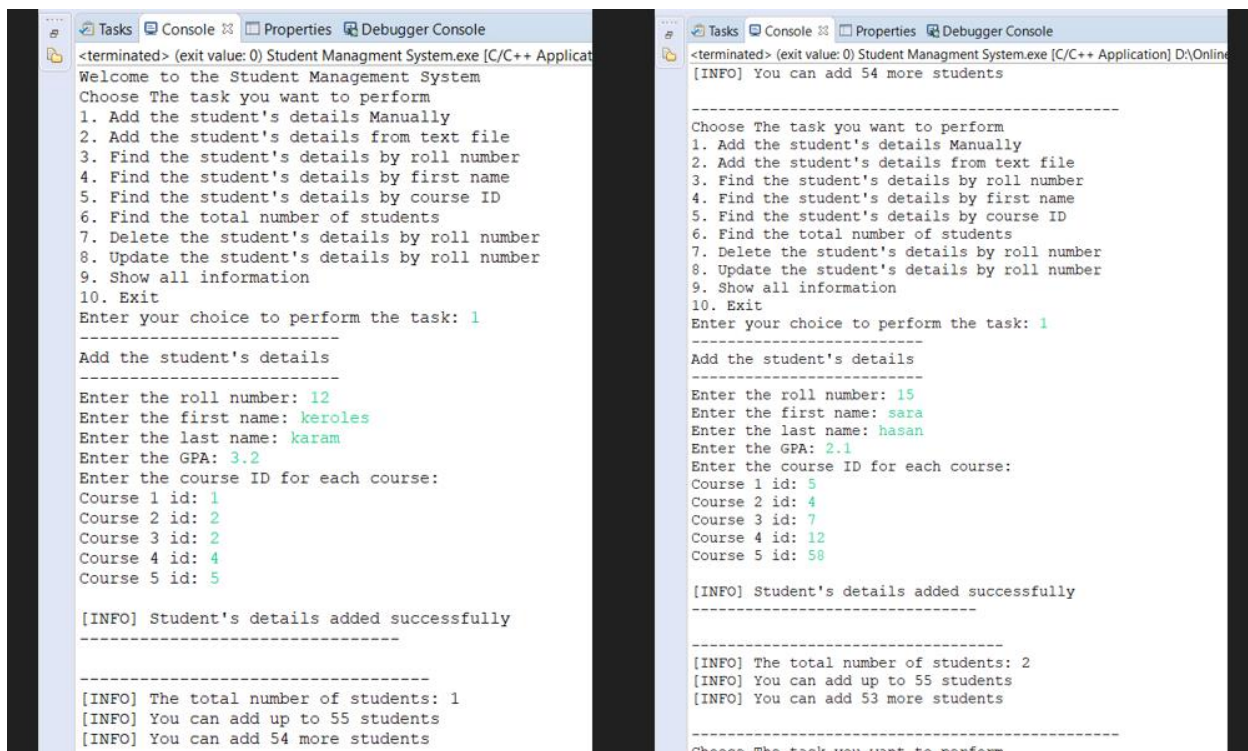
Student Management System

A simple student database that allows the administrator to:

- Add a student Manually.
- Add students from file.
- Find a student by roll number.
- Find a student by first name.
- Find Student that take a certain course.
- Find the total number of students.
- Delete a student.
- Update student's information.
- Show all the students in the database.

Implementation

-Add students manually



```
<terminated> (exit value: 0) Student Management System.exe [C/C++ Application]
Welcome to the Student Management System
Choose The task you want to perform
1. Add the student's details Manually
2. Add the student's details from text file
3. Find the student's details by roll number
4. Find the student's details by first name
5. Find the student's details by course ID
6. Find the total number of students
7. Delete the student's details by roll number
8. Update the student's details by roll number
9. Show all information
10. Exit
Enter your choice to perform the task: 1

-----
Add the student's details
-----
Enter the roll number: 12
Enter the first name: keroles
Enter the last name: karam
Enter the GPA: 3.2
Enter the course ID for each course:
Course 1 id: 1
Course 2 id: 2
Course 3 id: 2
Course 4 id: 4
Course 5 id: 5

[INFO] Student's details added successfully

-----
[INFO] The total number of students: 1
[INFO] You can add up to 55 students
[INFO] You can add 54 more students

-----
Choose The task you want to perform
```

```
<terminated> (exit value: 0) Student Management System.exe [C/C++ Application] D:\Online
[INFO] You can add 54 more students

-----
Choose The task you want to perform
1. Add the student's details Manually
2. Add the student's details from text file
3. Find the student's details by roll number
4. Find the student's details by first name
5. Find the student's details by course ID
6. Find the total number of students
7. Delete the student's details by roll number
8. Update the student's details by roll number
9. Show all information
10. Exit
Enter your choice to perform the task: 1

-----
Add the student's details
-----
Enter the roll number: 15
Enter the first name: sara
Enter the last name: hasan
Enter the GPA: 2.1
Enter the course ID for each course:
Course 1 id: 5
Course 2 id: 4
Course 3 id: 7
Course 4 id: 12
Course 5 id: 58

[INFO] Student's details added successfully

-----
[INFO] The total number of students: 2
[INFO] You can add up to 55 students
[INFO] You can add 53 more students

-----
Choose The task you want to perform
```

-File

```
StudentManagment.c StudentManagment.h
1 1 Samar Gamal 4.2 50 1 23 45 3
2 1 Mahmoud Gamal 4 1 20 55 120 6
3 5 Ahmed Ali 3 20 160 144 85 7
4 7 Maha Fathy 3.5 1 20 46 82 7
```

-Add students from file

```
Enter your choice to perform the task: 2
-----
[INFO] Roll number 1 saved successfully
[ERROR] Roll number 1 is already taken
[INFO] Roll number 5 saved successfully
[INFO] Roll number 7 saved successfully

-----
[INFO] The total number of students: 5
[INFO] You can add up to 55 students
[INFO] You can add 50 more students
```

-Show students

```
Choose The task you want to perform
1. Add the student's details Manually
2. Add the student's details from text file
3. Find the student's details by roll number
4. Find the student's details by first name
5. Find the student's details by course ID
6. Find the total number of students
7. Delete the student's details by roll number
8. Update the student's details by roll number
9. Show all information
10. Exit
Enter your choice to perform the task: 9
-----
Student's first name keroles
Student's last name karam
Student's roll number 12
Student's GPA 3.20
Course 1 ID: 1
Course 2 ID: 2
Course 3 ID: 2
Course 4 ID: 4
Course 5 ID: 5
-----
Student's first name sara
Student's last name hasan
Student's roll number 15
Student's GPA 2.10
Course 1 ID: 5
Course 2 ID: 4
Course 3 ID: 7
Course 4 ID: 12
Course 5 ID: 58
-----
```

```
-----
Student's first name Samar
Student's last name Gamal
Student's roll number 1
Student's GPA 4.20
Course 1 ID: 50
Course 2 ID: 1
Course 3 ID: 23
Course 4 ID: 45
Course 5 ID: 3
-----
Student's first name Ahmed
Student's last name Ali
Student's roll number 5
Student's GPA 3.00
Course 1 ID: 20
Course 2 ID: 160
Course 3 ID: 144
Course 4 ID: 85
Course 5 ID: 7
-----
Student's first name Maha
Student's last name Fathy
Student's roll number 7
Student's GPA 3.50
Course 1 ID: 1
Course 2 ID: 20
Course 3 ID: 46
Course 4 ID: 82
Course 5 ID: 7
-----
```

-Find by roll number

```
Enter your choice to perform the task: 3
```

```
-----  
Enter the roll number of the student: 1  
The student's details are:  
The first name: Samar  
The last name: Gamal  
The student's GPA: 4.20  
Student's courses:  
Course 1 ID: 50  
Course 2 ID: 1  
Course 3 ID: 23  
Course 4 ID: 45  
Course 5 ID: 3  
-----
```

-Find by first name

```
Enter your choice to perform the task: 4
```

```
-----  
Enter the first name: mahmoud  
[ERROR] The first name mahmoud is not found  
.
```

```
Enter your choice to perform the task: 4
```

```
-----  
Enter the first name: Ahmed  
The student's details are:  
The first name: Ahmed  
The last name: Ali  
The student's GPA: 3.00  
The student's roll: 5  
Student's courses:  
Course 1 ID: 20  
Course 2 ID: 160  
Course 3 ID: 144  
Course 4 ID: 85  
Course 5 ID: 7  
-----
```

-Find Student that take a certain course.

```
Enter your choice to perform the task: 5
```

```
-----  
Enter the course id: 1  
The student's details are:  
The first name: keroles  
The last name: karam  
The student's GPA: 3.20  
The student's roll: 12  
-----
```

```
The student's details are:  
The first name: Samar  
The last name: Gamal  
The student's GPA: 4.20  
The student's roll: 1  
-----
```

```
The student's details are:  
The first name: Maha  
The last name: Fathy  
The student's GPA: 3.50  
The student's roll: 7  
-----
```

-Find total number of students

```
Enter your choice to perform the task: 6
```

```
-----  
[INFO] The total number of students: 5  
[INFO] You can add up to 55 students  
[INFO] You can add 50 more students  
-----
```

-Delete a student

```
10. Delete  
Enter your choice to perform the task: 7
```

```
-----  
Enter the roll number of the student you want to delete: 7  
[INFO] Roll number 7 is removed successfully  
Showing the total number of students
```

```
Enter your choice to perform the task: 6
```

```
-----  
[INFO] The total number of students: 4  
[INFO] You can add up to 55 students  
[INFO] You can add 51 more students
```

```
10. Exit
Enter your choice to perform the task: 9
```

```
-----
Student's first name keroles
Student's last name karam
Student's roll number 12
Student's GPA 3.20
Course 1 ID: 1
Course 2 ID: 2
Course 3 ID: 2
Course 4 ID: 4
Course 5 ID: 5
```

```
-----
Student's first name sara
Student's last name hasan
Student's roll number 15
Student's GPA 2.10
Course 1 ID: 5
Course 2 ID: 4
Course 3 ID: 7
Course 4 ID: 12
Course 5 ID: 58
-----
```

```
Course 2 ID: 4
Course 3 ID: 7
Course 4 ID: 12
Course 5 ID: 58
```

```
-----
Student's first name Samar
Student's last name Gamal
Student's roll number 1
Student's GPA 4.20
Course 1 ID: 50
Course 2 ID: 1
Course 3 ID: 23
Course 4 ID: 45
Course 5 ID: 3
```

```
-----
Student's first name Ahmed
Student's last name Ali
Student's roll number 5
Student's GPA 3.00
Course 1 ID: 20
Course 2 ID: 160
Course 3 ID: 144
Course 4 ID: 85
Course 5 ID: 7
-----
```

-Update student's information

```
Enter your choice to perform the task: 8
```

```
-----
Enter the roll number of the student you want to update: 5
Enter the value you want to change:
```

1. First name
2. Last name
3. Roll NO.
4. GPA
5. Courses

```
1
```

```
Enter the new first name: khaled
Student's details updated successfully
```

```
-----
Student's first name khaled
Student's last name Ali
Student's roll number 5
Student's GPA 3.00
Course 1 ID: 20
Course 2 ID: 160
Course 3 ID: 144
Course 4 ID: 85
Course 5 ID: 7
```



```
-----
Choose The task you want to perform
```

Enter your choice to perform the task: 8

Enter the roll number of the student you want to update: 12
Enter the value you want to change:
1. First name
2. Last name
3. Roll NO.
4. GPA
5. Courses
5
Enter the course number you want to update: 3
Enter the new course id: 9
Student's details updated successfully

Enter your choice to perform the task: 9

Student's first name keroles
Student's last name karam
Student's roll number 12
Student's GPA 3.20
Course 1 ID: 1
Course 2 ID: 2
Course 3 ID: 9
Course 4 ID: 4
Course 5 ID: 5



-Show all the students

Enter your choice to perform the task: 9

```
-----  
Student's first name keroles  
Student's last name karam  
Student's roll number 12  
Student's GPA 3.20  
Course 1 ID: 1  
Course 2 ID: 2  
Course 3 ID: 9  
Course 4 ID: 4  
Course 5 ID: 5  
-----
```

```
Student's first name sara  
Student's last name hasan  
Student's roll number 15  
Student's GPA 2.10  
Course 1 ID: 5  
Course 2 ID: 4  
Course 3 ID: 7  
Course 4 ID: 12  
Course 5 ID: 58  
-----
```

```
Student's first name Samar  
Student's last name Gamal  
Student's roll number 1  
Student's GPA 4.20  
Course 1 ID: 50  
Course 2 ID: 1  
Course 3 ID: 23  
Course 4 ID: 45  
Course 5 ID: 3  
-----
```

```
-----  
Student's first name Samar  
Student's last name Gamal  
Student's roll number 1  
Student's GPA 4.20  
Course 1 ID: 50  
Course 2 ID: 1  
Course 3 ID: 23  
Course 4 ID: 45  
Course 5 ID: 3  
-----
```

```
-----  
Student's first name khaled  
Student's last name Ali  
Student's roll number 5  
Student's GPA 3.00  
Course 1 ID: 20  
Course 2 ID: 160  
Course 3 ID: 144  
Course 4 ID: 85  
Course 5 ID: 7  
-----
```

-Exit

10. Exit

Enter your choice to perform the task: 10

