

Mastering Embedded System Online Diploma

First Term (Final project 2): Students Management System

Eng. Mahmoud Magdy Ayoub

My profile:

<https://www.learn-in-depth.com/online-diploma/mahmoudmagdyayoub99@gmail.com>

Students Management System

Problem Statement:

It is required to build a simple SW for student information management system which can perform the following operation:

- Store Student's First name.
- Store Student's Last name.
- Store Student's ID.
- Store Student's GPA.
- Store Student's Registered Courses.

Approach:

Design the following Functions (APIs):

- Add Student Details Manually.
- Add Student Details from File.
- Find Student by the given ID.
- Find Student by the given First name.
- Find Students registered in a course.
- Count of Students.
- Delete a Student with ID.
- Update a Student.
- View All Students.
- Exit.

Results:

Add Student Details Manually

```
-----
1 : Add New Student Manually
2 : Add New Student from File
3 : Find Student With ID
4 : Find Student With First Name
5 : Find Students Registered in a course
6 : Find Students Count
7 : Delete a Student
8 : Update a Student
9 : View All Students
10 : Exit
Enter a choice : 1
Enter Student First Name : mahmoud
Enter Student Last Name : magdy
Enter Student ID : 100
Enter Student GPA : 3.3
Enter Student Courses ID : 5
6
7
8
```

```
-----
1 : Add New Student Manually
2 : Add New Student from File
3 : Find Student With ID
4 : Find Student With First Name
5 : Find Students Registered in a course
6 : Find Students Count
7 : Delete a Student
8 : Update a Student
9 : View All Students
10 : Exit
Enter a choice : 9

-----Student 1 info-----
First name : mahmoud
Last name : magdy
ID : 100
GPA : 3.30
Registered Courses : 5 6 7 8
-----
```

Add Student Details from File.

```
Enter a choice : 2
File Opened Successfully
Mahmoud Magdy 203 3.3 5 6 7 8

string token = Mahmoud
string token = Magdy
string token = 203
string token = 3.3
string token = 5
string token = 6
string token = 7
string token = 8
Alaa Nagib 100 2.7 10 11 12 13
string token = Alaa
string token = Nagib
string token = 100
string token = 2.7
string token = 10
string token = 11
string token = 12
string token = 13
```

```
Enter a choice : 9
[
-----Student 1 info-----
First name : Mahmoud
Last name  : Magdy
ID   : 203
GPA  : 3.30
Registered Courses : 5 6 7 8
-----Student 2 info-----
First name : Alaa
Last name  : Nagib
ID   : 100
GPA  : 2.70
Registered Courses : 10 11 12 13
-----
```

Find Student by the given ID.

```
1 : Add New Student Manually
2 : Add New Student from File
3 : Find Student With ID
4 : Find Student With First Name
5 : Find Students Registered in a course
6 : Find Students Count
7 : Delete a Student
8 : Update a Student
9 : View All Students
10 : Exit
Enter a choice : 3
Enter Searched ID : 203
First name : Mahmoud
Last name : Magdy
ID : 203
GPA : 3.30
Registered Courses : 5 6 7 8
```

In case of Not found ID

```
-----
1 : Add New Student Manually
2 : Add New Student from File
3 : Find Student With ID
4 : Find Student With First Name
5 : Find Students Registered in a course
6 : Find Students Count
7 : Delete a Student
8 : Update a Student
9 : View All Students
10 : Exit
Enter a choice : 3
Enter Searched ID : 55
[Error] ID NOT Found
```

Find Student by the given First name.

```
-----  
1 : Add New Student Manually  
2 : Add New Student from File  
3 : Find Student With ID  
4 : Find Student With First Name  
5 : Find Students Registered in a course  
6 : Find Students Count  
7 : Delete a Student  
8 : Update a Student  
9 : View All Students  
10 : Exit  
Enter a choice : 4  
Enter Searched First Name : mahmoud  
First name : Mahmoud  
Last name : Magdy  
ID : 203  
GPA : 3.30  
Registered Courses : 5 6 7 8
```

In case of Not found First Name

```
-----  
1 : Add New Student Manually  
2 : Add New Student from File  
3 : Find Student With ID  
4 : Find Student With First Name  
5 : Find Students Registered in a course  
6 : Find Students Count  
7 : Delete a Student  
8 : Update a Student  
9 : View All Students  
10 : Exit  
Enter a choice : 4  
Enter Searched First Name : ahmed  
[Error] First Name NOT Found
```


Find Students registered in a course.

```
-----  
1 : Add New Student Manually  
2 : Add New Student from File  
3 : Find Student With ID  
4 : Find Student With First Name  
5 : Find Students Registered in a course  
6 : Find Students Count  
7 : Delete a Student  
8 : Update a Student  
9 : View All Students  
10 : Exit  
Enter a choice : 5  
Enter Searched Course : 8  
Student number 1 registered course 8
```

```
-----  
1 : Add New Student Manually  
2 : Add New Student from File  
3 : Find Student With ID  
4 : Find Student With First Name  
5 : Find Students Registered in a course  
6 : Find Students Count  
7 : Delete a Student  
8 : Update a Student  
9 : View All Students  
10 : Exit  
Enter a choice : 5  
Enter Searched Course : 12  
Student number 2 registered course 12
```

In case of Not Found Course ID

```
-----  
1 : Add New Student Manually  
2 : Add New Student from File  
3 : Find Student With ID  
4 : Find Student With First Name  
5 : Find Students Registered in a course  
6 : Find Students Count  
7 : Delete a Student  
8 : Update a Student  
9 : View All Students  
10 : Exit  
Enter a choice : 5  
Enter Searched Course : 50  
[Error] Course ID NOT Found
```

Count of Students.

```
1 : Add New Student Manually
2 : Add New Student from File
3 : Find Student With ID
4 : Find Student With First Name
5 : Find Students Registered in a course
6 : Find Students Count
7 : Delete a Student
8 : Update a Student
9 : View All Students
10 : Exit
Enter a choice : 6
Count of Students = 2
```


Delete a Student with ID.

```
1 : Add New Student Manually
2 : Add New Student from File
3 : Find Student With ID
4 : Find Student With First Name
5 : Find Students Registered in a course
6 : Find Students Count
7 : Delete a Student
8 : Update a Student
9 : View All Students
10 : Exit
Enter a choice : 7
Enter Deleted ID : 100
```

```
-----
1 : Add New Student Manually
2 : Add New Student from File
3 : Find Student With ID
4 : Find Student With First Name
5 : Find Students Registered in a course
6 : Find Students Count
7 : Delete a Student
8 : Update a Student
9 : View All Students
10 : Exit
Enter a choice : 9

-----Student 1 info-----
First name : Mahmoud
Last name : Magdy
ID : 203
GPA : 3.30
Registered Courses : 5 6 7 8
```

In case of Not found ID

```
-----
1 : Add New Student Manually
2 : Add New Student from File
3 : Find Student With ID
4 : Find Student With First Name
5 : Find Students Registered in a course
6 : Find Students Count
7 : Delete a Student
8 : Update a Student
9 : View All Students
10 : Exit
Enter a choice : 7
Enter Deleted ID : 500
[Error] ID NOT Found
```

Update a Student.

```
-----
1  : Add New Student Manually
2  : Add New Student from File
3  : Find Student With ID
4  : Find Student With First Name
5  : Find Students Registered in a course
6  : Find Students Count
7  : Delete a Student
8  : Update a Student
9  : View All Students
10 : Exit
```

Enter a choice : 8

Enter Updated ID : 203

1 : Update First Name

2 : Update Last Name

3 : Update ID

4 : Update GPA

5 : Update Courses ID

enter update choice : 4

Enter New GPA : 3.5

```
-----
1  : Add New Student Manually
2  : Add New Student from File
3  : Find Student With ID
4  : Find Student With First Name
5  : Find Students Registered in a course
6  : Find Students Count
7  : Delete a Student
8  : Update a Student
9  : View All Students
10 : Exit
```

Enter a choice : 9

[
-----Student 1 info-----

First name : Mahmoud

Last name : Magdy

ID : 203

GPA : 3.50

Registered Courses : 5 6 7 8

-----Student 2 info-----

First name : Alaa

Last name : Nagib

ID : 100

GPA : 2.70

Registered Courses : 10 11 12 13

In case of Not found ID

```
-----
1  : Add New Student Manually
2  : Add New Student from File
3  : Find Student With ID
4  : Find Student With First Name
5  : Find Students Registered in a course
6  : Find Students Count
7  : Delete a Student
8  : Update a Student
9  : View All Students
10 : Exit
Enter a choice : 8
Enter Updated ID : 300
[[Error] ID NOT Found
```

View All Students.

```
-----
1  : Add New Student Manually
2  : Add New Student from File
3  : Find Student With ID
4  : Find Student With First Name
5  : Find Students Registered in a course
6  : Find Students Count
7  : Delete a Student
8  : Update a Student
9  : View All Students
10 : Exit
Enter a choice : 9

-----Student 1 info-----
First name : Mahmoud
Last name  : Magdy
ID         : 203
GPA        : 3.50
Registered Courses : 5 6 7 8

-----Student 2 info-----
First name : Alaa
Last name  : Nagib
ID         : 100
GPA        : 2.70
Registered Courses : 10 11 12 13
```

Exit.

```
-----  
1  : Add New Student Manually  
2  : Add New Student from File  
3  : Find Student With ID  
4  : Find Student With First Name  
5  : Find Students Registered in a course  
6  : Find Students Count  
7  : Delete a Student  
8  : Update a Student  
9  : View All Students  
10 : Exit  
Enter a choice : 10  
System is Exited
```