

# **Mastering Embedded System Online Diploma**

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**First Term (Final Project 2)**

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# **Student Management System**

## **Problem Statement: -**

- Write a program to build a student management system which can perform the following functions:
  - Store the first name of the student.
  - Store the last name of the student.
  - Store unique roll number for every student.
  - Store the GPA of every student.
  - Store courses ID that students are enrolled in.

## **Approach:-**

- Add student details manually.
- Add student details from file.
- Find the student by the given ID.
- Find the student by first name.
- Find the student registered in a course.
- Count of students.
- Delete a student.
- Update student.
- View All
- Exit

## Validation of code:-

- Add student details manually

```
=====
=====INIT COMPLETE=====
=====
Welcome to the student Management System
=====
Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
1
=====
=====
Enter ID:1
Enter the first name of student:Arsany
Enter the last name of student:Ashraf
Enter the GPA of student:3.86
Enter course 1 ID:1
Enter course 2 ID:2
Enter course 3 ID:3
Enter course 4 ID:4
Enter course 5 ID:5
[INFO] Student Details are added successfully
=====
[INFO] the total number of students is : 1
[INFO] you can add up to 50 students
[INFO] you can add more about 49 students
=====
Enter your choice number :
9
=====
=====
Student Data for ID 1 is
First Name:Arsany
Last Name:Ashraf
GPA:3.86
Courses entered:
course 1 ID is:1
course 2 ID is:2
course 3 ID is:3
course 4 ID is:4
course 5 ID is:5
```

- **Add student details from file.**

Text file

```
1 arsany ashraf 3.86 1 2 3 4 5
1 mark reda 2.1 2 3 4 5 6
3 mina reda 3.0 5 6 3 2 1
```

Function

```
=====
-----INIT COMPLETE-----
=====
Welcome to the student Management System
=====
Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
2
=====
[ERROR] ID 1 already taken
[INFO] Student Details are added successfully
=====
[INFO] the total number of students is : 2
[INFO] you can add up to 50 students
[INFO] you can add more about 48 students
=====
Enter your choice number :
9
=====
Student Data for ID 1 is
First Name:arsany
Last Name:ashraf
GPA:3.86
Courses entered:
course 1 ID is:1
course 2 ID is:2
course 3 ID is:3
course 4 ID is:4
course 5 ID is:5
=====
Student Data for ID 3 is
First Name:mina
Last Name:reda
GPA:3.00
Courses entered:
course 1 ID is:5
course 2 ID is:6
course 3 ID is:3
course 4 ID is:2
course 5 ID is:1
=====
```

I

- Find the student by the given ID.

```

=====
Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
3
=====
Enter ID:1
=====
Student Data for ID 1 is
First Name:arsany
Last Name:ashraf
GPA:3.86
Courses entered:
course 1 ID is:1
course 2 ID is:2
course 3 ID is:3
course 4 ID is:4
course 5 ID is:5
=====
Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
3
=====
Enter ID:9
[ERROR] ID 9 Not found
=====

```

- Find the student by first name.

```
=====
Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
4
=====
Enter first name:arsany
=====
Student Data for first name arsany is
ID:1
Last Name:ashraf
GPA:3.86
Courses entered:
  course 1 ID is:1
  course 2 ID is:2
  course 3 ID is:3
  course 4 ID is:4
  course 5 ID is:5
=====
Student Data for first name arsany is
ID:5
Last Name:mounir
GPA:4.00
Courses entered:
  course 1 ID is:3
  course 2 ID is:2
  course 3 ID is:5
  course 4 ID is:7
  course 5 ID is:8
=====
Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
4
=====
Enter first name:andrew
=====
[ERROR] first name andrew Not found
=====
```

- **Find the student registered in a course.**

```
=====
Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
5
=====
Enter Course ID:1
=====
Student Data for course ID 1 is
ID:1
First Name:arsany
Last Name:ashraf
GPA:3.86
=====
Student Data for course ID 1 is
ID:3
First Name:mina
Last Name:reda
GPA:3.00
=====
Enter your choice number :
5
=====
Enter Course ID:60
=====
[ERROR] course ID 60 Not found
=====
```

- **Count of students.**

```
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
6
=====
[INFO] the total number of students is : 3
[INFO] you can add up to 50 students
[INFO] you can add more about 47 students
=====
```

- **Delete a student.**

Before Deleting

```
=====
Student Data for ID 1 is
First Name:arsany
Last Name:ashraf
GPA:3.86
Courses entered:
course 1 ID is:1
course 2 ID is:2
course 3 ID is:3
course 4 ID is:4
course 5 ID is:5
=====
Student Data for ID 2 is
First Name:mark
Last Name:reda
GPA:2.10
Courses entered:
course 1 ID is:2
course 2 ID is:3
course 3 ID is:4
course 4 ID is:5
course 5 ID is:6
=====
Student Data for ID 3 is
First Name:mina
Last Name:reda
GPA:3.00
Courses entered:
course 1 ID is:5
course 2 ID is:6
course 3 ID is:3
course 4 ID is:2
course 5 ID is:1
=====
```



## After

```
=====
Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
7
=====
Enter ID:2
[INFO] ID 2 was deleted Successfully
=====
9. Show all stored data
10. To Exit
Enter your choice number :
9
=====
Student Data for ID 1 is
First Name:arsany
Last Name:ashraf
GPA:3.86
Courses entered:
course 1 ID is:1
course 2 ID is:2
course 3 ID is:3
course 4 ID is:4
course 5 ID is:5
=====
Student Data for ID 3 is
First Name:mina
Last Name:reda
GPA:3.00
Courses entered:
course 1 ID is:5
course 2 ID is:6
course 3 ID is:3
course 4 ID is:2
course 5 ID is:1
=====
```

- **Update student.**

```
=====
Student Data for ID 3 is
First Name:mina
Last Name:reda
GPA:3.00
Courses entered:
course 1 ID is:5
course 2 ID is:6
course 3 ID is:3
course 4 ID is:2
course 5 ID is:1
=====

Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
8
=====
=====

Enter ID:3
Choose the data that you want to update
1.ID
2.first name
3.last name
4.GPA
5.courses enrolled
Enter the choice2
Enter new first name:mona
=====
=====
Student Data for ID 3 is
First Name:mona
Last Name:reda
GPA:3.00
Courses entered:
course 1 ID is:5
course 2 ID is:6
course 3 ID is:3
course 4 ID is:2
course 5 ID is:1
=====
```

- View All

```
=====
Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
9
=====
Student Data for ID 1 is
First Name:arsany
Last Name:ashraf
GPA:3.86
Courses entered:
course 1 ID is:1
course 2 ID is:2
course 3 ID is:3
course 4 ID is:4
course 5 ID is:5
=====
Student Data for ID 3 is
First Name:mona
Last Name:reda
GPA:3.00
Courses entered:
course 1 ID is:5
course 2 ID is:6
course 3 ID is:3
course 4 ID is:2
course 5 ID is:1
=====
```

- **Exit**

```
=====
Choose the task that you want to perform
1. Add the student Details Manually
2. Add the student Details from file
3. Find student details by ID
4. Find student details by First Name
5. Find student details by course ID
6. Find total number of students
7. Delete the student details by ID
8. Update the student details by ID
9. Show all stored data
10. To Exit
Enter your choice number :
10
=====
```

thank you