

(Mastering Embedded System Online Diploma)

First Term (Final project 2): Student Database management system

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- **Objectives:**

Create DBMS to add students and create different operations on this list of students and display different kind of information about it.

- **Approaches:**

- Design the following Functions :-
 - Add Student Details Manually.
 - Add Student Details from File.
 - Find Student by the given Roll Number.
 - Find Student by the given First name.
 - Find Students registered in a course.
 - Total Number of Students.
 - Delete a Student with ID.
 - Update a Student.
 - View All Students.
 - Exit.

- Snapshots:
Add Student Details Manually

```
welcome to the Student Management System
=====
Choose on of the following Options

1: Add Student Details Manually
2: Add Student Details from Text File
3: Find Student Data by Roll Number
4: Find Student Data by First Name
5: Find Student Data by Course ID
6: Find Total Number of Students
7: Delete Student Data by Roll Number
8: Update Student Data by Roll Number
9: Show All information
10: Exit
Enter Option Number: 1

=====
-----
Add Student Details

Enter Student Roll Number: 1

Enter Student First Name: Ahmed

Enter Student Last Name: Aboraya

Enter Student GPA: 3.7

Enter Student Courses ID of each course:
Enter Student Courses ID 1:1

Enter Student Courses ID 2:2

Enter Student Courses ID 3:3

Enter Student Courses ID 4:4

Enter Student Courses ID 5:5

[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
-----
```

```
Choose on of the following Options

1: Add Student Details Manually
2: Add Student Details from Text File
3: Find Student Data by Roll Number
4: Find Student Data by First Name
5: Find Student Data by Course ID
6: Find Total Number of Students
7: Delete Student Data by Roll Number
8: Update Student Data by Roll Number
9: Show All information
10: Exit
Enter Option Number: 1

[
=====
-----
Add Student Details

Enter Student Roll Number: 2

Enter Student First Name: kamal

Enter Student Last Name: saad

Enter Student GPA: 3.0

Enter Student Courses ID of each course:
Enter Student Courses ID 1:1

Enter Student Courses ID 2:3

Enter Student Courses ID 3:5

Enter Student Courses ID 4:7

Enter Student Courses ID 5:2
[INFO] Student Details are added successfully
-----
```

Add Student Details from File

```
Enter Option Number: 2

=====
-----
Add Students Details from File
[ERROR] IN line 0 : Roll Number is already taken before

=====STUDENT PRINT=====

Student Roll Number: 7
Student First Name: mohamed
Student Last Name: Tamer
Student GPA: 3.500000
Student Courses ID:
Courses ID :1
Courses ID :10
Courses ID :9
Courses ID :6
Courses ID :5[
=====

=====STUDENT PRINT=====

Student Roll Number: 6
Student First Name: ibrahim
Student Last Name: Barakat
Student GPA: 2.500000
Student Courses ID:
Courses ID :1
Courses ID :2
Courses ID :3
Courses ID :4
Courses ID :35
=====

=====STUDENT PRINT=====

Student Roll Number: 11
Student First Name: Mostafa
Student Last Name: shady
Student GPA: 2.800000
Student Courses ID:
Courses ID :5
Courses ID :7
Courses ID :8
Courses ID :6
Courses ID :3
=====

End of file.
[INFO] students added : 3
[INFO] remaining students due to errors are :1
```

Find Student by the given Roll Number

```
Enter Option Number: 3

=====
Enter student roll number
2

=====STUDENT PRINT=====

Student Roll Number: 2
Student First Name: kamal
Student Last Name: saad
Student GPA: 3.000000
Student Courses ID:
Courses ID :1
Courses ID :3
Courses ID :5
Courses ID :7
Courses ID :2
=====
```

```
Enter Option Number: 3

=====
Enter student roll number
8
[ERROR] Roll Number is Not Found

=====
```

Find Student by the given First Name

```
Enter Option Number: 4

=====
Enter student First Name
ibrahim

=====STUDENT PRINT=====

Student Roll Number: 6
Student First Name: ibrahim
Student Last Name: Barakat
Student GPA: 2.500000
Student Courses ID:
Courses ID :1
Courses ID :2
Courses ID :3
Courses ID :4
Courses ID :35
=====
```

```
Enter Option Number: 4

=====
Enter student First Name
yusuf
[ERROR] No First Name Matched this Name

=====
```

Find Student by the given Course ID

```
Enter Option Number: 5

=====
Enter Course ID
2

=====STUDENT PRINT=====

Student Roll Number: 1
Student First Name: Ahmed
Student Last Name: Aboraya
Student GPA: 3.700000
Student Courses ID:
Courses ID :1
Courses ID :2
Courses ID :3
Courses ID :4
Courses ID :5
=====

=====STUDENT PRINT=====

Student Roll Number: 2
Student First Name: kamal
Student Last Name: saad
Student GPA: 3.000000
Student Courses ID:
Courses ID :1
Courses ID :3
Courses ID :5
Courses ID :7
Courses ID :2
=====

=====STUDENT PRINT=====

Student Roll Number: 6
Student First Name: ibrahim
```

```
Enter Option Number: 5

=====
Enter Course ID
88
[ERROR] No Student signed this Course

=====
```

Find Total Number of Students

```
Enter Option Number: 6

=====
-----
[INFO] the total number of students is : 5
[INFO] you can add up to 50 students
[INFO] you can add more about 45 students
-----
=====
```

Delete Student Data by Roll Number

```
Enter Option Number: 7

=====

Enter Student Roll to be Deleted: 11

=====STUDENT PRINT=====

Student Roll Number: 11
Student First Name: Mostafa
Student Last Name: shady
Student GPA: 2.800000
Student Courses ID:
Courses ID :5
Courses ID :7
Courses ID :8
Courses ID :6
Courses ID :3
=====
Delete Student 1-Yes 2-No
-----
1
-----
Student Deleted successfully
-----
```

Update a Student

```
Enter Option Number: 8

=====

Enter Student Roll to be Updated: 1

=====STUDENT PRINT=====
{
Student Roll Number: 1
Student First Name: Ahmed
Student Last Name: Aboraya
Student GPA: 3.700000
Student Courses ID:
Courses ID :1
Courses ID :2
Courses ID :3
Courses ID :4
Courses ID :5
=====
-----
Enter Data Number to be Updated
1- First Name
2- Last Name
3- GPA
4- Courses
-----
2
Enter New Last Name
gaber
-----
information updated successfully
Student information after update
-----

=====STUDENT PRINT=====

Student Roll Number: 1
Student First Name: Ahmed
Student Last Name: gaber
Student GPA: 3.700000
Student Courses ID:
Courses ID :1
Courses ID :2
Courses ID :3
Courses ID :4
Courses ID :5
=====
```

Show all Students information

```
Enter Option Number: 9

=====

Record Number 1>
=====STUDENT PRINT=====

Student Roll Number: 1
Student First Name: Ahmed
Student Last Name: gaber
Student GPA: 3.700000
Student Courses ID:
Courses ID :1
Courses ID :2
Courses ID :3
Courses ID :4
Courses ID :5
=====

Record Number 2>
=====STUDENT PRINT=====

Student Roll Number: 2
Student First Name: kamal
Student Last Name: saad
Student GPA: 3.000000
Student Courses ID:
Courses ID :1
Courses ID :3
Courses ID :5
Courses ID :7
Courses ID :2
=====
```

```
Record Number 3>
=====STUDENT PRINT=====

Student Roll Number: 7
Student First Name: mohamed
Student Last Name: Tamer
Student GPA: 3.500000
Student Courses ID:
Courses ID :1
Courses ID :10
Courses ID :9
Courses ID :6
Courses ID :5
=====

Record Number 4>
=====STUDENT PRINT=====

Student Roll Number: 6
Student First Name: ibrahim
Student Last Name: Barakat
Student GPA: 2.500000
Student Courses ID:
Courses ID :1
Courses ID :2
Courses ID :3
Courses ID :4
Courses ID :35
=====
```