Mastering Embedded System Online Diploma

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First Term-Final Project1

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➢ Student Management System Using Queue

The Problem Statement:

Write a program to create a simple software database to store student information which can perform the following operations:

1) Store the first name of each student.
2) Store the last name of each student.
3) Store the unique Roll number of each student.
4) Store the GPA of each student.
5) Store the registered courses by each student.

Software implementation:

System User Interface:

```
Welcome To The Student Management System
-----------------------------------
Choose You option :
1) Add Student Manually
2) Add Student From Text File
3) Find Student by Roll Number
4) Find Student by First Name
5) Find Student by Course ID
6) Find The Total Number Of Students
7) Delete Student by Roll Number
8) Update Student by Roll Number
9)Show All Information
10)Exit
Enter Option No. :
```
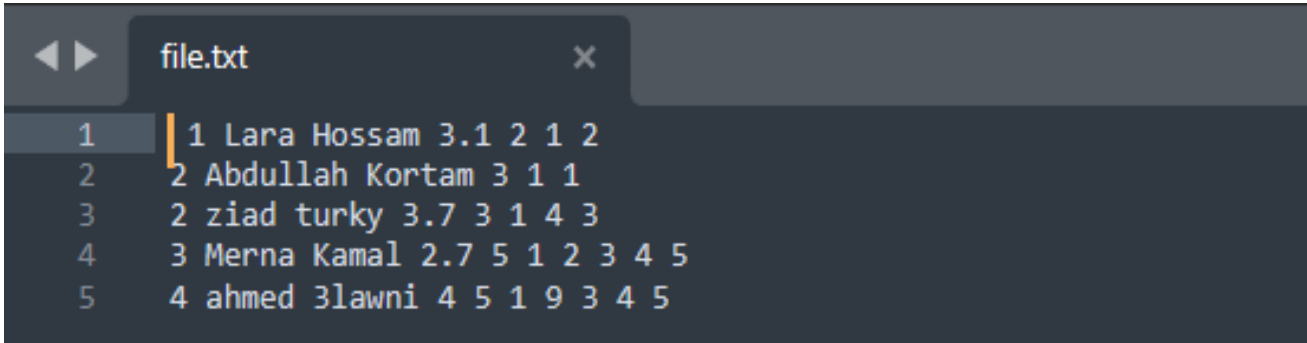
1) Add Student Manually:

Case 1 (UNIQUE ROLL)

```
Enter Option No. :1
---------------------------------
Enter The Roll Number:5
Enter first Name:Keroles
Enter Last Name:Karam
Enter The GPA:4
Enter The number of courses:4
Enter The Course ID of each course :
Enter course 1 ID : 1
Enter course 2 ID : 2
Enter course 3 ID : 3
Enter course 4 ID : 4
[INFO] Student is added Successfully
[INFO] The Total Number Of Student : 1
[INFO] You Can add 54 Student more
---------------------------------
```

Case 2 (Duplicated ROLL)

```
Enter Option No. :1
---------------------------------
Enter The Roll Number:5
[INFO] Roll Number 5 is taken
[INFO] The Total Number Of Student : 1
[INFO] You Can add 54 Student more
---------------------------------
```

2) Add Student From text file:

Text file contain 5 Student(4unique roll + 1 duplicated).

```
file.txt                        ×

1    | 1 Lara Hossam 3.1 2 1 2
2    2 Abdullah Kortam 3 1 1
3    2 ziad turky 3.7 3 1 4 3
4    3 Merna Kamal 2.7 5 1 2 3 4 5
5    4 ahmed 3lawni 4 5 1 9 3 4 5
```

User Interface:

```
Enter Option No. :2
----------------------------------
Enter The File Name(.txt)
file.txt
[INFO] Roll Number 1 saved successfully
[INFO] Roll Number 2 saved successfully
[INFO] Roll Number 2 is taken
[INFO] Roll Number 3 saved successfully
[INFO] Roll Number 4 saved successfully
[INFO] Students details are saved successfully
[INFO] The Total Number Of Student : 5
[INFO] You Can add 50 Student more
----------------------------------
```

All student registered:

```
Enter Option No. :9
----------------------------------
The Roll Number: 5
The first Name : Keroles
The last Name : Karam
The GPA: 4.00
Course 1 ID : 1
Course 2 ID : 2
Course 3 ID : 3
Course 4 ID : 4
----------------------------------
The Roll Number: 1
The first Name : Lara
The last Name : Hossam
The GPA: 3.10
Course 1 ID : 1
Course 2 ID : 2
----------------------------------
The Roll Number: 2
The first Name : Abdullah
The last Name : Kortam
The GPA: 3.00
Course 1 ID : 1
----------------------------------
```

```
--------------------------------
The Roll Number: 3
The first Name : Merna
The last Name : Kamal
The GPA: 2.70
Course 1 ID : 1
Course 2 ID : 2
Course 3 ID : 3
Course 4 ID : 4
Course 5 ID : 5
--------------------------------
The Roll Number: 4
The first Name : ahmed
The last Name : 3lawni
The GPA: 4.00
Course 1 ID : 1
Course 2 ID : 9
Course 3 ID : 3
Course 4 ID : 4
Course 5 ID : 5
--------------------------------
```

3) Find student by Roll number:

Case 1 (Existing Roll)

```
Enter Option No. :3
--------------------------------
Enter the roll number:
3
Student's details are:
The first Name : Merna
The last Name : Kamal
The GPA: 2.70
Course 1 ID : 1
Course 2 ID : 2
Course 3 ID : 3
Course 4 ID : 4
Course 5 ID : 5
--------------------------------
```

Case 2 (Non Existing Roll)

```
Enter Option No. :3
--------------------------------
Enter the roll number:
15
Roll Number 15 Not Found.
--------------------------------
```

4) Find student by First name:

Case 1 (Existing Name)

```
Enter Option No. :4
--------------------------------
Enter the roll number:
ahmed
Student's details are:
The Roll Number : 4
The first Name : ahmed
The last Name : 3lawni
The GPA: 4.00
Course 1 ID : 1
Course 2 ID : 9
Course 3 ID : 3
Course 4 ID : 4
Course 5 ID : 5
--------------------------------
```

Case 2 (Non Existing Name)

```
Enter Option No. :4
--------------------------------
Enter the roll number:
andrew
First Name andrew Not Found.
--------------------------------
```

5) Find student registered in course by course ID:

Case 1 (Existing Course)

```
Enter Option No. :5
----------------------------------
Enter the Course ID:
3
Student's details are:
The Roll Number : 5
The first Name : Keroles
The last Name : Karam
The GPA: 4.00
Student's details are:
The Roll Number : 3
The first Name : Merna
The last Name : Kamal
The GPA: 2.70
Student's details are:
The Roll Number : 4
The first Name : ahmed
The last Name : 3lawni
The GPA: 4.00
Number of the Student in Course (ID = 3) : 3
----------------------------------
```

Case 2 (Non Existing Course)

```
Enter Option No. :5
----------------------------------
Enter the Course ID:
19
ID Number 19 Not Found.
----------------------------------
```

6) Find total number of student:

```
Enter Option No. :6
----------------------------------
[INFO] The Total Number Of Student : 5
----------------------------------
```

7) Delete student by roll number:

Case 1 (Existing Roll)

```
Enter Option No. :7
---------------------------------
Enter the roll number:
4
=====Delete Done=====
[INFO] The Total Number Of Student : 4
[INFO] You Can add 51 Student more
---------------------------------
```

After delete

```
Enter Option No. :9
|---------------------------------
The Roll Number: 5
The first Name : Keroles
The last Name : Karam
The GPA: 4.00
Course 1 ID : 1
Course 2 ID : 2
Course 3 ID : 3
Course 4 ID : 4
---------------------------------
The Roll Number: 1
The first Name : Lara
The last Name : Hossam
The GPA: 3.10
Course 1 ID : 1
Course 2 ID : 2
---------------------------------
The Roll Number: 2
The first Name : Abdullah
The last Name : Kortam
The GPA: 3.00
Course 1 ID : 1
---------------------------------
The Roll Number: 3
The first Name : Merna
The last Name : Kamal
The GPA: 2.70
Course 1 ID : 1
Course 2 ID : 2
Course 3 ID : 3
Course 4 ID : 4
Course 5 ID : 5
---------------------------------
```

Case 2 (Non Existing Roll)

```
Enter Option No. :7
--------------------------------
Enter the roll number:
50
[INFO] The Total Number Of Student : 5
[INFO] You Can add 50 Student more
Roll Number 50 Not Found.
--------------------------------
```

8) Update student information by the given roll number:

User Interface

```
Enter Option No. :8
--------------------------------
Enter the roll number:
2
Enter The Roll Number To Update The Task :
1) First Name
2) Last Name
3) Roll Number
4) GPA
5) Courses
Enter Option No. :
```

Student Abdullah kortam before update:

I will update his first name, last name, GPA and course.

```
Student's details are:
The first Name : abdullah
The last Name : Kortam
The GPA: 3.00
Course 1 ID : 1
```

Update First Name:

```
Enter the roll number:
2
Enter The Roll Number To Update The Task :
1) First Name
2) Last Name
3) Roll Number
4) GPA
5) Courses
Enter Option No. :1
Ahmed
UPDATED SUCCESSFULLY
--------------------------------
```

```
Student's details are:
The Roll Number : 2
The first Name : Ahmed
The last Name : Kortam
The GPA: 3.00
Course 1 ID : 1
-------------------------------------
```

Update Last Name:

```
Enter Option No. :8
--------------------------------
Enter the roll number:
2
Enter The Roll Number To Update The Task :
1) First Name
2) Last Name
3) Roll Number
4) GPA
5) Courses
Enter Option No. :2
Roshdi
UPDATED SUCCESSFULLY
--------------------------------
```

```
Student's details are:
The first Name : Ahmed
The last Name : Roshdi
The GPA: 3.00
Course 1 ID : 1
----------------------------------------
```

Update Roll Number:

```
Enter the roll number:
2
Enter The Roll Number To Update The Task :
1) First Name
2) Last Name
3) Roll Number
4) GPA
5) Courses
Enter Option No. :3
6
UPDATED SUCCESSFULLY
----------------------------------
```

```
The Roll Number: 6
The first Name : Ahmed
The last Name : Roshdi
The GPA: 3.00
Course 1 ID : 1
--------------------------------------------
```

Update GPA:

```
Enter Option No. :8
-----------------------------------
Enter the roll number:
2
Enter The Roll Number To Update The Task :
1) First Name
2) Last Name
3) Roll Number
4) GPA
5) Courses
Enter Option No. :4
3.7
UPDATED SUCCESSFULLY
-----------------------------------
```

```
Enter Option No. :3
-----------------------------------
Enter the roll number:
2
Student's details are:
The first Name : Ahmed
The last Name : Roshdi
The GPA: 3.70
Course 1 ID : 1
-----------------------------------
```

Update Courses:

```
Enter Option No. :8
-----------------------------------
Enter the roll number:
2
Enter The Roll Number To Update The Task :
1) First Name
2) Last Name
3) Roll Number
4) GPA
5) Courses
Enter Option No. :5
Enter the new number of Course
3
Enter All the Course :
1
2
3
UPDATED SUCCESSFULLY
-----------------------------------
```

```
Student's details are:
The first Name : Ahmed
The last Name : Roshdi
The GPA: 3.70
Course 1 ID : 1
Course 2 ID : 2
Course 3 ID : 3
-----------------------------------
```

8) Show All Information:

```
Enter Option No. :9
---------------------------------
The Roll Number: 5
The first Name : Keroles
The last Name : Karam
The GPA: 4.00
Course 1 ID : 1
Course 2 ID : 2
Course 3 ID : 3
Course 4 ID : 4
---------------------------------
The Roll Number: 1
The first Name : Lara
The last Name : Hossam
The GPA: 3.10
Course 1 ID : 1
Course 2 ID : 2
---------------------------------
The Roll Number: 2
The first Name : Ahmed
The last Name : Roshdi
The GPA: 3.70
Course 1 ID : 1
Course 2 ID : 2
Course 3 ID : 3
---------------------------------
The Roll Number: 3
The first Name : Merna
The last Name : Kamal
The GPA: 2.70
Course 1 ID : 1
Course 2 ID : 2
Course 3 ID : 3
Course 4 ID : 4
Course 5 ID : 5
---------------------------------
```

10)Exit:

```
10)Exit
Enter Option No. :10
|-------------------------------
End Of The Program..
```