Mastering Embedded System Online Diploma

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Topic	**First term (Final Project2)** **Student Management System** **Using Queue**
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1- Add student Details From File:

read students information from an existing file and add them to the database .

```
DB.txt
  1  1   Mostafa  Khaled  3.4   20   21   22   23   24
  2  2   Karim   Sayed   3.98  1    2    3    4    5
  3  3   Ahmed   Azazy   4     26   25   24   23   15
  4  4   Mona    Ismail  3.2   18   17   20   23   24
  5  1   Mohamed  Omar   3.8   15   23   16   17   18
```

Duplicated roll number

```
-----------------------------------------------
Choose The Task that you want to perform
1. Add the Student Details Manually
2. Add the Student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
2
Enter the file name with the extension: DB.txt
[INFO] , student number 1 added successfully
[INFO] , student number 2 added successfully
[INFO] , student number 3 added successfully
[INFO] , student number 4 added successfully
[ERROR] , Duplicated 1 roll number
============Aborting=============
```

Now Trying to add the same text file to see the response :

```
2. Add the Student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
2
Enter the file name with the extension: DB.txt
[ERROR] , Duplicated 1 roll number
============Aborting=============
[ERROR] , Duplicated 2 roll number
============Aborting=============
[ERROR] , Duplicated 3 roll number
============Aborting=============
[ERROR] , Duplicated 4 roll number
============Aborting=============
[ERROR] , Duplicated 1 roll number
============Aborting=============
```

2- Add student details manually:

```
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
1
Enter the Roll number: 5
Enter the first name of student: Mohsen
Enter the second name of student: Ashraf
Enter the student GPA: 3.72
Enter the number of Courses to register: 5
Course 1 id: 20
Course 2 id: 21
Course 3 id: 22
Course 4 id: 23
Course 5 id: 24
[INFO] , student number 5 added successfully
---------------------------------------------
```

3- Find student by a given roll number:

```
2. Add the Student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
3
Enter Roll Number: 4
-------------------------
student roll number: 4
student first name: Mona
student second name: Ismail
student GPA: 3.20
Registered course1 ID: 18
Registered course2 ID: 17
Registered course3 ID: 20
Registered course4 ID: 23
Registered course5 ID: 24
---------------------------------------------
```

Trying to enter wrong roll number to see the response:

```
Choose The Task that you want to perform
1. Add the Student Details Manually
2. Add the Student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
3
Enter Roll Number: 125
[ERROR] , Roll num is not found
---------------------------------------------
```

4-Find student by the first name:

```
Choose The Task that you want to perform
1. Add the Student Details Manually
2. Add the Student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
4
Enter student first name: Ahmed
```

```
student roll number: 3
student first name: Ahmed
student second name: Azazy
student GPA: 4.00
Registered course1 ID: 26
Registered course2 ID: 25
Registered course3 ID: 24
Registered course4 ID: 23
Registered course5 ID: 15
------------------------
student roll number: 6
student first name: Ahmed
student second name: Mostafe
student GPA: 3.75
Registered course1 ID: 23
Registered course2 ID: 24
Registered course3 ID: 25
Registered course4 ID: 26
Registered course5 ID: 27
------------------------
[INFO] , Number of found students is 2
--------------------------------------------
```

5- Find students registered in one course:

```
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
5
Enter Course ID: 22
------------------------
student roll number: 1
student first name: Mostafa
student second name: Khaled
------------------------
student roll number: 5
student first name: Mohsen
student second name: Ashraf
------------------------
[INFO] , Number of found students is 2
--------------------------------------------
```

Entering wrong course ID:

```
Choose The Task that you want to perform
1. Add the Student Details Manually
2. Add the Student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
5
Enter Course ID: 236
------------------------
[INFO] , Number of found students is 0
---------------------------------------------
```

6- Total number of students:

```
Choose The Task that you want to perform
1. Add the Student Details Manually
2. Add the Student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
6
------------------------
[INFO] , total number of students= 6
[INFO] , you can add up to 100
[INFO] , you can add 94 more students
---------------------------------------------
```

7- Delete a student from database:

Trying to deleted student whose roll number is 3:

```
---------------------------------------------
Choose The Task that you want to perform
1. Add the Student Details Manually
2. Add the Student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
7
Enter student Roll number: 3
[INFO] , Deletion is done
---------------------------------------------
```

The Database before Deletion:

```
student roll number: 1
student first name: Mostafa
student second name: Khaled
student GPA: 3.40
Registered course1 ID: 20
Registered course2 ID: 21
Registered course3 ID: 22
Registered course4 ID: 23
Registered course5 ID: 24
------------------------
student roll number: 2
student first name: Karim
student second name: Sayed
student GPA: 3.98
Registered course1 ID: 1
Registered course2 ID: 2
Registered course3 ID: 3
Registered course4 ID: 4
Registered course5 ID: 5
------------------------
------------------------
student roll number: 3
student first name: Ahmed
student second name: Azazy
student GPA: 4.00
Registered course1 ID: 26
Registered course2 ID: 25
Registered course3 ID: 24
Registered course4 ID: 23
Registered course5 ID: 15
------------------------
student roll number: 4
student first name: Mona
student second name: Ismail
student GPA: 3.20
Registered course1 ID: 18
Registered course2 ID: 17
Registered course3 ID: 20
Registered course4 ID: 23
Registered course5 ID: 24
------------------------
student roll number: 5
student first name: Mohsen
student second name: Ashraf
student GPA: 3.72
Registered course1 ID: 20
Registered course2 ID: 21
Registered course3 ID: 22
Registered course4 ID: 23
Registered course5 ID: 24
------------------------
student roll number: 6
student first name: Ahmed
student second name: Mostafe
student GPA: 3.75
Registered course1 ID: 23
Registered course2 ID: 24
Registered course3 ID: 25
Registered course4 ID: 26
Registered course5 ID: 27
-----------------------------------------
```

The Database after Deletion:

Note that: the student whose number 3 is not exist anymore and all the students information are shifted.

```
|------------------------
student roll number: 1
student first name: Mostafa
student second name: Khaled
student GPA: 3.40
Registered course1 ID: 20
Registered course2 ID: 21
Registered course3 ID: 22
Registered course4 ID: 23
Registered course5 ID: 24
------------------------
student roll number: 2
student first name: Karim
student second name: Sayed
student GPA: 3.98
Registered course1 ID: 1
Registered course2 ID: 2
Registered course3 ID: 3
Registered course4 ID: 4
Registered course5 ID: 5
------------------------
student roll number: 4
student first name: Mona
student second name: Ismail
student GPA: 3.20
Registered course1 ID: 18
Registered course2 ID: 17
Registered course3 ID: 20
Registered course4 ID: 23
Registered course5 ID: 24
------------------------
student roll number: 5
student first name: Mohsen
student second name: Ashraf
student GPA: 3.72
Registered course1 ID: 20
Registered course2 ID: 21
Registered course3 ID: 22
Registered course4 ID: 23
Registered course5 ID: 24
------------------------
student roll number: 6
student first name: Ahmed
student second name: Mostafe
student GPA: 3.75
Registered course1 ID: 23
Registered course2 ID: 24
Registered course3 ID: 25
Registered course4 ID: 26
Registered course5 ID: 27
------------------------------------------
```

8- Update Student information:

Trying to update student information whose roll number is 2:

```
2. Add the Student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Student Details by Course ID
6. Find the Total number of Students
7. Delete the Student Details by Roll Number
8. Update the Student Details by Roll Number
9. Show all information
10. Exit
 Enter your choice to perform the task
8
Enter student roll to be updated: 2
------------------------
1. first name
2. last name
3. roll no
4. GPA
5. Courses
6. Exit update
4
Enter the new GPA: 4.00
-------------------------------------------
```

Before update:

```
student roll number: 2
student first name: Karim
student second name: Sayed
student GPA: 3.98
Registered course1 ID: 1
Registered course2 ID: 2
Registered course3 ID: 3
Registered course4 ID: 4
Registered course5 ID: 5
```

After update:

```
 Enter your choice to perform the task
3
Enter Roll Number: 2
------------------------
student roll number: 2
student first name: Karim
student second name: Sayed
student GPA: 4.00  ←
Registered course1 ID: 1
Registered course2 ID: 2
Registered course3 ID: 3
Registered course4 ID: 4
Registered course5 ID: 5
```