

Mastering Embedded System Online Diploma

<https://www.learn-in-depth.com/>

First Term (Final Project 2)

Eng. Mohamed Abd El-Naby Mohamed

My Profile:

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

Contents

Description	3
System Operation	3
System Assumptions:	3
System design.....	3
Screenshots	4

Student Management System

Description

A students' database management system based on the Linked List queue data structure.

System Operation

- 1- Add student Manually.
- 2- Add Students from text file.
- 3- Find Student by roll number.
- 4- Find Student by first name.
- 5- Find students enrolled in course.
- 6- Find Total number of students.
- 7- Delete student by roll number.
- 8- Update student information.

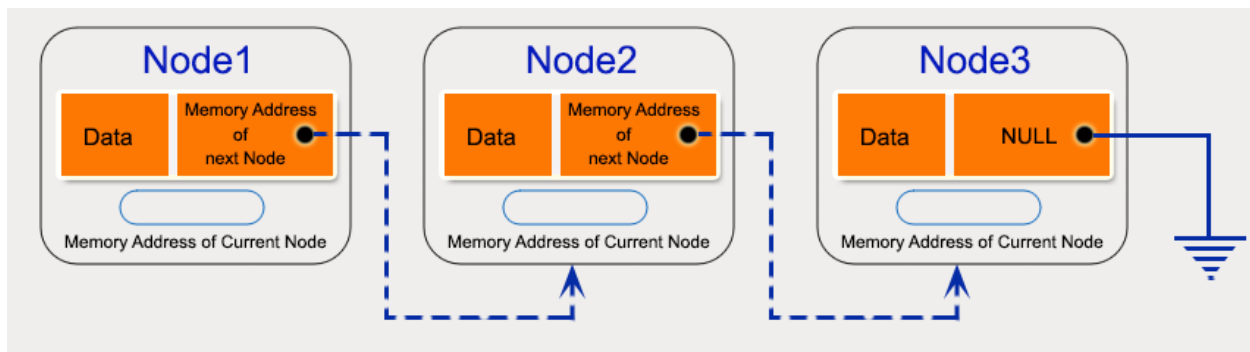
System Assumptions:

- 1- Controller setup and shutdown procedure are not modeled.
- 2- Controller maintenance is not modeled.
- 3- Pressure sensor never fails.
- 4- Alarm never fails.
- 5- All components never face power cut.

System design

Node is struct contain 2 element

- 1- Struct of student information.
- 2- Pointer to Next Node.



Screenshots

Welcome to the student management system

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 1

Add the student details

Enter the roll number: 10

Enter first name of student: Mohamed

Enter last name of student: Ahmed

Enter the GPA you obtained: 3.5

Enter the courses ID

Course 1 ID: 2

Course 2 ID: 4

Course 3 ID: 6

Course 4 ID: 8

Course 5 ID: 10

[INFO] Student details is added successfully

Choose the task that you want to perform

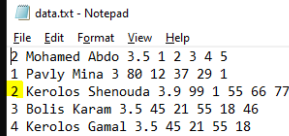
1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 2

[INFO] Roll number 2 saved successfully
[INFO] Roll number 1 saved successfully
[ERROR] Roll number 2 is already taken
[INFO] Roll number 3 saved successfully
[INFO] Roll number 4 saved successfully



```
data.txt - Notepad
File Edit Format View Help
1 Mohamed Abdo 3.5 1 2 3 4 5
2 Pavly Mina 3 80 12 37 29 1
3 Keroslos Shenouda 3.9 99 1 55 66 77
4 Bolis Karam 3.5 45 21 55 18 46
5 Keroslos Gamal 3.5 45 21 55 18
```

Choose the task that you want to perform

1. Add a student details manually

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 3

Find a student by roll number : 2

```
-----
Student First Name: Mohamed
Student Last Name: Abdo
Student Roll Number: 2
Student GPA Number: 3.5
Course 1 ID: 1
Course 2 ID: 2
Course 3 ID: 3
Course 4 ID: 4
Course 5 ID: 5
-----
```

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 4

Find a student by first name : Mohamed

Student First Name: Mohamed

Student Last Name: Abdo

Student Roll Number: 2

Student GPA Number: 3.5

Course 1 ID: 1

Course 2 ID: 2

Course 3 ID: 3

Course 4 ID: 4

Course 5 ID: 5

5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 5

Find students by course ID : 2

```
-----  
Student First Name: Mohamed  
Student Last Name: Ahmed  
Student Roll Number: 10  
Student GPA Number: 3.5  
Course 1 ID: 2  
Course 2 ID: 4  
Course 3 ID: 6  
Course 4 ID: 8  
Course 5 ID: 10  
-----
```

```
-----  
-----  
Student First Name: Mohamed  
Student Last Name: Abdo  
Student Roll Number: 2  
Student GPA Number: 3.5  
Course 1 ID: 1  
Course 2 ID: 2  
Course 3 ID: 3  
Course 4 ID: 4  
Course 5 ID: 5  
-----
```

Choose the task that you want to perform

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 6

[INFO] The total number of students is 5

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 7

Delete a student by roll number : 2

[INFO] The roll number is removed successfully

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 6

[INFO] The total number of students is 4

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 8

Update a student by roll number : 1

```
-----  
Student First Name: Pavly  
Student Last Name: Mina  
Student Roll Number: 1  
Student GPA Number: 3.0  
Course 1 ID: 80  
Course 2 ID: 12  
Course 3 ID: 37  
Course 4 ID: 29  
Course 5 ID: 1  
-----
```

Edit

1. First name
2. Last name
3. Roll number
4. GPA
5. Courses

Enter your choice: 2

Enter the new last name: salah

[INFO] Last NameUpdated successfully

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 9

```
-----  
Student First Name: Pavly  
Student Last Name: Mina  
Student Roll Number: 1  
Student GPA Number: 3.0  
Course 1 ID: 80  
Course 2 ID: 12  
Course 3 ID: 37  
Course 4 ID: 29  
Course 5 ID: 1  
-----
```

```
-----  
Student First Name: Bolis  
Student Last Name: Karam  
Student Roll Number: 3  
Student GPA Number: 3.5  
Course 1 ID: 45  
Course 2 ID: 21  
Course 3 ID: 55  
Course 4 ID: 18  
Course 5 ID: 46  
-----
```

```
-----  
Student First Name: Kerolos  
Student Last Name: Gamal  
Student Roll Number: 4  
Student GPA Number: 3.5  
Course 1 ID: 45  
Course 2 ID: 21  
Course 3 ID: 55  
Course 4 ID: 18  
Course 5 ID: 18  
-----
```

Choose the task that you want to perform

1. Add a student details manually
2. Add a student details from a text file
3. Find student details by roll number
4. Find student details by first name
5. Find student details by course ID
6. Find the total number of students
7. Delete student details by roll number
8. Update student details by roll number
9. Show all information
10. Exit

Enter your choice to perform the task: 10

Process returned 1 (0x1) execution time : 97.270 s
Press any key to continue.