Student Management System

Mastering Embedded System Online Diploma

Second Term (Final Project 2)

My Profile: <u>my progress page</u>

<u>(learn-in-depth-store.com)</u>

<u>www.learn-in-depth.com</u>

By: Eng. Abdelrahman Matarawy

Problem Statement:

➢ Program to Build a Simple Software for Student Information Management System which can Perform the Following Statement.

- Store The First Name of Student.
- Store The Last Name of Student.
- Store Unique Roll Number For every Student.
- Store The GPA of every student.
- Store The Courses Registered by the Student.

Approach:

➢ The Main Idea is to Form Individual Functions for every Operation. Then Unified All Functions together to Form Software.

- Add Student Details from File.
- Add Student Details Manually.
- Find Student by the given Roll Number.
- Find Student by the given First Name.
- Find Students Registered in a Course.
- Total Number of Students in List.
- Delete a Student from Queue List.
- Update Student Data.
- Show All Students in Our Queue.

❖Starting The Program:

```
================================================================
===================== Welcome To Student Management System =====================
================================================================

Choose The Task that you want to perform:
1. Add Student Details From text file
2. Add The Student Details Manually
3. Find The Student Details From Roll Number
4. Find The Student Details From First Name
5. Find The Students That registered in course ID
6. Find Total Number of Students
7. Delete The Students Details By Roll Number
8. Update The Students Details By Roll Number
9. Show All Information
10.Exit

Enter Your Choice to perform the Task:
```

- Stay Waiting Until User Choose from Options …

❖Add Student Details from File:

➢ Get Data from File and Add Student to Our List. While Adding the Student to the List, Check for the uniqueness of Roll Number.

  I.   The File Reading From it:

```
1    Abdelrahman Matarawy 4.0 1 2 3 4 5
1    Abdelrahman Ashraf    3.5 6 7 8 9 10
3    Samy Gamal            3.2 4 5 6 7 11
```

  II.   After Adding those Students to our Queue List:

```
Enter Your Choice to perform the Task: 1
Roll Number 1 Saved Successfully
[ERROR] The ID already Exist
Roll Number 3 Saved Successfully
Total Number Of Students: 2
You Can Add Up to 50
You can Add 48 more Students
```

"Second Student not Added because he has the Same ID of first Student."

Add Student Details Manually:

➢ Get Data from File and Add Student to Our List. While Adding the Student to the List, Check for the uniqueness of Roll Number.

I. Case 1 Adding Id Which Not Exist in List:

```
Enter Your Choice to perform the Task: 2
Student First Name: Abdelrahman
Student Last Name: Ashraf
Student Roll Number: 2
Student GPA: 3.5
The Course ID [1] : 6
The Course ID [2] : 7
The Course ID [3] : 8
The Course ID [4] : 9
The Course ID [5] : 10
=============== Thank You For Your Registration===============
Total Number Of Students: 3
You Can Add Up to 50
You can Add 47 more Students
```

II. Case 2 When Try to Add the Same Course ID Twice:

```
Enter Your Choice to perform the Task: 2
Student First Name: Amir
Student Last Name: Eslam
Student Roll Number: 4
Student GPA: 3.3
The Course ID [1] : 4
The Course ID [2] : 2
The Course ID [3] : 4
[ERROR]You Assign This Course Before Please Try Again
```

"In Case Adding ID of The Same Course Twice the Registration Process Will Stop"

Show Students After Adding from File and Manually:

```
nter Your Choice to perform the Task: 9
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
The Student No 1 Details:
The First Name: Abdelrahman
The last Name: Matarawy
Roll Number: 1
The GPA: 4.00
The Courses You are registered in:
        The Course ID: 1
        The Course ID: 2
        The Course ID: 3
        The Course ID: 4
        The Course ID: 5
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
The Student No 2 Details:
The First Name: Samy
The last Name: Gamal
Roll Number: 3
The GPA: 3.20
The Courses You are registered in:
        The Course ID: 4
        The Course ID: 5
        The Course ID: 6
        The Course ID: 7
        The Course ID: 11
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
The Student No 3 Details:
The First Name: Abdelrahman
The last Name: Ashraf
Roll Number: 2
The GPA: 3.50
The Courses You are registered in:
        The Course ID: 6
        The Course ID: 7
        The Course ID: 8
        The Course ID: 9
        The Course ID: 10
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

Search By Roll Number:

➢ This Function it to Find the Student Record for the given Roll Number and Print Student Details.

    I.   Case 1 Search with ID exist in List:

```
Enter Your Choice to perform the Task: 3
Enter The ID of Student: 2
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
The Student No 3 Details:
The First Name: Abdelramanhman
The last Name: Ashraf
Roll Number: 2
The GPA: 3.50
The Courses You are registered in:
        The Course ID: 6
        The Course ID: 7
        The Course ID: 8
        The Course ID: 9
        The Course ID: 10
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

    II.   Case 2 Search with ID Not Found in List:

```
Enter Your Choice to perform the Task: 3
Enter The ID of Student: 6

[ERROR] Roll Number 6 not found
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

Search By First Name:

➢ This Function it to Find the Student Record for the given Roll Number and Print Student Details.

I. Case 1 Search with Name Exist in List:

```
nter Your Choice to perform the Task: 4
Enter The First Name of Student: abdelrahman
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
The Student No 1 Details:
The First Name: Abdelrahman
The last Name: Matarawy
Roll Number: 1
The GPA: 4.00
The Courses You are registered in:
        The Course ID: 1
        The Course ID: 2
        The Course ID: 3
        The Course ID: 4
        The Course ID: 5
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
The Student No 3 Details:
The First Name: Abdelrahman
The last Name: Ashraf
Roll Number: 2
The GPA: 3.50
The Courses You are registered in:
        The Course ID: 6
        The Course ID: 7
        The Course ID: 8
        The Course ID: 9
        The Course ID: 10
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

II. Case 2 Search with Name not Exist:

```
Enter Your Choice to perform the Task: 4
Enter The First Name of Student: Kero

[ERROR] First Name You Entered not found
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

Students Registered in Course:

➤ This Function to find All Students Who Registered for a given Course ID.

   I.   Case 1 Course ID Exist:

```
Enter Your Choice to perform the Task: 5
Enter Course ID: 4
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
The Student Details:
The First Name: Abdelrahman
The last Name: Matarawy
Roll Number: 1
The GPA: 4.00
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
The Student Details:
The First Name: Samy
The last Name: Gamal
Roll Number: 3
The GPA: 3.20
Total Student Registered In this Course = 2
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

   II.   Case 2 Course Not Exist:

```
Enter Your Choice to perform the Task: 5
Enter Course ID: 15

[ERROR] The Course ID You Entered not found
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

Total Students:

➤ This Function to Print total Number of Students.

```
Enter Your Choice to perform the Task: 6
Total Number Of Students: 3
You Can Add Up to 50
You can Add 47 more Students
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

Delete A Student:

➢ This Function to Delete Student with his Roll Number.

    I.   Case 1 as Exist ID:

```
Enter Your Choice to perform the Task: 7
Enter The ID of Student: 2
[Done] The Student Removed Successfully
Total Number Of Students: 2
You Can Add Up to 50
You can Add 48 more Students
```

    II.   Case 2 as ID is not Exist:

```
Enter Your Choice to perform the Task: 7
Enter The ID of Student: 6

[ERROR] Roll Number 6 not found
```

➢ Show Students After Deleting:

```
r Your Choice to perform the Task: 9

he Student No 1 Details:
The First Name: Abdelrahman
The last Name: Matarawy
Roll Number: 1
The GPA: 4.00
The Courses You are registered in:
        The Course ID: 1
        The Course ID: 2
        The Course ID: 3
        The Course ID: 4
        The Course ID: 5

The Student No 2 Details:
The First Name: Samy
The last Name: Gamal
Roll Number: 3
The GPA: 3.20
The Courses You are registered in:
        The Course ID: 4
        The Course ID: 5
        The Course ID: 6
        The Course ID: 7
        The Course ID: 11
```

Editing Student Data:

➤ This Function is to Update the Student records. This Function does not ask for new details for all Fields but the User Should be able to Pick and Choose what he wants to Update.

I. By Edit Roll Number:

```
Enter Your Choice to perform the Task: 8
Enter The Roll Number That you want to Update: 3
1. First Name
2. Last Name
3. Roll Number
4. GPA
5. Courses
3
Enter The New Roll Number: 2
[Done] The Student Data Update Successfully
```

```
The Student No 2 Details:
The First Name: Samy
The last Name: Gamal
Roll Number: 2
The GPA: 3.20
The Courses You are registered in:
        The Course ID: 4
        The Course ID: 5
        The Course ID: 6
        The Course ID: 7
        The Course ID: 11
```

II. By Edit Courses:

```
Enter Your Choice to perform the Task: 8
Enter The Roll Number That you want to Update: 2
1. First Name
2. Last Name
3. Roll Number
4. GPA
5. Courses
5
The Course ID [1] : 6
The Course ID [2] : 7
The Course ID [3] : 8
The Course ID [4] : 9
The Course ID [5] : 10
[Done] The Student Data Update Successfully
```

```
Enter Your Choice to perform the Task: 8
Enter The Roll Number That you want to Update: 2
1. First Name
2. Last Name
3. Roll Number
4. GPA
5. Courses
5
The Course ID [1] : 6
The Course ID [2] : 6
[ERROR]You Assign This Course Before Please Try Again
```

End of Program:

```
Choose The Task that you want to perform:
1. Add Student Details From text file
2. Add The Student Details Manually
3. Find The Student Details From Roll Number
4. Find The Student Details From First Name
5. Find The Students That registered in course ID
6. Find Total Number of Students
7. Delete The Students Details By Roll Number
8. Update The Students Details By Roll Number
9. Show All Information
10.Exit

Enter Your Choice to perform the Task: 10
Thank You To Use Our Program ('_')
```