Mastering Embedded System Online Diploma

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First Term (Final Project 2)

Student Management System

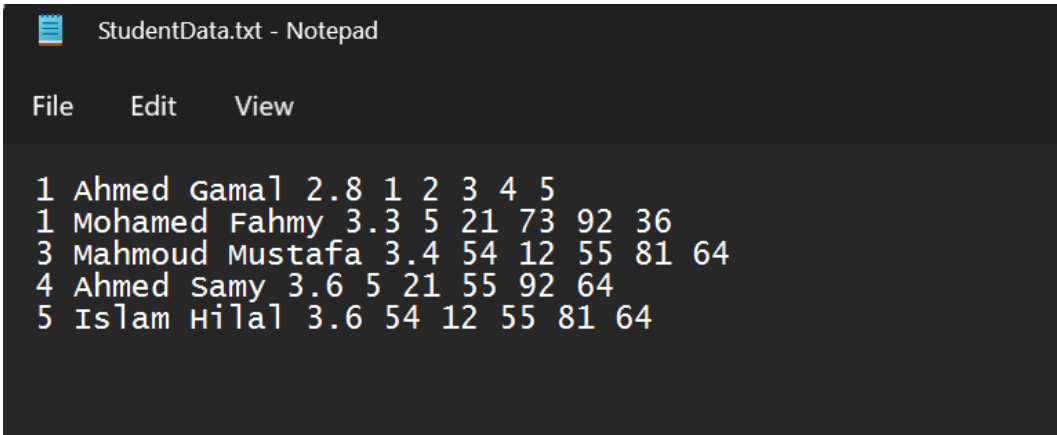# Eng. Mahmoud Ashraf

Main Menu:

```
FIFO has been initialized successfully
=== WELCOME TO STUDENT MANAGEMENT SYSTEM ===
-------------------------------------------
 Chose the task that you want to perform
1- Add the students data manually
2- Load Students data from file
3- Find student details by roll number
4- Find student details by first name
5- Find student details by course ID
6- Find total number of students
7- Delete student details by roll number
8- Update student details by roll number
9- Show all information
10- Save data to output file
11- Exit the system
===> Enter your choice number
```

Data File:

```
StudentData.txt - Notepad

File    Edit    View

1 Ahmed Gamal 2.8 1 2 3 4 5
1 Mohamed Fahmy 3.3 5 21 73 92 36
3 Mahmoud Mustafa 3.4 54 12 55 81 64
4 Ahmed Samy 3.6 5 21 55 92 64
5 Islam Hilal 3.6 54 12 55 81 64
```

Load Data File:

```
    [INFO] student roll 1 has been added successfully
   [INFO] System stored 1 student remains : 49 student
   -------------------------------------------
   [ERROR] : This Roll ID (1) already exist
   -------------------------------------------
   Student Roll Number : 1
   First Name : Ahmed
   Last Name : Gamal
   GPA: 2.800000
   Registered Courses ID : [  1    2    3    4    5  ]
   -------------------------------------------
   [INFO] student roll 3 has been added successfully
   [INFO] System stored 2 student remains : 48 student
   [INFO] student roll 4 has been added successfully
   [INFO] System stored 3 student remains : 47 student
   [INFO] student roll 5 has been added successfully
   [INFO] System stored 4 student remains : 46 student
   -------------------------------------------
```

Add Duplicated Roll ID:

```
===> Enter your choice number
1
 Enter Student Roll ID
3
-------------------------------------------
[ERROR] : This Roll ID (3) already exist
-------------------------------------------
Student Roll Number : 3
First Name : Mahmoud
Last Name : Mustafa
GPA: 3.400000
Registered Courses ID : [  54   12   55   81   64  ]
-------------------------------------------
```

Add Student Manually:

```
===> Enter your choice number
1
 Enter Student Roll ID
6
Enter Student first Name
Marwa
Enter Student last Name
Adel
Enter Student GPA
3.46
Enter Student Courses ID
==> Enter Course 1 ID
5
==> Enter Course 2 ID
10
==> Enter Course 3 ID
12
==> Enter Course 4 ID
20
==> Enter Course 5 ID
16
[INFO] student roll 6 has been added successfully
System stored 5 student remains : 45 student
-------------------------------------------
```

Find Student by Roll ID:

```
 ===> Enter your choice number
3
 Enter Roll ID for the student
5
Student Roll Number : 5
First Name : Islam
Last Name : Hilal
GPA: 3.600000
Registered Courses ID : [  54    12    55    81    64  ]
-------------------------------------------
```

Find Student by Name:

```
===> Enter your choice number
4
 Enter first name for the student
mahmoud
Student Roll Number : 3
First Name : Mahmoud
Last Name : Mustafa
GPA: 3.400000
Registered Courses ID : [  54    12    55    81    64  ]
------------------------------------------
------------------------------------------
```

Find Students Registered Course ID:

```
===> Enter your choice number
5
 Enter Course ID
5
The students registered this course ID are :
Student Roll Number : 1
First Name : Ahmed
Last Name : Gamal
GPA: 2.800000
Registered Courses ID : [  1    2    3    4    5  ]
------------------------------------------
The students registered this course ID are :
Student Roll Number : 4
First Name : Ahmed
Last Name : Samy
GPA: 3.600000
Registered Courses ID : [  5    21    55    92    64  ]
------------------------------------------
The students registered this course ID are :
Student Roll Number : 6
First Name : Marwa
Last Name : Adel
GPA: 3.460000
Registered Courses ID : [  5    10    12    20    16  ]
------------------------------------------
Number of student register Course ID: (5) are : (3)
------------------------------------------------------
```

Total Students Statistics:

```
===> Enter your choice number
6

 Maximum size of storage is : 50
Number of students have been stored : 5 student
Number of students remain : 45
-------------------------------------------------------
```

Delete Student:

```
===> Enter your choice number
7

 Enter Roll ID for the student
1

[INFO] Student roll 1 has been deleted successfully
-------------------------------------------
```

Total Students After Deleting:

```
===> Enter your choice number
6

 Maximum size of storage is : 50
Number of students have been stored : 4 student
Number of students remain : 46
-------------------------------------------------------
```

Show All Students:

```
===> Enter your choice number
9


=============== print ===============
Student Roll Number : 3
First Name : Mahmoud
Last Name : Mustafa
GPA: 3.400000
Registered Courses ID : [  54    12    55    81    64  ]
----------------------------------------
Student Roll Number : 4
First Name : Ahmed
Last Name : Samy
GPA: 3.600000
Registered Courses ID : [  5    21    55    92    64  ]
----------------------------------------
Student Roll Number : 5
First Name : Islam
Last Name : Hilal
GPA: 3.600000
Registered Courses ID : [  54    12    55    81    64  ]
----------------------------------------
Student Roll Number : 6
First Name : Marwa
Last Name : Adel
GPA: 3.460000
Registered Courses ID : [  5    10    12    20    16  ]
----------------------------------------
```

Update Wrong ID:

```
===> Enter your choice number
8
 Enter Roll ID for the student
10
----------------------------------------------
[ERROR] : This ID doesn't exist
----------------------------------------------
```

Update Student:

```
===> Enter your choice number
8
 Enter Roll ID for the student
5
Choose which item to update :
1- Roll ID
2- First name
3- Last name
4- GPA
5- Courses
6- Back to main menu
4
Enter Student (New) GPA
2.2
[INFO] Student information has been updated successfully
Choose which item to update :
1- Roll ID
2- First name
3- Last name
4- GPA
5- Courses
6- Back to main menu
3
Enter Student ( New ) last Name
mahmoud
[INFO] Student information has been updated successfully
Choose which item to update :
1- Roll ID
2- First name
3- Last name
4- GPA
5- Courses
6- Back to main menu
6
[INFO] Student information has been updated successfully
-----------------------------------------
```
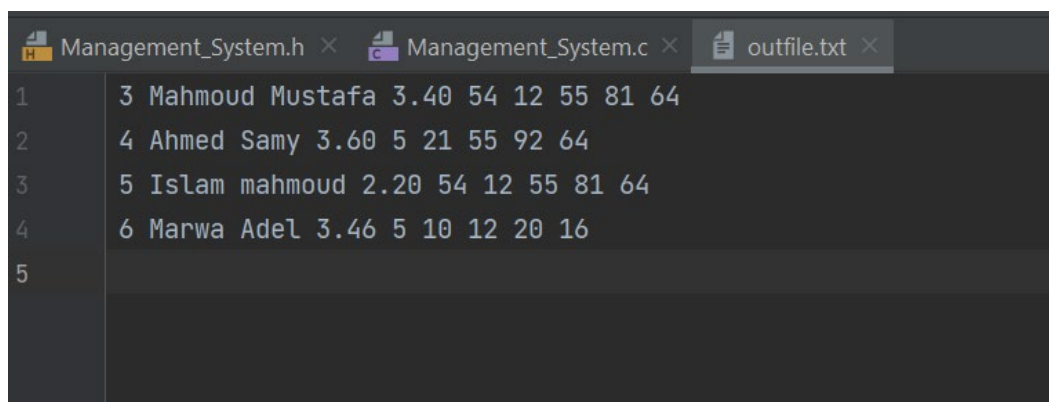
Print Student After Updating:

```
===> Enter your choice number
3
 Enter Roll ID for the student
5
Student Roll Number : 5
First Name : Islam
Last Name : mahmoud
GPA: 2.200000
Registered Courses ID : [  54    12    55    81    64  ]
------------------------------------------
```

Save Changes to File:

```
===> Enter your choice number
10


================ printing in file  ===============
[INFO] Data saved to file successfully
------------------------------------------
```

Output File:

```
Management_System.h ×    Management_System.c ×    outfile.txt ×
1      3 Mahmoud Mustafa 3.40 54 12 55 81 64
2      4 Ahmed Samy 3.60 5 21 55 92 64
3      5 Islam mahmoud 2.20 54 12 55 81 64
4      6 Marwa Adel 3.46 5 10 12 20 16
5
```