



STUDENT MANAGEMENT



PROJECT 2

MADE BY:

YEHIA HASAN YEHIA

1.0 HOME INTERFACE

```
----STUDENT MANAGER----  
1- Add Students from File  
2- Add Student Manually  
3- Find Student by roll number  
4- Find Students by First Name  
5- Find Students in a course  
6- Update Student  
7- Delete Student  
8- Show All Students  
9- Get Number of Students  
10- Exit
```

*Note: In some screenshots, the option “9- Get Number of Students” isn’t there because I forgot to add it but remembered mid-way through writing this report

2.0 ADD FROM FILE

2.1 Txt File for Testing

The screenshot shows a text editor with a file named 'student.txt'. The file contains the following lines:

```
1 1 Yehia Hasan 2.33 1 2 1  
2 1 Mohamed Hussein 3  
3 2 Yehia Ismail 8  
4 3 Mina Morgan 3.8 1 2 3  
5 4  
6  
7  
8
```

Annotations with red arrows point to specific parts of the file:

- Duplicate Course**: Points to the '1' in the first column of line 1.
- Duplicate Roll Number**: Points to the '1' in the first column of line 2.
- Invalid GPA**: Points to the '8' in the GPA column of line 3.
- Complete Student Data**: Points to the entire line 4.
- Incomplete student Data**: Points to line 5.

2.2 Run

```
Your Choice: 1

Reading Student Number 1
Discarding Duplicate Course!!
Student Added Successfully!
-----
Roll No.: 1
Name: Yehia Hasan
GPA: 2.33
Courses Enrolled: 1 2
-----

Reading Student Number 2
Roll Number Already Exists!!,Student not Registered

Reading Student Number 3
Invalid GPA, Defaulting to 2
Student Added Successfully!
-----
Roll No.: 2
Name: Yehia Ismail
GPA: 2.00
Courses Enrolled:
-----

Reading Student Number 4
Student Added Successfully!
-----
Roll No.: 3
Name: Mina Morgan
GPA: 3.80
Courses Enrolled: 1 2 3
-----

Reading Student Number 5
Discarding Incomplete Student Data!
```

3.0 ADD STUDENT MANUAL

3.1 Normal Scenario

```
Your Choice: 2
Enter the Roll Number: 5
Enter the first Name: Yehia
Enter the last Name: Khaled
Enter the GPA : 3.3
Enter the number of courses (MAX 10): 4
Enter the ID of course No. 1: 1
Enter the ID of course No. 2: 2
Enter the ID of course No. 3: 3
Enter the ID of course No. 4: 4
Student Added Successfully!
```

```
----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9-Exit
```

```
Your Choice: 3
Enter the roll number: 5
Found Successfully!
```

```
-----
Roll No.: 5
Name: Yehia Khaled
GPA: 3.30
Courses Enrolled: 1 2 3 4
-----
```

3.2 Duplicate Roll Number

```
----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9-Exit

Your Choice: 2
Enter the Roll Number: 5
Roll Number Already Exists!!
Enter Another One
Enter the Roll Number: █
```

3.3 Invalid GPA

```
----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9-Exit

Your Choice: 2
Enter the Roll Number: 5
Roll Number Already Exists!!
Enter Another One
Enter the Roll Number: 6
Enter the first Name: Youssef
Enter the last Name: Ismail
Enter the GPA : 6
Invalid GPA, Try Again
Enter the GPA : █
```

3.4 Duplicate Course

```
Enter the number of courses (MAX 10): 3
Enter the ID of course No. 1: 1
Enter the ID of course No. 2: 1
Course Already Enrolled!!
Enter the ID of course No. 2: 2
Enter the ID of course No. 3: 3
Student Added Successfully!
```

3.5 Attempt to Register More than 10 Courses

```
Your Choice: 2
Enter the Roll Number: 7
Enter the first Name: Yasser
Enter the last Name: Hany
Enter the GPA : 3
Enter the number of courses (MAX 10): 90
MAX is 10 courses, try again
Enter the number of courses (MAX 10): █
```

4.0 SHOW ALL STUDENTS

```
----STUDENT MANAGER----  
1- Add Students from File  
2- Add Student Manually  
3- Find Student by roll number  
4- Find Students by First Name  
5- Find Students in a course  
6- Update Student  
7- Delete Student  
8- Show All Students  
9-Exit
```

Your Choice: 8

```
-----  
Roll No.: 1  
Name: Yehia Hasan  
GPA: 2.33  
Courses Enrolled: 1 2  
-----
```

```
-----  
Roll No.: 2  
Name: Yehia Ismail  
GPA: 2.00  
Courses Enrolled:  
-----
```

```
-----  
Roll No.: 3  
Name: Mina Morgan  
GPA: 3.80  
Courses Enrolled: 1 2 3  
-----
```

*Note: For the rest of the report, I only added the students from the file as shown before and discarded all manually added students

5.0 GET STUDENT BY ROLL NUMBER

5.1 Existing Roll Number

```
----STUDENT MANAGER----  
1- Add Students from File  
2- Add Student Manually  
3- Find Student by roll number  
4- Find Students by First Name  
5- Find Students in a course  
6- Update Student  
7- Delete Student  
8- Show All Students  
9-Exit
```

```
Your Choice: 3  
Enter the roll number: 1  
Found Successfully!
```

```
-----  
Roll No.: 1  
Name: Yehia Hasan  
GPA: 2.33  
Courses Enrolled: 1 2  
-----
```

5.2 Non-Existing Roll Number

```
----STUDENT MANAGER----  
1- Add Students from File  
2- Add Student Manually  
3- Find Student by roll number  
4- Find Students by First Name  
5- Find Students in a course  
6- Update Student  
7- Delete Student  
8- Show All Students  
9-Exit
```

```
Your Choice: 3  
Enter the roll number: 9  
Student Not Found!!
```


6.0 GET STUDENTS BY FIRST NAME

6.1 Existing First Name

```
----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9-Exit

Your Choice: 4
Enter the first name: Yehia
The Students with first name Yehia are:
-----
Roll No.: 1
Name: Yehia Hasan
GPA: 2.33
Courses Enrolled: 1 2
-----
Roll No.: 2
Name: Yehia Ismail
GPA: 2.00
Courses Enrolled:
-----
```

6.2 Non-Existing First Name

```
----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9-Exit

Your Choice: 4
Enter the first name: Hussein
The Students with first name Hussein are:
No Student has this name
```

7.0 GET STUDENTS IN COURSE

7.1 Normal Scenario

```
----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9-Exit

Your Choice: 5
Enter the course number: 1
The Students enrolled in course 1 are:
-----
Roll No.: 1
Name: Yehia Hasan
GPA: 2.33
Courses Enrolled: 1 2
-----
Roll No.: 3
Name: Mina Morgan
GPA: 3.80
Courses Enrolled: 1 2 3
-----
```

7.2 Error Scenario

```
----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9-Exit

Your Choice: 5
Enter the course number: 9
The Students enrolled in course 9 are:
No Student has enrolled in this Course
or This Course doesn't exist
```

8.0 UPDATE STUDENT

8.1 Update Excluding Courses

8.1.1 Normal Scenario

```
Your Choice: 6
Please Enter the roll number: 1
Current Roll Number: 1
Do you want to update the roll number(y/n): y
Enter the new roll number: 4
Current First Name: Yehia
Do you want to update the first name(y/n): y
Enter the first name: Gamal
Current Last Name: Hasan
Do you want to update the last name(y/n): y
Enter the last name: Ismail
Current GPA: 2.330000
Do you want to update the student's GPA(y/n): y
Enter the new GPA: 3
Current Courses:
1 2
Do you want to update the student's courses(y/n): n
Successfully modified student!
-----
Roll No.: 4
Name: Gamal Ismail
GPA: 3.00
Courses Enrolled: 1 2
-----
```

8.1.2 Student not found

```
----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9-Exit

Your Choice: 6
Please Enter the roll number: 7
No student has this roll number!
```

8.1.3 New duplicate roll number

```
Your Choice: 6
Please Enter the roll number: 4
Current Roll Number: 4
Do you want to update the roll number(y/n): y
Enter the new roll number: 2
A student already has this roll number!
Enter the new roll number: 
```

8.1.4 Invalid new GPA

```
Your Choice: 6
Please Enter the roll number: 4
Current Roll Number: 4
Do you want to update the roll number(y/n): n
Current First Name: Gamal
Do you want to update the first name(y/n): n
Current Last Name: Ismail
Do you want to update the last name(y/n): n
Current GPA: 3.000000
Do you want to update the student's GPA(y/n): y
Enter the new GPA: 8
Invalid GPA try Again
Enter the new GPA: 
```

8.2 Courses Update

8.2.1 Courses update options

```
Your Choice: 6
Please Enter the roll number: 4
Current Roll Number: 4
Do you want to update the roll number(y/n): n
Current First Name: Gamal
Do you want to update the first name(y/n): n
Current Last Name: Ismail
Do you want to update the last name(y/n): n
Current GPA: 2.330000
Do you want to update the student's GPA(y/n): n
Current Courses:
1 2
Do you want to update the student's courses(y/n): y

1- Add Course
2- Change Course
3- Remove Course
4- Exit Course Modification
Your Choice: █
```

8.2.2 Add Course

```
1- Add Course
2- Change Course
3- Remove Course
4- Exit Course Modification
Your Choice: 1
Which Course is to be added: 3
Successfully Added!
Courses Now: 1 2 3
```

8.2.3 Add duplicate course

```
Courses Now: 1 2 3

1- Add Course
2- Change Course
3- Remove Course
4- Exit Course Modification
Your Choice: 1
Which Course is to be added: 3
Course is already enrolled!
Courses Now: 1 2 3
```

8.2.4 Change course

```
Courses Now: 1 2 3

1- Add Course
2- Change Course
3- Remove Course
4- Exit Course Modification
Your Choice: 2
Enter the course you would like to change: 2
Enter the new course: 4
Successfully Modified Course!
Courses Now: 1 4 3
```

8.2.5 Change a course to a duplicate

```
Courses Now: 1 4 3

1- Add Course
2- Change Course
3- Remove Course
4- Exit Course Modification
Your Choice: 2
Enter the course you would like to change: 4
Enter the new course: 3
Student is already enrolled in this course!
Courses Now: 1 4 3
```

8.2.6 Change unenrolled course

```
Courses Now: 1 4 3

1- Add Course
2- Change Course
3- Remove Course
4- Exit Course Modification
Your Choice: 2
Enter the course you would like to change: 6
Student is not enrolled in this course!
Courses Now: 1 4 3
```

8.2.7 Delete course

```
Courses Now: 1 4 3

1- Add Course
2- Change Course
3- Remove Course
4- Exit Course Modification
Your Choice: 3
Which Course will be removed: 4
Successfully Removed!
Courses Now: 1 3
```

8.2.8 Delete unenrolled course

```
Courses Now: 1 3

1- Add Course
2- Change Course
3- Remove Course
4- Exit Course Modification
Your Choice: 3
Which Course will be removed: 6
Student is not enrolled in this course!
Courses Now: 1 3
```


9.0 DELETE STUDENT

9.1 Normal Scenario

```
Your Choice: 8
-----
Roll No.: 1
Name: Yehia Hasan
GPA: 2.33
Courses Enrolled: 1 2
-----
Roll No.: 2
Name: Yehia Ismail
GPA: 2.00
Courses Enrolled:
-----
Roll No.: 3
Name: Mina Morgan
GPA: 3.80
Courses Enrolled: 1 2 3
-----
```

After Deletion

```
Your Choice: 7
Please Enter the roll number: 1
Student Successfully removed!

----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9- Get Number of Students
10- Exit

Your Choice: 8
-----
Roll No.: 2
Name: Yehia Ismail
GPA: 2.00
Courses Enrolled:
-----
Roll No.: 3
Name: Mina Morgan
GPA: 3.80
Courses Enrolled: 1 2 3
-----
```


9.2 Non-Existent Student

```
----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9- Get Number of Students
10- Exit

Your Choice: 7
Please Enter the roll number: 8
No student has this roll number!
```

10.0 GET STUDENTS NUMBER

```
Your Choice: 8
-----
Roll No.: 2
Name: Yehia Ismail
GPA: 2.00
Courses Enrolled:
-----

Roll No.: 3
Name: Mina Morgan
GPA: 3.80
Courses Enrolled: 1 2 3
-----

----STUDENT MANAGER----
1- Add Students from File
2- Add Student Manually
3- Find Student by roll number
4- Find Students by First Name
5- Find Students in a course
6- Update Student
7- Delete Student
8- Show All Students
9- Get Number of Students
10- Exit

Your Choice: 9
Number of students in system is 2 students
There are 48 available slots in the Queue
```