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Project 2 Report:

Student Database Using Database

<u>Student management using queue Problem statement:</u>

Write a program to build a simple software for student information management system which can perform the following operations:

1. Store the first name of the student.

2. Store the last name of the student.

 3. Store the unique roll number for every student.

 4. Store the GPA of every student. 5. Store the courses registered by the student.

Approach:

 Nine functions have implemented and unified to build this system.

1. Add a student manually.

Cases:

• A student with unique roll number.

```
Welcome to the student management system

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 students details by first name
5.  Find the students 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
please Enter your choice: 1


---------------------------------------------
Enter the Roll Number: 1
Enter the first name of student: mina
Enter the last name of student: sabryk
Enter the GPA you obtained: 3.2
Enter the course ID of each course
Course 1 id: 1
Course 2 id: 2
Course 3 id: 3
Course 4 id: 6
Course 5 id: 8
Student's Data are added successfully
---------------------------------------------
  The total number of students is 1
  You can add up to 50 students
  You can add 49 more 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 students details by first name
5.   Find the students 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
please Enter your choice: 9


-------------------------------------------

Student first name: mina
Student last name:  sabryk
Student roll number: 1
Student GPA number: 3.20
The courses IDs are: 1 2 3 6 8
-------------------------------------------

Student first name: kiro
Student last name:  sabryk
Student roll number: 2
Student GPA number: 3.60
The courses IDs are: 4 5 6 1 2
```

• A student with repeated roll number.

```
IU. LAIC
please Enter your choice: 1


---------------------------------------------
Enter the Roll Number: 1
===ERROR== Roll Number 1 is already taken
========Failed to add student========
```

2. Add students from text file.

Cases:

❖ Text file: includes a repeated 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 students details by first name
5.  Find the students 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
please Enter your choice: 2


-----------------------------------------
   Students details are saved successfully
-----------------------------------------
   The total number of students is 4
   You can add up to 50 students
   You can add 46 more 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 students details by first name
5.  Find the students 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
```

```
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
please Enter your choice: 9


---------------------------------------------

Student first name: Mina
Student last name:  Sabry
Student roll number: 1
Student GPA number: 3.10
The courses IDs are: 1 2 3 4 5
---------------------------------------------

Student first name: Kiro
Student last name:  Sabry
Student roll number: 2
Student GPA number: 3.67
The courses IDs are: 8 7 6 9 5
---------------------------------------------

Student first name: Abdallah
Student last name:  Elsayed
Student roll number: 3
Student GPA number: 3.33
The courses IDs are: 3 5 4 9 7
---------------------------------------------

Student first name: Adam
Student last name:  Sohail
Student roll number: 4
Student GPA number: 2.20
The courses IDs are: 1 2 6 7 3
---------------------------------------------
```

3. Find a student by the given roll number.

Cases:

• Roll number is registered.

• Roll number is not registered.

```
---------------------------------------------

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 students details by first name
5.  Find the students 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
please Enter your choice: 3


---------------------------------------------
Enter the Roll number of the student: 2
The student details are:
The first name is Kiro
The last name is Sabry
The GPA is 3.67
The courses IDs are:8 7 6 9 5
-------------------------------
```

4. Find a student by the given first name.

Cases:

• First name is registered.

```
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 students details by first name
5.  Find the students 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
please Enter your choice: 4

---------------------------------------------
Enter the first name of the student: Adam
The student details are:
The first name is Adam
The last name is Sohail
The Roll number is 4
The GPA is 2.20
The courses IDs are:1 2 6 7 3
```

- First name is not registered.

```
========Failed to add student========

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 students details by first name
5.  Find the students 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
please Enter your choice: 3


_____
Enter the Roll number of the student: 10
===ERROR=== Roll number 10 not found


_____
```

5. Find the students registered in a course by the given course ID.

Cases:

- Course ID is registered.

```
4.    Find the students details by first name
5.    Find the students 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
please Enter your choice: 5


-----------------------------------------------
Enter the course ID:
1
The student details are:
The first name is Mina
The last name is Sabry
The Roll number is 1
The GPA is 3.10
The student details are:
The first name is Adam
The last name is Sohail
The Roll number is 4
The GPA is 2.20
Total number of students =: 2
```

• Course ID is not registered.

```
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 students details by first name
5.   Find the students 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
please Enter your choice: 5


------------------------------------------------
Enter the course ID: 12
===ERROR=== course id 12 not found

------------------------------
```

6. Find the total number of registered 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 students details by first name
5.   Find the students 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
please Enter your choice: 6


------------------------------------------------
  The total number of students is 4
  You can add up to 50 students
  You can add 46 more students
```

7. Delete a student by the given roll number.

Cases:

• Roll number is registered.

```
-----------------------------------------------
  The total number of students is 4
  You can add up to 50 students
  You can add 46 more students

Choose the task that you want to perform
..   Add the student details manually
2.   Add the student details from text file
3.   Find the student details by roll number
4.   Find the students details by first name
5.   Find the students 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
.0.  Exit
please Enter your choice: 7

-----------------------------------------------
Enter the Roll number which you want to delete: 2
The Roll number 2 is removed successfully

Choose the task that you want to perform
..   Add the student details manually
2.   Add the student details from text file
3.   Find the student details by roll number
4.   Find the students details by first name
5.   Find the students 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
.0.  Exit
```

```
2.   Add the student details from text file
3.   Find the student details by roll number
4.   Find the students details by first name
5.   Find the students 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
please Enter your choice: 9


---------------------------------------------

Student first name: Mina
Student last name:  Sabry
Student roll number: 1
Student GPA number: 3.10
The courses IDs are: 1 2 3 4 5
---------------------------------------------

Student first name: Abdallah
Student last name:  Elsayed
Student roll number: 3
Student GPA number: 3.33
The courses IDs are: 3 5 4 9 7
---------------------------------------------

Student first name: Adam
Student last name:  Sohail
Student roll number: 4
Student GPA number: 2.20
The courses IDs are: 1 2 6 7 3
---------------------------------------------

Choose the task that you want to perform
1.   Add the student details manually
```

- Roll number is not registered.

```
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 students details by first name
5.   Find the students 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
please Enter your choice: 7


-----------------------------------------------
Enter the Roll number which you want to delete: 10
===ERROR=== This Roll number 10 not found
```

8. Update a student information by the given roll number.

Cases:

A. Update roll number.

• Roll number is registered.

```
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 students details by first name
5.   Find the students 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
please Enter your choice: 8

------------------------------------------------
Enter the Roll number to update the entry: 1
Select a Number to edit
1. First name
2. Last name
3. Roll number
4. GPA
5. Courses
3
Enter the Roll number: 9
   UPDATED SUCCESSFULLY.
```

• Roll number is not registered.

```
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 students details by first name
5.   Find the students 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
please Enter your choice: 8

_____
Enter the Roll number to update the entry: 9
===ERROR=== This Roll number 9 not found
```

B. Update last name.

```
4.   Find the students details by first name
5.   Find the students 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
please Enter your choice: 8

_____
Enter the Roll number to update the entry: 9
Select a Number to edit
1. First name
2. Last name
3. Roll number
4. GPA
5. Courses
2
Enter the last name: karam
   UPDATED SUCCESSFULLY.
```

C. Update first name.

```
Student first name: Adam
Student last name:  Sohail
Student roll number: 4
Student GPA number: 2.20
The courses IDs are: 1 2 6 7 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 students details by first name
5.  Find the students 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
please Enter your choice: 8


------------------------------------------------
Enter the Roll number to update the entry: 1
Select a Number to edit
1. First name
2. Last name
3. Roll number
4. GPA
5. Courses
1
Enter the first name: mina_new
  UPDATED SUCCESSFULLY.
```

```
3.   Find the student details by roll number
4.   Find the students details by first name
5.   Find the students 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
please Enter your choice: 9


-----------------------------------------------

Student first name: mina_new
Student last name:  Sabry
Student roll number: 1
Student GPA number: 3.10
The courses IDs are: 1 2 3 4 5
-----------------------------------------------

Student first name: Abdallah
Student last name:  Elsayed
Student roll number: 3
Student GPA number: 3.33
The courses IDs are: 3 5 4 9 7
-----------------------------------------------

Student first name: Adam
Student last name:  Sohail
Student roll number: 4
Student GPA number: 2.20
The courses IDs are: 1 2 6 7 3
-----------------------------------------------
```

D. Update GPA

```
4.    Find the students details by first name
5.    Find the students 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
please Enter your choice: 8

-----------------------------------------------
Enter the Roll number to update the entry: 9
Select a Number to edit
1. First name
2. Last name
3. Roll number
4. GPA
5. Courses
4
Enter the GPA: 3.9
   UPDATED SUCCESSFULLY.
```

E. Update Courses ID

```
-----------------------------------------------
Enter the Roll number to update the entry: 9
Select a Number to edit
1. First name
2. Last name
3. Roll number
4. GPA
5. Courses
5
Enter the courses' IDs:
Course 1 ID is : 10
Course 2 ID is : 22
Course 3 ID is : 55
Course 4 ID is : 66
Course 5 ID is : 88
   UPDATED SUCCESSFULLY.
```

9. Show all the information of the registered students.

```
please Enter your choice: 9

-----------------------------------------------

Student first name: mina_new
Student last name:  karam
Student roll number: 9
Student GPA number: 3.90
The courses IDs are: 10 22 55 66 88
-----------------------------------------------
```

10. Exit the software.