

Student Information System

Mastering Embedded System Online Diploma



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First Term (Final Project 2)

Learn in Depth

Objective

- Design a system that perform the following operations
 - Store student info
 - Add student details form file
 - Add student details manually
 - Find student by given roll number or given first name
 - Find students registered in course
 - Count student
 - Delete student
 - Update student

System Tui

```
Welcome to the Student Management System
-----
Choose the task that you want to perfrom
1- Add the student manually
2- Add the students from text file
3- Find the student by Roll Number
4- Find the student by First Name
5- Find the students by Course Id
6- Find the Total number of Students
7- Delete the Student by Roll Number
8- Update the Student details by Roll Number
9- show all information
10- Exit
```

System test cases

- First we make a test file to add students from it

```
src > ≡ data
1 1 ahmed ali 3.2 2 14 8
2 2 hany yasser 3.5 1 3
3 3 yara samir 3.3 3 3 2 1
4 4 mona samir 3.4 3 2 1 8
5 4 hisham yasser 3.3 2 5 3
6 5 sara ali 3 2 1 14
```

- Then we test system functionality as following

1) Add students from file

- Here all students are added except hisham which has same payroll as mona

```
Choose the task that you want to perform
1- Add the student manually
2- Add the students from text file
3- Find the student by Roll Number
4- Find the student by First Name
5- Find the students by Course Id
6- Find the Total number of Students
7- Delete the Student by Roll Number
8- Update the Student details by Roll Number
9- show all information
10- Exit
Enter your choice: 2
[SUCCESS] Student ahmed with payroll 1 is added successfully
[SUCCESS] Student hany with payroll 2 is added successfully
[SUCCESS] Student yara with payroll 3 is added successfully
[SUCCESS] Student mona with payroll 4 is added successfully
[ERROR] Roll Number 4 is already taken
[SUCCESS] Student sara with payroll 5 is added successfully
```

2) Add student manually

- Here we add hisham yasser manually

```
Choose the task that you want to perform
1- Add the student manually
2- Add the students from text file
3- Find the student by Roll Number
4- Find the student by First Name
5- Find the students by Course Id
6- Find the Total number of Students
7- Delete the Student by Roll Number
8- Update the Student details by Roll Number
9- show all information
10- Exit
Enter your choice: 1
Add the Student Details
-----
Enter the payroll of the student: 6
Enter the first name of the student: hisham
Enter the last name of the student: yasser
Enter the GPA grade of the student: 3.3
Enter the Number of courses Registered: 2
Enter the student courses id:
course id: 5
course id: 3
[SUCCESS] Student is added successfully
```

3) Find student by roll number

- Here we find hisham by it's roll number (6) to make sure it is added

```
Choose the task that you want to perfrom
1- Add the student manually
2- Add the students from text file
3- Find the student by Roll Number
4- Find the student by First Name
5- Find the students by Course Id
6- Find the Total number of Students
7- Delete the Student by Roll Number
8- Update the Student details by Roll Number
9- show all information
10- Exit
Enter your choice: 3
Enter the payroll of the student: 6
-----
payroll: 6
first name: hisham
last name: yasser
gpa: 3.300000
courses number: 2
courses id: 5 3
```

4) Find student by first name

- Here we find yara by it's first name

```
Choose the task that you want to perfrom
1- Add the student manually
2- Add the students from text file
3- Find the student by Roll Number
4- Find the student by First Name
5- Find the students by Course Id
6- Find the Total number of Students
7- Delete the Student by Roll Number
8- Update the Student details by Roll Number
9- show all information
10- Exit
Enter your choice: 4
Enter the first name of the student: yara
-----
payroll: 3
first name: yara
last name: samir
gpa: 3.300000
courses number: 3
courses id: 3 2 1
```

5) Find students by course id

- Here we find all the student that registered in course id 2

```
-----  
Choose the task that you want to perform  
1- Add the student manually  
2- Add the students from text file  
3- Find the student by Roll Number  
4- Find the student by First Name  
5- Find the students by Course Id  
6- Find the Total number of Students  
7- Delete the Student by Roll Number  
8- Update the Student details by Roll Number  
9- show all information  
10- Exit  
Enter your choice: 5  
Enter the Course ID: 2  
-----  
payroll: 3  
first name: yara  
last name: samir  
gpa: 3.300000  
courses number: 3  
courses id: 3 2 1  
-----  
payroll: 4  
first name: mona  
last name: samir  
gpa: 3.400000  
courses number: 3  
courses id: 2 1 8  
-----
```

6) Find the total number of students

- Here we have 6 students (5 from file + 1 added manually)

```
Choose the task that you want to perfrom
1- Add the student manually
2- Add the students from text file
3- Find the student by Roll Number
4- Find the student by First Name
5- Find the students by Course Id
6- Find the Total number of Students
7- Delete the Student by Roll Number
8- Update the Student details by Roll Number
9- show all information
10- Exit
Enter your choice: 6
[INFO] the number of students is: 6
```

7) Delete the student by roll number

- Here we delete hisham (roll number 6)
- Then check on total number of student to find it decreases by 1
- In show all information task we will find hisham not exists in student data

```
Choose the task that you want to perfrom
1- Add the student manually
2- Add the students from text file
3- Find the student by Roll Number
4- Find the student by First Name
5- Find the students by Course Id
6- Find the Total number of Students
7- Delete the Student by Roll Number
8- Update the Student details by Roll Number
9- show all information
10- Exit
Enter your choice: 7
Enter the payroll of the student: 6

Choose the task that you want to perfrom
1- Add the student manually
2- Add the students from text file
3- Find the student by Roll Number
4- Find the student by First Name
5- Find the students by Course Id
6- Find the Total number of Students
7- Delete the Student by Roll Number
8- Update the Student details by Roll Number
9- show all information
10- Exit
Enter your choice: 6
[INFO] the number of students is: 5
```

8) Update the student details by roll number

- Update the first name of ahmed (roll number 1) to be ayman

```
Choose the task that you want to perfrom
1- Add the student manually
2- Add the students from text file
3- Find the student by Roll Number
4- Find the student by First Name
5- Find the students by Course Id
6- Find the Total number of Students
7- Delete the Student by Roll Number
8- Update the Student details by Roll Number
9- show all information
10- Exit
Enter your choice: 8
Enter the Info you want to update:
1- First name
2- Last name
3- PayRoll
4- GPA
5- Courses
1
Enter the payroll of the student: 1
Enter the student new first name: ayman
-----
```

9) Show all information

- Here we print all the students info

```
Choose the task that you want to perfrom
1- Add the student manually
2- Add the students from text file
3- Find the student by Roll Number
4- Find the student by First Name
5- Find the students by Course Id
6- Find the Total number of Students
7- Delete the Student by Roll Number
8- Update the Student details by Roll Number
9- show all information
10- Exit
Enter your choice: 9
-----
```

- Here we find that ahmed (roll number 1) first name's changed to ayman
- We find also that hisham is removed

```
-----  
the student payroll: 1  
the student first name: ayman  
the student last name: ali  
the student gpa: 3.200000  
the student courses number: 2  
the student courses id:  
    course id 14  
    course id 8  
-----  
the student payroll: 2  
the student first name: hany  
the student last name: yasser  
the student gpa: 3.500000  
the student courses number: 1  
the student courses id:  
    course id 3  
-----  
the student payroll: 3  
the student first name: yara  
the student last name: samir  
the student gpa: 3.300000  
the student courses number: 3  
the student courses id:  
    course id 3  
    course id 2  
    course id 1  
-----  
the student payroll: 4  
the student first name: mona  
the student last name: samir  
the student gpa: 3.400000  
the student courses number: 3  
the student courses id:  
    course id 2  
    course id 1  
    course id 8  
-----  
the student payroll: 5  
the student first name: sara  
the student last name: ali  
the student gpa: 3.000000  
the student courses number: 2  
the student courses id:  
    course id 1  
    course id 14  
-----
```


10) Here program exit

```
-----  
Choose the task that you want to perfrom  
1- Add the student manually  
2- Add the students from text file  
3- Find the student by Roll Number  
4- Find the student by First Name  
5- Find the students by Course Id  
6- Find the Total number of Students  
7- Delete the Student by Roll Number  
8- Update the Student details by Roll Number  
9- show all information  
10- Exit  
Enter your choice: 10
```