

Student Department Management System

Using DAO + Singleton Design Pattern

Database Tables

<input type="checkbox"/>	department_id	department_name
*	(Auto)	(NULL)

student_id	student_name	student_department
(Auto)	(NULL)	(NULL)

Welcome Screen

***** MENU *****

1. Manage Students
2. Manage Departments
3. Exit

Enter:

➔ Manage Departments

***** MANAGE Department *****

1. Add
2. Update
3. Delete
4. Search
5. View All
6. Back

Enter:

1. Add Department

***** ADD NEW DEPARTMENT *****

-Enter Department ID: 100

-Enter Department Name: Software

Department added successfully!

Adding some departments

department_id	department_name
100	Software

Computer Systems:

```

***** ADD NEW DEPARTMENT *****

-Enter Department ID: 101
-Enter Department Name: Computer Systems
Department added successfully!
.....

```

Electronics:

```

***** ADD NEW DEPARTMENT *****

-Enter Department ID: 102
-Enter Department Name: Electronics
Department added successfully!

```

Civil:

```

***** ADD NEW DEPARTMENT *****

-Enter Department ID: 103
-Enter Department Name: Civil
Department added successfully!

```

Mechanical:

```

***** ADD NEW DEPARTMENT *****

-Enter Department ID: 104
-Enter Department Name: Mechanical
Department added successfully!

```

Departments are successfully added in the database.

department_id	department_name
100	Software
101	Computer Systems
102	Electronics
103	Civil
104	Mechanical
(Auto)	(NULL)

2. Update Department

```

***** UPDATE Department *****

-Enter Department No: 104
-Enter Department's New Name: Mechatronics
Department Updated successfully!

```

Updating mechanical to mechatronics

result:

department_id	department_name
100	Software
101	Computer Systems
102	Electronics
103	Civil
104	Mechatronics

3. Delete Department

```
***** DELETE Department *****
-Enter Department No: 104
Department Deleted Successfully!
```

Deleting department mechatronics

result:

department_id	department_name
100	Software
101	Computer Systems
102	Electronics
103	Civil
(Auto)	(NULL)

4. Search Department

```
***** SEARCH DEPARTMENT *****
-Enter Department No: 100
Roll No    = 100
Name       = Software
```

5. View All Departments

```
***** ALL DEPARTMENT *****
Department NO    Department NAME
100             Software
101             Computer Systems
102             Electronics
103             Civil
```

➔ Manage Students

```
***** MANAGE STUDENT *****
1. Add
2. Update
3. Delete
4. Search
5. View All
6. Back
Enter:
```

1. Add Student

```
***** ADD NEW STUDENT *****
-Enter Student Roll No: 45
-Enter Student Name: Turab
-Enter Student Department No: 100
Student added successfully!
***** MANAGE STUDENT *****
```

result:

student_id	student_name	student_department
45	Turab	100

Adding more student

Danish

```
***** ADD NEW STUDENT *****
-Enter Student Roll No: 59
-Enter Student Name: Danish Azeem
-Enter Student Department No: 101
Student added successfully!
```

Naresh

```
***** ADD NEW STUDENT *****
-Enter Student Roll No: 47
-Enter Student Name: Naresh Kumar
-Enter Student Department No: 102
Student added successfully!
```

Ayoob

```
***** ADD NEW STUDENT *****
-Enter Student Roll No: 85
-Enter Student Name: Ayoob Bugti
-Enter Student Department No: 103
Student added successfully!
.....
```

Mirza Arslan

```
***** ADD NEW STUDENT *****
-Enter Student Roll No: 57
-Enter Student Name: Mirza Arslan
-Enter Student Department No: 100
Student added successfully!
.....
```

Jatender

```
***** ADD NEW STUDENT *****
-Enter Student Roll No: 48
-Enter Student Name: Jatender
-Enter Student Department No: 101
Student added successfully!
```

Let's view all students

```
-
***** SEARCH STUDENT *****
ROLL NO      NAME      DEPARTMENT
45           Turab      Software
57           Mirza Arslan    Software
48           Jatender      Computer Systems
59           Danish Azeem    Computer Systems
47           Naresh Kumar    Electronics
85           Ayoob Bugti      Civil
```

2. Update Student

```
***** UPDATE STUDENT *****
-Enter Student Roll No: 48
-Enter Student's New Name: Jatender Khatri
Student Updated Successfully!
```

result

student_id	student_name	student_department
45	Turab	100
47	Naresh Kumar	102
48	Jatender Khatri	101
57	Mirza Arslan	100
59	Danish Azeem	101
85	Ayoub Bugti	103
{Auto}	{NULL}	{NULL}

3. Delete Student

```
***** DELETE STUDENT *****
-Enter Student Roll No: 45
Deleted Successfully!
```

result

student_id	student_name	student_department
47	Naresh Kumar	102
48	Jatender Khatri	101
57	Mirza Arslan	100
59	Danish Azeem	101
85	Ayoub Bugti	103
{Auto}	{NULL}	{NULL}

4. Search Student

1. Searching non-existing student

```
-
***** SEARCH STUDENT *****
-Enter Student Roll No: 45
Student Not Found!
```

2. Searching an existing student

```
-
***** SEARCH STUDENT *****
-Enter Student Roll No: 59
Roll No    = 59
Name       = Danish Azeem
Department = Computer Systems
```

5. View All Student

```
***** SEARCH STUDENT *****
ROLL NO    NAME                DEPARTMENT
57         Mirza Arslan         Software
48         Jatender Khatri      Computer Systems
59         Danish Azeem         Computer Systems
47         Naresh Kumar          Electronics
85         Ayoub Bugti           Civil
.....
```