University Student Database Project

Project Title: University Student Database using MySQL

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Introduction

This project focuses on designing and implementing a University Student Database using MySQL.The purpose of this database is to efficiently store and manage student and department information in a structured manner.

Objectives

- To understand relational database design

- To implement primary and foreign keys

- To create relationships between tables

- To perform SQL queries for data retrieval

Tools and Technologies:

- MySQL Server

- MySQL Workbench

- GitHub

Database Design

Tables:

Departments

Students

Keys:

primary Key: DeptID, StudentID

Foreign Key: DeptID in Students table

SQL Implementation

- Database creation

- Table creation

- Primary and Foreign keys
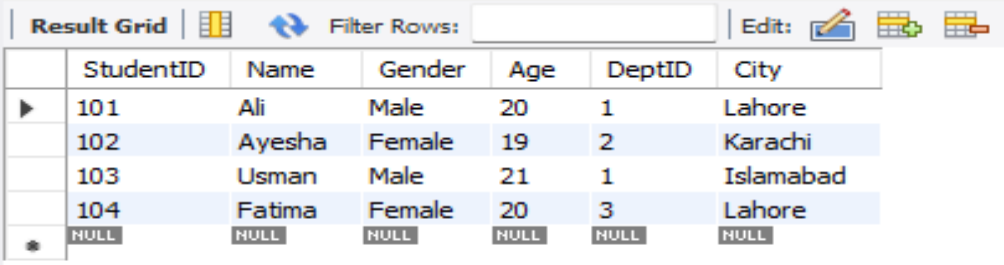
- Sample data insertion

SQL Queries

- SELECT

- WHERE

- JOIN

- COUNT

Results and Output

some outputs with queries

```
33        (3, 'Software Testing', 3);
34 ●    SELECT * FROM Students;
35        |
```

StudentID	Name	Gender	Age	DeptID	City
101	Ali	Male	20	1	Lahore
102	Ayesha	Female	19	2	Karachi
103	Usman	Male	21	1	Islamabad
104	Fatima	Female	20	3	Lahore
NULL	NULL	NULL	NULL	NULL	NULL

Students 6 ✕

```
45      WHERE DeptID = 1;
46 ●  SELECT COUNT(*) AS TotalStudents FROM Students;
47
```

TotalStudents
4

```
44 •    SELECT Name FROM Students
45      WHERE DeptID = 1;
46 •    SELECT COUNT(*) AS TotalStudents FROM Students;
47 •    SELECT DeptID, COUNT(*) AS Total
48      FROM Students
49      GROUP BY DeptID;
50      |
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: ‡A

DeptID	Total
1	2
2	1
3	1

```
40 •    SELECT * FROM Students
41      WHERE City = 'Lahore';
42      |
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap C

StudentID	Name	Gender	Age	DeptID	City
101	Ali	Male	20	1	Lahore
104	Fatima	Female	20	3	Lahore
NULL	NULL	NULL	NULL	NULL	NULL

```
35 •    SELECT s.Name, d.DeptName
36      FROM Students s
37      JOIN Departments d ON s.DeptID = d.DeptID;
38 •    SELECT * FROM Students
39      WHERE Gender = 'Female';
40      |
```

Result Grid | Filter Rows: | Edit: | Exp

StudentID	Name	Gender	Age	DeptID	City
102	Ayesha	Female	19	2	Karachi
104	Fatima	Female	20	3	Lahore
NULL	NULL	NULL	NULL	NULL	NULL

Conclusion

This project helped in understanding the fundamentals of relational databases, including table relationships, data integrity, and SQL query execution using MySQL.

The complete project including SQL scripts and documentation is available on GitHub.

(https://github.com/wakeelkhan62/University-Student-Database**)**