Aim : Introduction and demonstration of Database Languages, constraints and in-built functions.

Objectives :

- Understand how to create, modify, and delete the structure of our database.
- Understand how to control access to our data through grant and revoke permission .

Tools Used: MySQL Workbench

Concept :

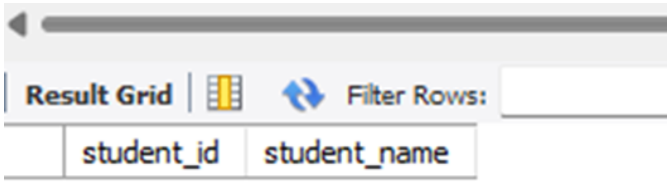
1. **DDL (Data Definition Language):**
    - *Create* - This command is used to create new database objects like tables.
    - *Drop* - It's used to delete existing database objects such as tables.
    - *Alter* - Allows you to modify the structure of an existing table.
    - *Truncate* - Used to remove all data from a table
2. **DML (Data Manipulation Language):**
    - *Insert* - Adds new rows of data to a table.
    - *Update* - Modifies existing data in a table.;
    - *Delete* - Removes rows from a table based on specified conditions.
3. **DCL (Data Control Language):**
    - *Grant* - Grants specific permissions to users on database objects.
    - *Revoke* - Removes previously granted permissions.
4. **TCL (Transaction Control Language):**
    - *Commit* - Saves changes made by a transaction.
    - *Rollback* - Undoes changes made by the current transaction.
5. **DQL (Data Query Language):**
    - *Select* - Retrieves data from a database table.

Problem Statement:

Create following student table in MySQL
student (student_id int, student_name varchar(20))CREATE DATABASE studentdatabase;

CREATE TABLE students(student_id int, student_name varchar(20)); Solution

Solution :



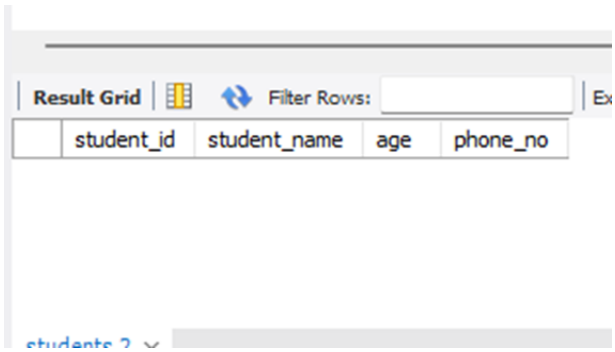
Problem Statement:

Add two more columns in student table namely (age int,phone_no int)ALTER TABLE

students ADD column age int;

ALTER TABLE students ADD column phone_no int;

Solution :

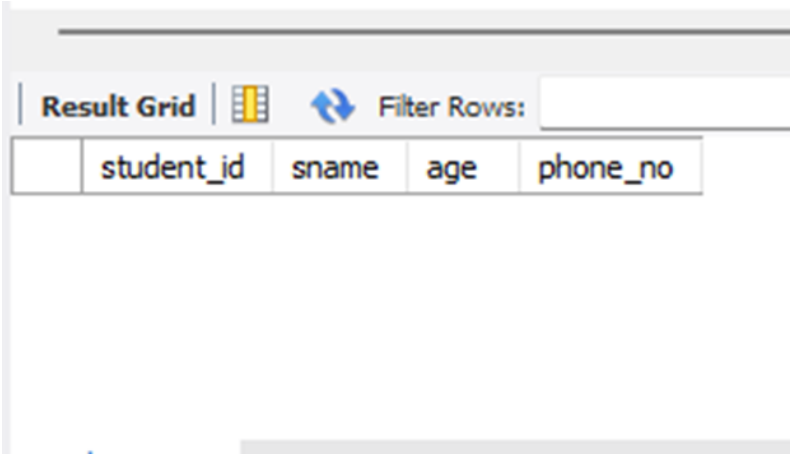


Problem Statement:

Rename the column name student_name with sname

ALTER TABLE students RENAME column student_name to sname;

Solution :

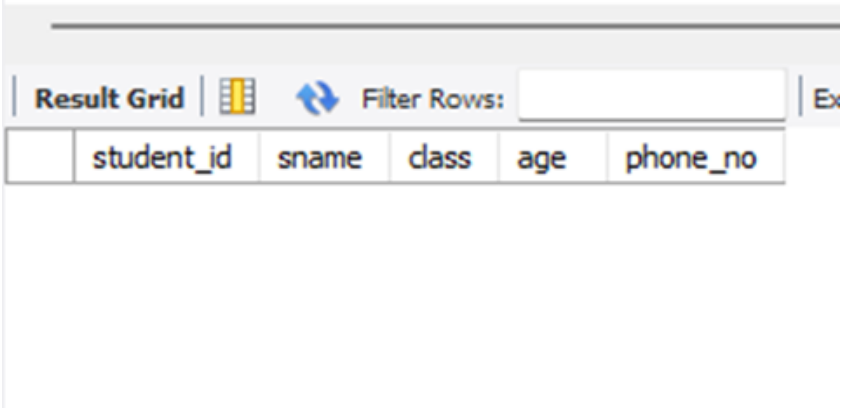


Problem Statement:

Add the column (class varchar(20)) after sname

ALTER TABLE students ADD column class varchar(20) after sname;

Solution :

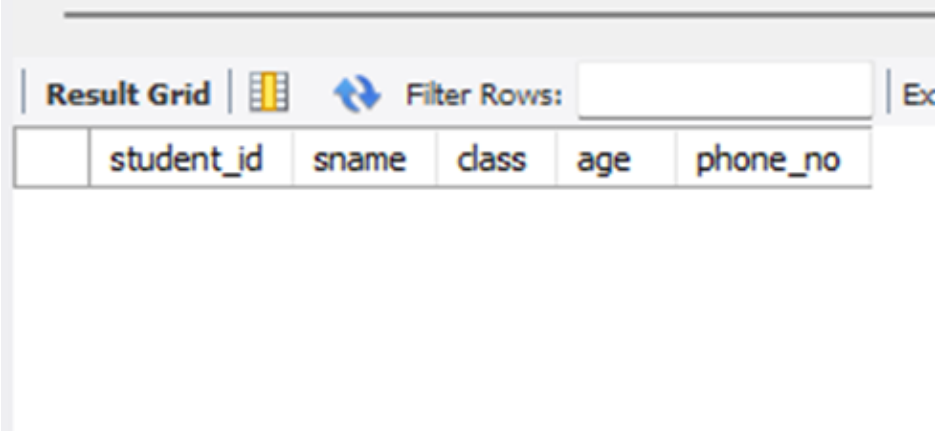


Problem Statement:

Rename the datatype of sname to varchar(30)

ALTER TABLE students MODIFY column sname varchar(30);

Solution :



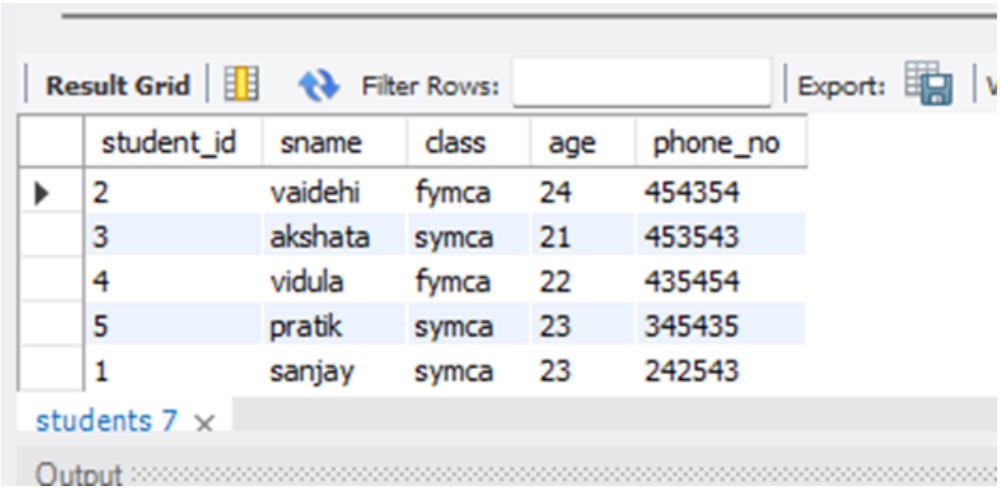
Problem Statement:

Insert following values in the table

student_id	sname	Class	age	phone_no
1	Sanjay	Symca	23	242543
2	Vaidehi	Fymca	24	454354
3	Akshata	Symca	21	543543
4	Vidula	Fymca	22	435454
5	Pratik	Symca	23	345435

Solution :

INSERT INTO students value(1,'sanjay' ,'symca' ,23 , 242543);
INSERT INTO students value (2 ,'vaidehi','fymca', 24, 454354),(3,'akshata','symca',21,453543),(4, 'vidula', 'fymca' ,22, 435454),(5, 'pratik', 'symca', 23,345435);



Result Grid | Filter Rows: | Export:

student_id	sname	class	age	phone_no
2	vaidehi	fymca	24	454354
3	akshata	symca	21	453543
4	vidula	fymca	22	435454
5	pratik	symca	23	345435
1	sanjay	symca	23	242543

students 7 ×

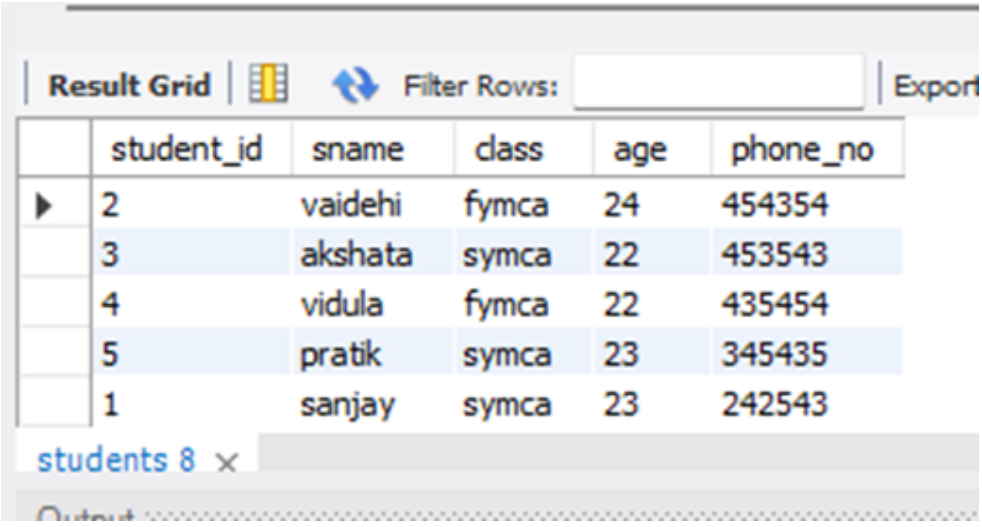
Output

Problem Statement:

Modify the age of Akshata to 22

Solution :

UPDATE students set age='22' WHERE sname='akshata' ;



Result Grid | Filter Rows: | Export

student_id	sname	class	age	phone_no
2	vaidehi	fymca	24	454354
3	akshata	symca	22	453543
4	vidula	fymca	22	435454
5	pratik	symca	23	345435
1	sanjay	symca	23	242543

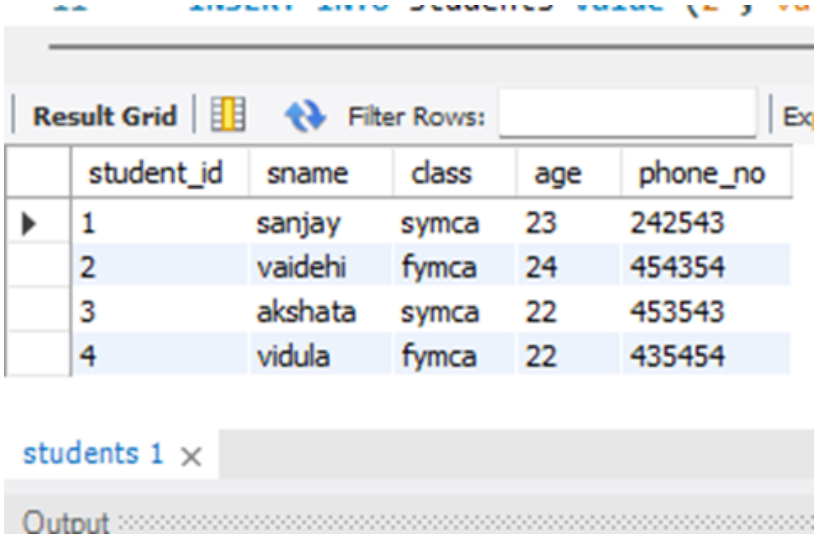
students 8 ×

Problem Statement:

Delete the record of Pratik

Solution :

DELETE FROM students WHERE sname='pratik';



Result Grid | Filter Rows:

student_id	sname	class	age	phone_no
1	sanjay	symca	23	242543
2	vaidehi	fymca	24	454354
3	akshata	symca	22	453543
4	vidula	fymca	22	435454

students 1

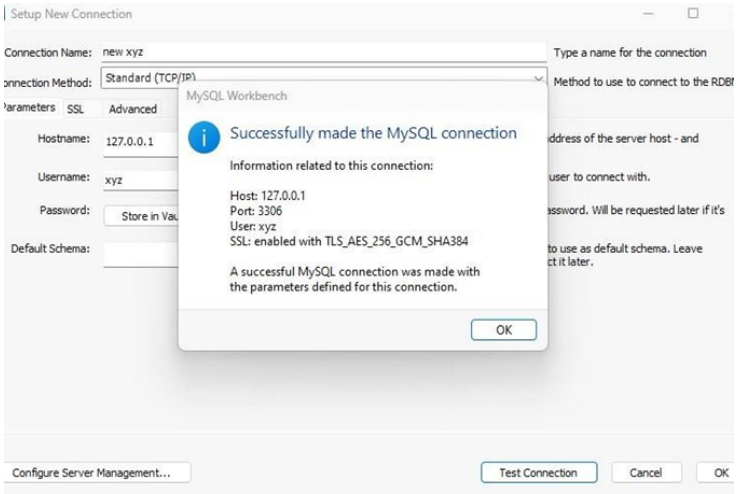
Output

Problem Statement:

Create one user XYZ and give him a permission to make the changes in the abovetable.CREATE USER 'xyz'@'localhost' IDENTIFIED BY 'root' ;

GRANT UPDATE ON students TO 'xyz'@'localhost';

Solution :

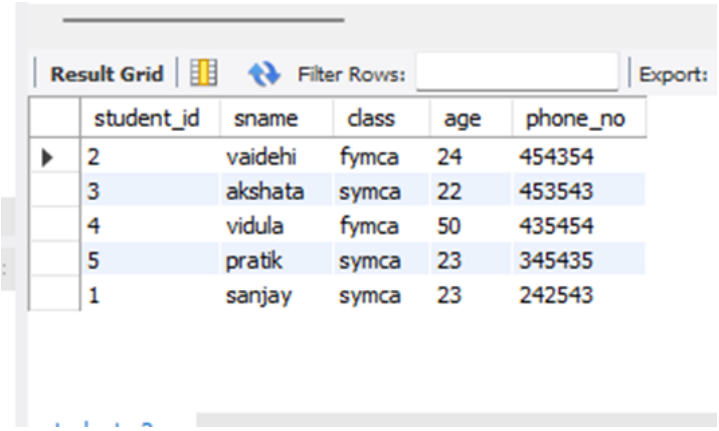


Problem Statement:

Login to XYZ and make sure he is able to make the changes in student tablecreatedby Root user.

Solution :

UPDATE students set age=50 where sname='vidula';



student_id	sname	class	age	phone_no
2	vaidehi	fymca	24	454354
3	akshata	symca	22	453543
4	vidula	fymca	50	435454
5	pratik	symca	23	345435
1	sanjay	symca	23	242543

Observation:

Based on this experiment, I understand how to use basic SQL language queries including creating a table , inserting value in it , update the table , alter table values , delete the table values and lastly how to create new users in mysql and how to assign them a permission .