ANSI «
Sequel / eS Queue eL

Oracle → Oracle

Microsoft → MS Access, MS SQL Server

NCR → Teradata

IBM → DB2

Sun Microsystems → Sun Solaris, OpenOffice, Java, MySQL → MariaDB, Percona

MySQL Workbench

Apache, MySQL, PHP

AMP Stack

Linux	L
Windows	W
Mac	M

XAMP

SQL

- DDL
- DML
- DCL

DDL → Data Definition language
plays with the structure of Data
- → Create
- → Use
- → Drop
- → Alter

DML → Data Manuplation Language
plays with data in the database

DCL → Data Control Language
plays with the database management
- → Backup & Recovery
- → Transactions
- → Checkpoints
- → Access Control
- → User Mgmt

Datatypes in SQL

- Numeric
  - Integer
    - TINYINT → 0 - 127
    - SMALLINT → ± 32767
    - INT → 4 byte ± 4 Billion
    - LONG → 8 byte ± 2^{64}
  - Decimal
    - FLOAT
    - DOUBLE

TINYINT(1)

INT(5)

Double(5,3)

- Text/String
  - Fixed → CHAR(5)
  - Variable Length → VARCHAR(20)

- Bool

- Date/Time/DateTime

- Binary → BLOB
  - TINYBLOB → 256 Bytes
  - SMALLBLOB → 65 KB
  - BLOB → 4MB
  - LARGEBLOB → 2 GB
  - HUGEBLOB → ~ TB

```
-- which databases are available
show databases;

-- create a new database
create database dbd11;

-- how to delete a database
drop database dbd11;

-- all future commands hsould be executed against dbd11
use dbd11;

-- whcih tabels are available
show tables;
SHOW DATABaSeS;          -- sql is not case sensitive

-- add a new table in the db
Create table Student
(
        sid INT(5),
    sName VARCHAR(20),
    gpa FLOAT(3,2),
    sex CHAR(1)
 );

-- whats is the structure of table
describe Student;

-- discard the table and the data in the table
DROP table Student;
CREATE Table Student
(
        sid INT(5) NOT NULL UNIQUE,
    fName varchar(10),
    lName varchar(10),
    dob DATE,
    phone CHAR(11),
    gpa float(3,2) NOT NULL,
    Sex CHAR(1) DEFAULT 'M',
    PRIMARY KEY(SID)
);
```

```
-- Adding Data in the Table
Insert into Student VALUES(1, 'Ali', 'Ahmad', NULL, '12345678901',
3.33, NULL);

-- Show the data in the table
Select * from Student;


-- Add data in Sepcific Columns and different ordser
Insert Into Student (SID, lName, fName, Phone, GPA, DOB) VALUES
                        (2, 'Saleem', 'Farooq', '98765432101', 3.67, '2000-07-18');

-- Adding multiple data
Insert Into Student (SID, lName, fName, Phone, GPA, DOB, Sex) VALUES
                        (3, 'Ali', 'Fatima', '98765432101', 3.67, '2000-07-18', 'F'),
            (4, 'Hakeem', 'Abdul', '96385274109', 3.0, '2001-01-18', 'M'),
            (5, 'Shakir', 'Parveen', '96385274109', 3.0, '2001-01-18', 'F');
```

7th Edition

Structure → pg 164
Data → pg 162
Help → pg 181

} Assign 1 part 1 Submission Wednesday 26th Apr 10:00 AM

```
select * from student where sex = 'F' AND sid < 4;
```

```
SELECT * FROM Customers;

SELECT * FROM Customers where COUNTRY = 'Germany';

SELECT * FROM Customers where COUNTRY = 'Germany' OR Country = 'France';

SELECT * FROM Products where Price = 20;

SELECT * FROM Orders where OrderDate = '1996-07-08';

SELECT * FROM Products where Price <= 18;

SELECT * FROM Products where Price >= 18 and Price <= 22;

SELECT * FROM Customers where Country = 'France' AND City = 'Paris';

SELECT * FROM Customers where Country != 'France';

SELECT * FROM Customers where Country <> 'Germany';

select * from Products where (price > 15 and price < 22)
                        or (supplierid <= 10 and supplierid > 5)


select CustomerID, CustomerName, City, Country from Customers;


select CustomerID, CustomerName, City, Country from Customers where Country = 'Germany'


select  Country, CustomerID, CustomerName from Customers where
                        Country = 'France' and City = 'Paris';

select  City , Country from Customers;

select  distinct City , Country from Customers;


select  CustomerID, ContactName as President, City, Country from Customers

Select * from Customers where Country > 'Sweden'

Select * from Customers where Country = 'France'
                        OR Country = 'Germany' OR country = 'Sweden';

Select * from Customers where Country IN ('France','Germany', 'Sweden');

Select * from Customers where Country NOT IN ('France','Germany', 'Sweden');
```

```
Select * from Products where price >= 10 AND price <= 15

Select * from Products where price BETWEEN 10 AND 15;

Select * from Products where price < 10 OR price > 15;

Select * from Products where price NOT BETWEEN 10 AND 15;


 Wildcards
 %       any 0 or more length string
 _       exactly 1 character

 Show customers whose name start with L
 Select * from Customers where ContactName LIKE 'L%';

 Show customers whose 2nd name start with L
 Select * from Customers where ContactName LIKE '% L%';

 Name end with n
 Select * from Customers where ContactName LIKE '%n';

 2nd laster letter is o
 Select * from Customers where ContactName LIKE '%o_';

 name contains 2 n
 Select * from Customers where ContactName LIKE '%n%n%';

 Select * from Customers where ContactName NOT LIKE '%n%n%';
```

```
Select * from Customers where Country IS NULL

Select * from Customers where Country IS NOT NULL
```

Find the ids of the Employees whose name start with 'J'

```
Select ssn from Employee where Fname LIKE 'J%';
```

```
    SSN
-------------
123456789
987654321
453453453
888665555
```

Find the ids of the Employees who have a male Dependent

```
Select ESSN from Dependent where Sex = 'M';
```

```
    ESSN
-------------
333445555
987654321
123456789
```

Find the Ids of the Employees whose name start with J or thay have a male dependent

```
Select ssn from Employee where Fname LIKE 'J%'
```

UNION

```
Select ESSN from Dependent where Sex = 'M';
```

```
    SSN
-----------
123456789
987654321
453453453
888665555
333445555
```

Union Compatibility

1. No of Columns/Attributes in the sets should be same
2. Corrosponding pairs of colums/attributes should have same datatype / domain

Find the Ids of the Employees whose name start with J
and thay also have a male dependent

```
Select ssn from Employee where Fname LIKE 'J%'
```

INTERSECT

```
Select ESSN from Dependent where Sex = 'M';
```

MY SQL

```
Select ssn from Employee where Fname LIKE 'J%'
        AND SSN IN (Select ESSN from Dependent where Sex = 'M');
```

Find the Ids of the Employees whose name start with J
but thay do not have a male dependent

```
Select ssn from Employee where Fname LIKE 'J%'
```

EXCEPT

```
Select ESSN from Dependent where Sex = 'M';
```

MY SQL

```
Select ssn from Employee where Fname LIKE 'J%'
        AND SSN NOT IN (Select ESSN from Dependent where Sex = 'M');
```