

## QUERYING DATA FROM A TABLE

**SELECT c1, c2 FROM t;**

Query data in columns c1, c2 from a table

**SELECT \* FROM t;**

Query all rows and columns from a table

**SELECT c1, c2 FROM t**

**WHERE condition;**

Query data and filter rows with a condition

**SELECT DISTINCT c1 FROM t**

**WHERE condition;**

Query distinct rows from a table

**SELECT c1, c2 FROM t**

**ORDER BY c1 ASC [DESC];**

Sort the result set in ascending or descending order

**SELECT c1, c2 FROM t**

**ORDER BY c1**

**LIMIT n OFFSET offset;**

Skip *offset* of rows and return the next *n* rows

**SELECT c1, aggregate(c2)**

**FROM t**

**GROUP BY c1;**

Group rows using an aggregate function

**SELECT c1, aggregate(c2)**

**FROM t**

**GROUP BY c1**

**HAVING condition;**

Filter groups using HAVING clause

## QUERYING FROM MULTIPLE TABLES

**SELECT c1, c2**

**FROM t1**

**INNER JOIN t2 ON condition;**

Inner join t1 and t2

**SELECT c1, c2**

**FROM t1**

**LEFT JOIN t2 ON condition;**

Left join t1 and t1

**SELECT c1, c2**

**FROM t1**

**RIGHT JOIN t2 ON condition;**

Right join t1 and t2

**SELECT c1, c2**

**FROM t1**

**FULL OUTER JOIN t2 ON condition;**

Perform full outer join

**SELECT c1, c2**

**FROM t1**

**CROSS JOIN t2;**

Produce a Cartesian product of rows in tables

**SELECT c1, c2**

**FROM t1, t2;**

Another way to perform cross join

**SELECT c1, c2**

**FROM t1 A**

**INNER JOIN t2 B ON condition;**

Join t1 to itself using INNER JOIN clause

## USING SQL OPERATORS

**SELECT c1, c2 FROM t1**

**UNION [ALL]**

**SELECT c1, c2 FROM t2;**

Combine rows from two queries

**SELECT c1, c2 FROM t1**

**INTERSECT**

**SELECT c1, c2 FROM t2;**

Return the intersection of two queries

**SELECT c1, c2 FROM t1**

**MINUS**

**SELECT c1, c2 FROM t2;**

Subtract a result set from another result set

**SELECT c1, c2 FROM t1**

**WHERE c1 [NOT] LIKE pattern;**

Query rows using pattern matching %, \_

**SELECT c1, c2 FROM t**

**WHERE c1 [NOT] IN value\_list;**

Query rows in a list

**SELECT c1, c2 FROM t**

**WHERE c1 BETWEEN low AND high;**

Query rows between two values

**SELECT c1, c2 FROM t**

**WHERE c1 IS [NOT] NULL;**

Check if values in a table is NULL or not

## MANAGING VIEWS

```
CREATE VIEW v(c1,c2)
AS
SELECT c1, c2
FROM t;
```

Create a new view that consists of c1 and c2

```
CREATE VIEW v(c1,c2)
AS
SELECT c1, c2
FROM t;
WITH [CASCADED | LOCAL] CHECK OPTION;
```

Create a new view with check option

```
CREATE RECURSIVE VIEW v
AS
select-statement -- anchor part
UNION [ALL]
select-statement; -- recursive part
```

Create a recursive view

```
CREATE TEMPORARY VIEW v
AS
SELECT c1, c2
FROM t;
```

Create a temporary view

```
DROP VIEW view_name;
```

Delete a view

## MANAGING INDEXES

```
CREATE INDEX idx_name
ON t(c1,c2);
```

Create an index on c1 and c2 of the table t

```
CREATE UNIQUE INDEX idx_name
ON t(c3,c4);
```

Create a unique index on c3, c4 of the table t

```
DROP INDEX idx_name;
```

Drop an index

## SQL AGGREGATE FUNCTIONS

**AVG** returns the average of a list

**COUNT** returns the number of elements of a list

**SUM** returns the total of a list

**MAX** returns the maximum value in a list

**MIN** returns the minimum value in a list

## MANAGING TRIGGERS

```
CREATE OR MODIFY TRIGGER trigger_name
WHEN EVENT
ON table_name TRIGGER_TYPE
EXECUTE stored_procedure;
```

Create or modify a trigger

### WHEN

- **BEFORE** – invoke before the event occurs
- **AFTER** – invoke after the event occurs

### EVENT

- **INSERT** – invoke for INSERT
- **UPDATE** – invoke for UPDATE
- **DELETE** – invoke for DELETE

### TRIGGER\_TYPE

- **FOR EACH ROW**
- **FOR EACH STATEMENT**

```
CREATE TRIGGER before_insert_person
BEFORE INSERT
ON person FOR EACH ROW
EXECUTE stored_procedure;
```

Create a trigger invoked before a new row is inserted into the person table

```
DROP TRIGGER trigger_name;
```

Delete a specific trigger