SQL Cheat Sheet

The SQL cheat sheet provides you with the most commonly used SQL statements for your reference. You can download the SQL cheat sheet as follows:

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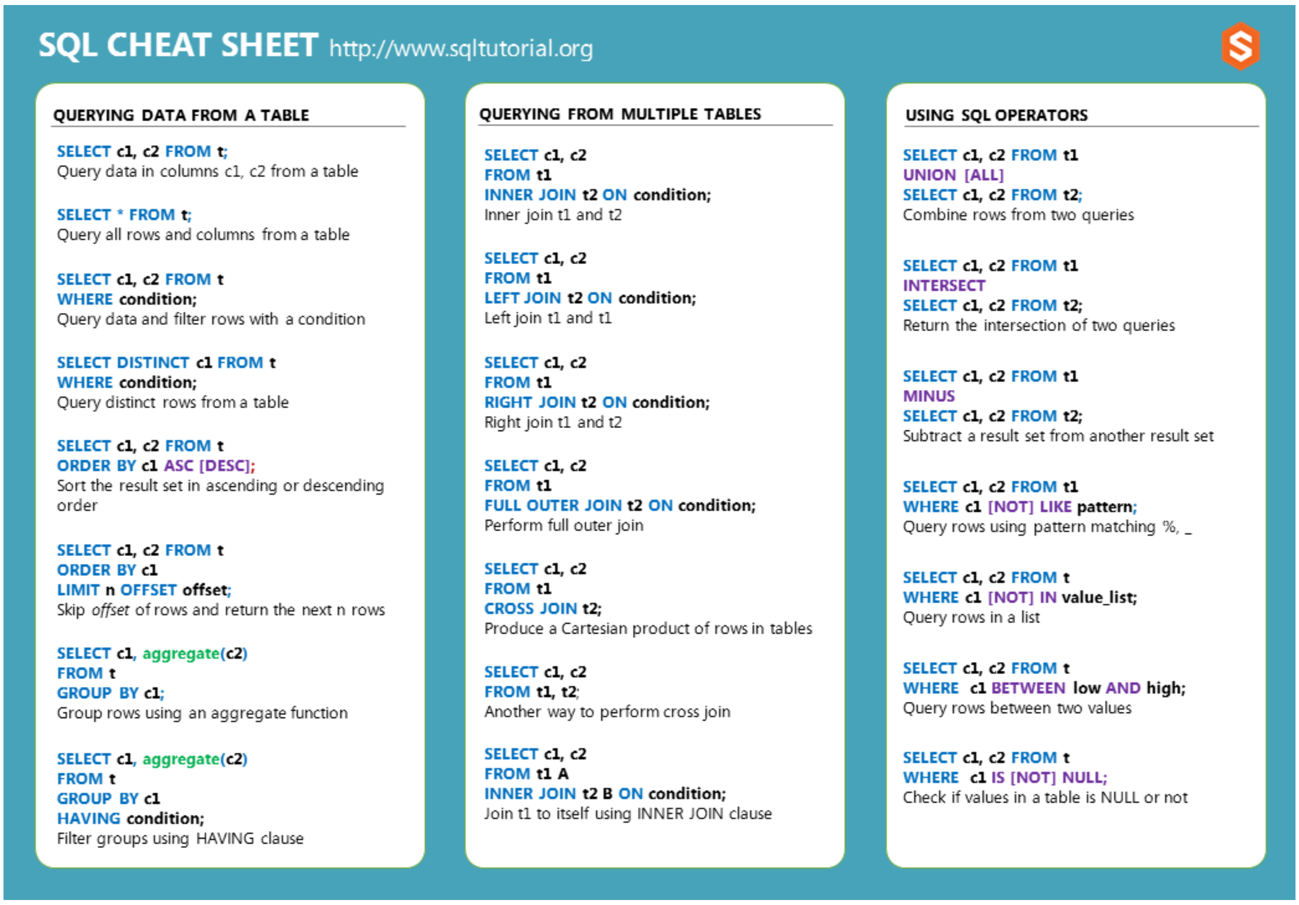


SQL CHEAT SHEET http://www.sqltutorial.org

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

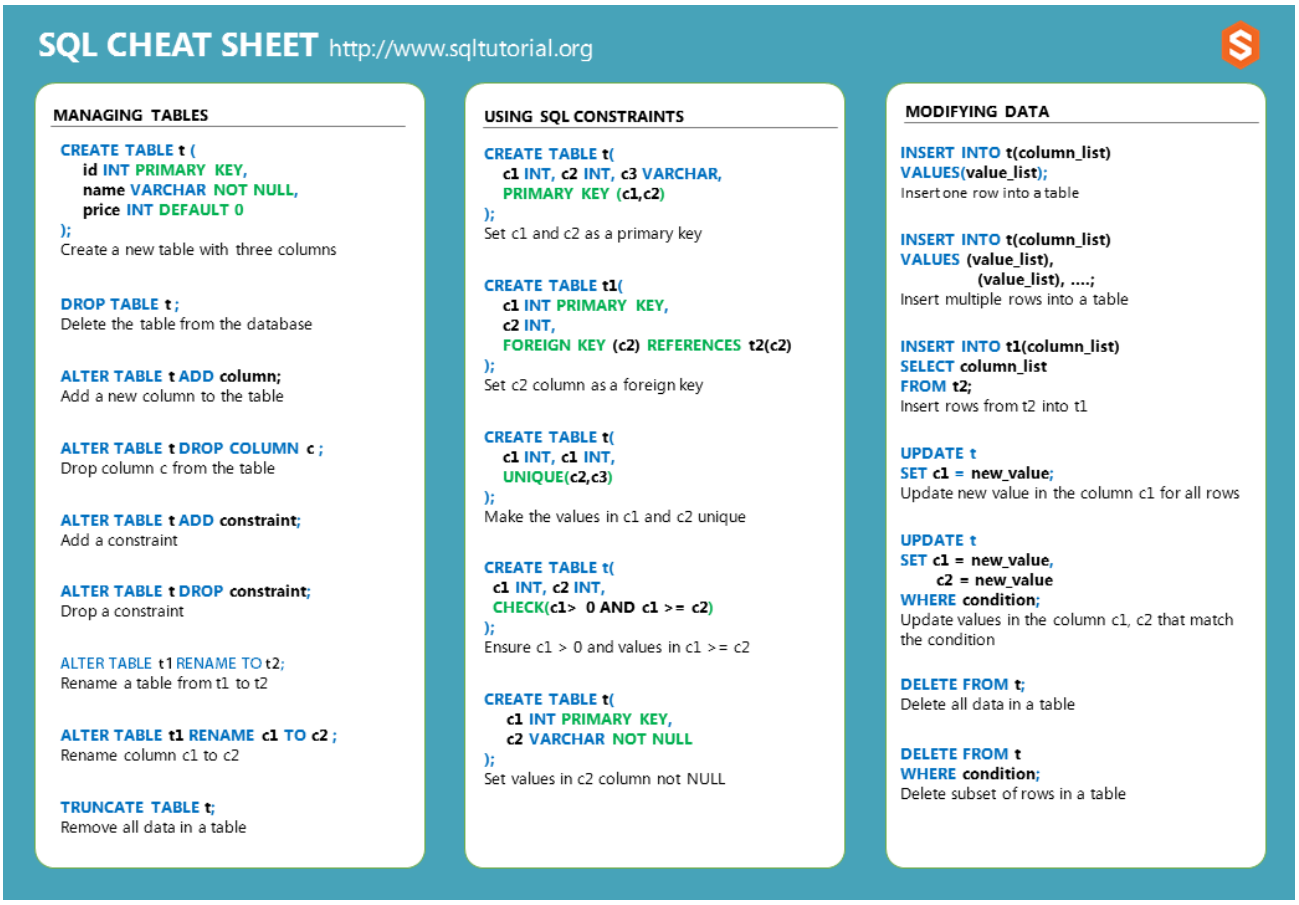
```
SELECT c1, c2 FROM t1
MINUS
SELECT c1, c2 FROM t2;
```
Subtract a result set from another result set

```
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



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MANAGING TABLES

```
CREATE TABLE t (
    id INT PRIMARY KEY,
    name VARCHAR NOT NULL,
    price INT DEFAULT 0
);
```
Create a new table with three columns

```
DROP TABLE t ;
```
Delete the table from the database

```
ALTER TABLE t ADD column;
```
Add a new column to the table

```
ALTER TABLE t DROP COLUMN c ;
```
Drop column c from the table

```
ALTER TABLE t ADD constraint;
```
Add a constraint

```
ALTER TABLE t DROP constraint;
```
Drop a constraint

```
ALTER TABLE t1 RENAME TO t2;
```
Rename a table from t1 to t2

```
ALTER TABLE t1 RENAME c1 TO c2 ;
```
Rename column c1 to c2

```
TRUNCATE TABLE t;
```
Remove all data in a table

USING SQL CONSTRAINTS

```
CREATE TABLE t(
   c1 INT, c2 INT, c3 VARCHAR,
   PRIMARY KEY (c1,c2)
);
```
Set c1 and c2 as a primary key

```
CREATE TABLE t1(
   c1 INT PRIMARY KEY,
   c2 INT,
   FOREIGN KEY (c2) REFERENCES t2(c2)
);
```
Set c2 column as a foreign key

```
CREATE TABLE t(
   c1 INT, c1 INT,
   UNIQUE(c2,c3)
);
```
Make the values in c1 and c2 unique

```
CREATE TABLE t(
  c1 INT, c2 INT,
  CHECK(c1> 0 AND c1 >= c2)
);
```
Ensure c1 > 0 and values in c1 >= c2

```
CREATE TABLE t(
    c1 INT PRIMARY KEY,
    c2 VARCHAR NOT NULL
);
```
Set values in c2 column not NULL

MODIFYING DATA

```
INSERT INTO t(column_list)
VALUES(value_list);
```
Insert one row into a table

```
INSERT INTO t(column_list)
VALUES (value_list),
            (value_list), ….;
```
Insert multiple rows into a table

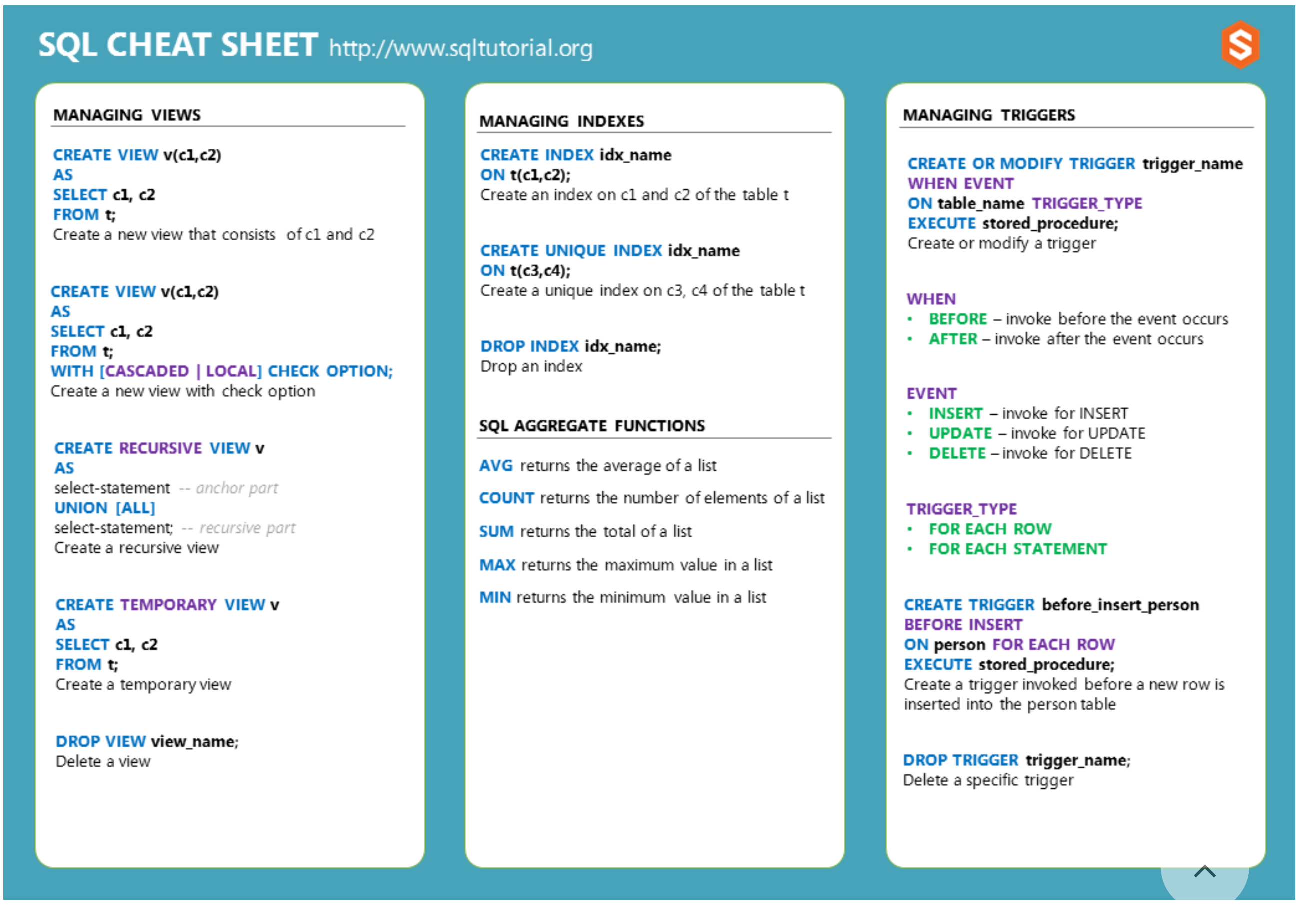
```
INSERT INTO t1(column_list)
SELECT column_list
FROM t2;
```
Insert rows from t2 into t1

```
UPDATE t
SET c1 = new_value;
```
Update new value in the column c1 for all rows

```
UPDATE t
SET c1 = new_value,
      c2 = new_value
WHERE condition;
```
Update values in the column c1, c2 that match the condition

```
DELETE FROM t;
```
Delete all data in a table

```
DELETE FROM t
WHERE condition;
```
Delete subset of rows in a table



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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

Querying data **from a table**

Query data in columns c1, c2 from a table

```
SELECT c1, c2 FROM t;
```

Query all rows and columns from a table

```
SELECT * FROM t;
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Query data and filter rows with a condition

```
SELECT c1, c2 FROM t
WHERE condition;
```

Query distinct rows from a table

```
SELECT DISTINCT c1 FROM t
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Sort the result set in ascending or descending order

```
SELECT c1, c2 FROM t
ORDER BY c1 ASC [DESC];
```

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

```
SELECT c1, c2 FROM t
ORDER BY c1
LIMIT n OFFSET offset;
```

Group rows using an aggregate function

```
SELECT c1, aggregate(c2)
FROM t
GROUP BY c1;
```

Filter groups using HAVING clause

```
SELECT c1, aggregate(c2)
FROM t
GROUP BY c1
HAVING condition;
```

Querying from **multiple tables**

Inner join t1 and t2

```
SELECT c1, c2
FROM t1
INNER JOIN t2 ON condition;
```

Left join t1 and t1

```
SELECT c1, c2
FROM t1
LEFT JOIN t2 ON condition;
```

Right join t1 and t2

```
SELECT c1, c2
FROM t1
RIGHT JOIN t2 ON condition;
```

Perform full outer join

```
SELECT c1, c2
FROM t1
FULL OUTER JOIN t2 ON condition;
```

Produce a Cartesian product of rows in tables

```
SELECT c1, c2
FROM t1
CROSS JOIN t2;
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Another way to perform cross join

```
SELECT c1, c2
FROM t1, t2;
```

Join t1 to itself using INNER JOIN clause

```
SELECT c1, c2
FROM t1 A
INNER JOIN t1 B ON condition;
```

Using SQL Operators

Combine rows from two queries

```
SELECT c1, c2 FROM t1
UNION [ALL]
SELECT c1, c2 FROM t2;
```

Return the intersection of two queries

```
SELECT c1, c2 FROM t1
```

```
INTERSECT
SELECT c1, c2 FROM t2;
```

Subtract a result set from another result set

```
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MINUS
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Query rows using pattern matching %, _

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Query rows between two values

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SELECT c1, c2 FROM t
WHERE  c1 BETWEEN low AND high;
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Check if values in a table is NULL or not

```
SELECT c1, c2 FROM t
WHERE  c1 IS [NOT] NULL;
```

Managing tables

Create a new table with three columns

```
CREATE TABLE t (
     id INT PRIMARY KEY,
     name VARCHAR NOT NULL,
     price INT DEFAULT 0
);
```

Delete the table from the database

```
DROP TABLE t ;
```

Add a new column to the table

```
ALTER TABLE t ADD column;
```

Drop column c from the table

```
ALTER TABLE t DROP COLUMN c ;
```

Add a constraint

```
ALTER TABLE t ADD constraint;
```

Drop a constraint

```
ALTER TABLE t DROP constraint;
```

Rename a table from t1 to t2

```
ALTER TABLE t1 RENAME TO t2;
```

Rename column c1 to c2

```
ALTER TABLE t1 RENAME c1 TO c2 ;
```

Remove all data in a table

```
TRUNCATE TABLE t;
```

Using SQL constraints

Set c1 and c2 as a primary key

```
CREATE TABLE t(
    c1 INT, c2 INT, c3 VARCHAR,
    PRIMARY KEY (c1,c2)
);
```

Set c2 column as a foreign key

```
CREATE TABLE t1(
    c1 INT PRIMARY KEY,
    c2 INT,
    FOREIGN KEY (c2) REFERENCES t2(c2)
);
```

Make the values in c1 and c2 unique

```
CREATE TABLE t(
    c1 INT, c1 INT,
    UNIQUE(c2,c3)
);
```

Ensure c1 > 0 and values in c1 >= c2

```
CREATE TABLE t(
    c1 INT, c2 INT,
    CHECK(c1> 0 AND c1 >= c2)
);
```

Set values in c2 column not NULL

```
CREATE TABLE t(
     c1 INT PRIMARY KEY,
     c2 VARCHAR NOT NULL
);
```

Modifying **Data**

Insert one row into a table

```
INSERT INTO t(column_list)
VALUES(value_list);
```

Insert multiple rows into a table

```
INSERT INTO t(column_list)
VALUES (value_list),
       (value_list), …;
```

Insert rows from t2 into t1

```
INSERT INTO t1(column_list)
SELECT column_list
FROM t2;
```

Update new value in the column c1 for all rows

```
UPDATE t
```

```
SET c1 = new_value;
```

Update values in the column c1, c2 that match the condition

```
UPDATE t
SET c1 = new_value,
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WHERE condition;
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Delete all data in a table

```
DELETE FROM t;
```

Delete subset of rows in a table

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Managing Views

Create a new view that consists of c1 and c2

```
CREATE VIEW v(c1,c2)
AS
SELECT c1, c2
FROM t;
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Create a new view with check option

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CREATE VIEW v(c1,c2)
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Create a temporary view

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

Delete a view

```
DROP VIEW view_name;
```

Managing indexes

Create an index on c1 and c2 of the t table

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

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

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

Drop an index

```
DROP INDEX idx_name;
```

Managing triggers

Create or modify a trigger

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

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**

Delete a specific trigger

```
DROP TRIGGER trigger_name;
```

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SQL Data Types

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