

SQL Database Objects Reference Sheet

This reference sheet lists common database objects in SQL along with brief descriptions. These objects define the structure, logic, and security of the database.

Database Object	Description
Table	Stores data in rows and columns; the primary storage unit in SQL.
View	A virtual table based on the result-set of an SQL query.
Index	Improves the speed of data retrieval from a table.
Stored Procedure	A saved collection of SQL statements that perform a task.
Function	Returns a value and can be used in SQL expressions; similar to procedures.
Trigger	Executes automatically in response to certain events on a table or view.
Schema	A logical container for database objects; helps organize them.
Sequence	Generates a sequence of numeric values, often used for auto-incrementing IDs.
Synonym	An alias for another database object to simplify access.
Constraint	Rules applied to table columns for data validation and integrity.

2.what are the metadata tables we have in sql?

Metadata Table	Description
INFORMATION_SCHEMA.TABLES	Lists all tables in the database
INFORMATION_SCHEMA.COLUMNS	Lists all columns in all tables

Metadata Table	Description
INFORMATION_SCHEMA.SCHEMATA	Lists all schemas
INFORMATION_SCHEMA.CONSTRAINTS	Lists table constraints (PK, FK, UNIQUE, etc.)
INFORMATION_SCHEMA.KEY_COLUMN_USAGE	Links constraints to their columns
INFORMATION_SCHEMA.VIEWS	Lists all views in the database
INFORMATION_SCHEMA.ROUTINES	Lists stored procedures and functions
INFORMATION_SCHEMA.TRIGGERS	Lists triggers

Vendor-Specific Metadata Tables

Depending on your database system, there are more detailed system views or tables:

SQL Server

System View / Table	Purpose
sys.tables, sys.columns	Lists tables and columns
sys.objects, sys.schemas	All database objects and schemas
sys.indexes, sys.index_columns	Index metadata
sys.procedures, sys.triggers	Stored procedures and triggers

System View / Table	Purpose
sys.foreign_keys, sys.check_constraints	Constraints

MySQL

System Table	Purpose
information_schema.TABLES	Table metadata
information_schema.STATISTICS	Index metadata
mysql.user, mysql.db	User privileges and database access

PostgreSQL

System View / Table Purpose

pg_tables, pg_class	Table information
pg_attribute	Column info
pg_indexes, pg_index	Index info
pg_constraint	Constraints
pg_proc	Functions and procedures

Oracle

System View	Purpose
ALL_TABLES, ALL_TAB_COLUMNS	Tables and columns
USER_CONSTRAINTS, USER_INDEXES	Constraints and indexes
DBA_OBJECTS, DBA_TABLES	All objects in the database

SQL Server (T-SQL)

1. List All Tables

sql

CopyEdit

```
SELECT name, schema_id
```

```
FROM sys.tables;
```

2. List All Columns in a Specific Table

sql

CopyEdit

```
SELECT name, column_id, system_type_id
```

```
FROM sys.columns
```

```
WHERE object_id = OBJECT_ID('YourTableName');
```

3. List Indexes on a Table

sql

CopyEdit

```
SELECT i.name AS IndexName, i.type_desc, c.name AS ColumnName
```

```
FROM sys.indexes i
```

```
JOIN sys.index_columns ic ON i.object_id = ic.object_id AND i.index_id =  
ic.index_id
```

```
JOIN sys.columns c ON ic.object_id = c.object_id AND ic.column_id =  
c.column_id
```

```
WHERE i.object_id = OBJECT_ID('YourTableName');
```

4. List All Stored Procedures

sql

CopyEdit

```
SELECT name, type_desc
```

```
FROM sys.procedures;
```

✓ MySQL

1. List All Tables

sql

CopyEdit

```
SELECT table_name
```

```
FROM information_schema.tables
```

```
WHERE table_schema = 'your_database';
```

2. List All Columns in a Table

sql

CopyEdit

```
SELECT column_name, data_type, is_nullable
```

```
FROM information_schema.columns
```

```
WHERE table_name = 'your_table' AND table_schema = 'your_database';
```

3. List Indexes on a Table

sql

CopyEdit

```
SHOW INDEXES FROM your_table;
```

4. List Stored Procedures

sql

CopyEdit

```
SELECT routine_name, routine_type  
FROM information_schema.routines  
WHERE routine_schema = 'your_database';
```

PostgreSQL

1. List All Tables

sql

CopyEdit

```
SELECT tablename  
FROM pg_tables  
WHERE schemaname NOT IN ('pg_catalog', 'information_schema');
```

2. List Columns in a Table

sql

CopyEdit

```
SELECT column_name, data_type  
FROM information_schema.columns  
WHERE table_name = 'your_table';
```

3. List Indexes

sql

CopyEdit

```
SELECT indexname, indexdef
FROM pg_indexes
WHERE tablename = 'your_table';
```

4. List All Functions

sql

CopyEdit

```
SELECT proname, proargtypes
FROM pg_proc
JOIN pg_namespace ON pg_proc.pronamespace = pg_namespace.oid
WHERE nspname NOT IN ('pg_catalog', 'information_schema');
```

✓ Oracle

1. List All Tables

sql

CopyEdit

```
SELECT table_name FROM user_tables;
```

2. List Columns in a Table

sql

CopyEdit

```
SELECT column_name, data_type
```

```
FROM user_tab_columns
```

```
WHERE table_name = 'YOUR_TABLE';
```

3. List Constraints

sql

CopyEdit

```
SELECT constraint_name, constraint_type, table_name
```

```
FROM user_constraints;
```

4. List Indexes

sql

CopyEdit

```
SELECT index_name, table_name
```

```
FROM user_indexes;
```