



ISO 9001 : 2008 Certified

SmartBit
Computer's



Add: Above MRF Tyre Showroom, Opp Phoenix Mall, Near Vimannagar Corner BRT Bus Stop, Nagar Road, Pune-14

Ph.No. 7083849524

Mobile: 8888228222

Web Site: www.smartbit.in

Email: smartbitpune@gmail.com

Advanced SQL

SQL - Overview
What is SQL?
MySQL With DBMS & RDBMS,
Oracle using PL/SQL,
MS Access version of SQL.
Why SQL?
A Brief History of SQL
SQL Process
Query Dispatcher
Optimization Engines
Classic Query Engine
SQL Query Engine, etc.
SQL Commands
DDL - Data Definition Language
Command & Description
Creates a new table, a view of a table.
Modifies an existing database object, such as a table.
Deletes an entire table, other objects in the database.
DML - Data Manipulation Language

Command & Description
Retrieves certain records from one or more tables.
Creates a record.
Modifies records.
Deletes records.
DCL - Data Control Language
Command & Description
Gives a privilege to user.
Takes back privileges granted from user.
SQL - RDBMS Concepts
What is RDBMS?
What is a table?
What is a field?
What is a Record or a Row?
What is a column?
What is a NULL value?
SQL Constraints
NOT NULL Constraint
DEFAULT Constraint
UNIQUE Constraint
PRIMARY Key
FOREIGN Key
CHECK Constraint
Dropping Constraints
Integrity Constraints
Data Integrity

Entity Integrity

Domain Integrity

Referential integrity

User-Defined Integrity integrity.

Database Normalization

Eliminating redundant data.

Ensuring data dependencies make sense.

First Normal Form (1NF)

Second Normal Form (2NF)

Third Normal Form (3NF)

RDBMS Databases

Concurrency

Read Consistency

Locking Mechanisms

Quiesce Database

Portability

Self-managing database

SQL*Plus

ASM

Scheduler

Resource Manager

Data Warehousing

Materialized views

Bitmap indexes

Table compression

Parallel Execution

Analytic SQL

Data mining
Partitioning
SQL - Syntax
SQL SELECT Statement
SQL - SORTING Results
SQL DISTINCT Clause
SQL WHERE Clause
SQL AND/OR Clause
SQL IN Clause
SQL BETWEEN Clause
SQL LIKE Clause
SQL ORDER BY Clause
SQL GROUP BY Clause
SQL COUNT Clause
SQL HAVING Clause
SQL CREATE TABLE Statement
SQL DROP TABLE Statement
SQL CREATE INDEX Statement
SQL DROP INDEX Statement
SQL DESC Statement
SQL TRUNCATE TABLE Statement
SQL ALTER TABLE Statement
SQL ALTER TABLE Statement (Rename)
SQL INSERT INTO Statement
SQL UPDATE Statement
SQL DELETE Statement
SQL CREATE DATABASE Statement

SQL DROP DATABASE Statement

SQL USE Statement

SQL COMMIT Statement

SQL ROLLBACK Statement

<h2>DATA TYPES</h2>

bigint

int

smallint

tinyint

bit

decimal

numeric

money

smallmoney

float

real

datetime

smalldatetime

date

time

char

varchar

varchar(max)

text

nchar

nvarchar

nvarchar(max)

ntext
binary
varbinary
varbinary(max)
image
sql_variant
timestamp
uniqueidentifier
xml
cursor
table
<h2>SQL - Operators</h2>
What is an Operator in SQL
SQL Arithmetic Operators
+ (Addition)
- (Subtraction)
* (Multiplication)
/ (Division)
% (Modulus)
SQL Comparison Operators
=
!=
<>
>
<
>=
<=

!<

!>

SQL Logical Operators

ALL

AND

ANY

BETWEEN

EXISTS

IN

LIKE

NOT

OR

IS NULL

UNIQUE

SQL - Expressions

Boolean

Numeric

Date

SQL - Using Joins

INNER JOIN

LEFT JOIN

RIGHT JOIN

FULL JOIN

SELF JOIN

CARTESIAN JOIN

SQL - UNIONS CLAUSE

The same number of columns selected
The same number of column expressions
The same data type and
Have them in the same order
SQL - NULL Values
SQL - Alias Syntax
SQL - Indexes
SQL - Using Views
Structure data in a way that users find intuitive.
Restrict access to the data.
Summarize data from various tables.
SQL - Transactions
Atomicity
Consistency
Isolatio
Durability
SQL - Wildcard Operators
The percent sign (%)
The underscore (_)
SQL - Date Functions
ADDDATE()
Adds dates
ADDTIME()
Adds time
CONVERT_TZ()
CURDATE()

Returns the current date
CURRENT_DATE(), CURRENT_DATE
Synonyms for CURDATE()
CURRENT_TIME(), CURRENT_TIME
Synonyms for CURTIME()
CURRENT_TIMESTAMP(), CURRENT_TIMESTAMP
Synonyms for NOW()
CURTIME()
DATE_ADD()
Adds two dates
DATE_FORMAT()
Formats date as specified
DATE_SUB()
Subtracts two dates
DATE()
DATEDIFF()
DAY()
Synonym for DAYOFMONTH()
DAYNAME()
DAYOFMONTH()
Returns the day of the month (1-31)
DAYOFWEEK()
DAYOFYEAR()
Returns the day of the year (1-366)
EXTRACT
Extracts part of a date
FROM_DAYS()

FROM_UNIXTIME()
HOUR()
Extracts the hour
LAST_DAY
LOCALTIME(), LOCALTIME
Synonym for NOW()
LOCALTIMESTAMP, LOCALTIMESTAMP()
Synonym for NOW()
MAKEDATE()
MAKETIME
MAKETIME()
MICROSECOND()
MINUTE()
MONTH()
MONTHNAME()
NOW()
PERIOD_ADD()
PERIOD_DIFF()
QUARTER()
SEC_TO_TIME()
SECOND()
STR_TO_DATE()
SUBDATE()
SUBTIME()
SYSDATE()
TIME_FORMAT()
Formats as time

TIME_TO_SEC()
TIME()
TIMEDIFF()
TIMESTAMP()
TIMESTAMPADD()
TIMESTAMPDIFF()
TO_DAYS()
UNIX_TIMESTAMP()
UTC_DATE()
UTC_TIME()
UTC_TIMESTAMP()
WEEK()
WEEKDAY()
WEEKOFYEAR()
YEAR()
YEARWEEK()
Unit Values
MICROSECOND
SECOND
MINUTE
HOUR
DAY
WEEK
MONTH
QUARTER
YEAR
SECOND_MICROSECOND

MINUTE_MICROSECOND

MINUTE_SECOND

HOUR_MICROSECOND

HOUR_SECOND

HOUR_MINUTE

DAY_MICROSECOND

DAY_SECOND

DAY_MINUTE

DAY_HOUR

YEAR_MONTH

TIMESTAMPADD

FRAC_SECOND

SECOND, MINUTE

HOUR, DAY

WEEK

MONTH

QUARTER or

YEAR

SQL - Temporary Tables

Inserting Temporary Tables

Dropping Temporary Tables

SQL - Clone Tables

SQL - Sub Queries

Subqueries must be enclosed within parentheses.

A subquery can have only one column in the SELECT clause.

The GROUP BY command can be used.

Subqueries that return more than one row.

The SELECT evaluate to a BLOB, ARRAY, CLOB, or NCLOB.

A subquery cannot be immediately enclosed in a set function.

The BETWEEN operator cannot be used with a subquery.

SQL - Using Sequences

Using AUTO_INCREMENT column

Obtain AUTO_INCREMENT Values

Renumbering an Existing Sequence

Starting a Sequence at a Particular Value

SQL - Handling Duplicates

SQL - Injection

SQL - Database Tuning