CHEAT SHEET

SQL FOR DUMMIES CHEAT SHEET

From **SQL For Dummies, 8th Edition**

By **Allen G. Taylor**

This Cheat Sheet consists of several helpful tables and lists, containing information that comes up repeatedly when working with SQL. In one place, you can get a quick answer to a number of different questions that frequently arise during an SQL development effort.

SQL CRITERIA FOR NORMAL FORMS

To ensure that database tables are designed in such a way that they will hold your data reliably, you need to be sure that they are not subject to modification anomalies. Normalizing your databases will give you that assurance. Compare the SQL criteria in the following list to the tables in your database. Doing so will alert you to the possibility of anomalies, when you find that your database is not sufficiently normalized.

First Normal Form (1NF):

- Table must be two-dimensional, with rows and columns.
- Each row contains data that pertains to one thing or one portion of a thing.
- Each column contains data for a single attribute of the thing being described.
- Each cell (intersection of row and column) of the table must be single-valued.
- All entries in a column must be of the same kind.
- Each column must have a unique name.
- No two rows may be identical.
- The order of the columns and of the rows does not matter.

Second Normal Form (2NF):

- Table must be in first normal form (1NF).
- All nonkey attributes (columns) must be dependent on the entire key.

Third Normal Form (3NF):

- Table must be in second normal form (2NF).
- Table has no transitive dependencies.

Domain-Key Normal Form (DK/NF):

- Every constraint on the table is a logical consequence of the definition of keys and domains.

SQL DATA TYPES

Here's a list of all the formal data types that ISO/IEC standard SQL recognizes. In addition to these, you may define additional data types that are derived from these.

Exact Numerics:

- INTEGER
- SMALLINT
- BIGINT
- NUMERIC
- DECIMAL

Approximate Numerics:

- REAL
- DOUBLE PRECISION
- FLOAT

Binary Strings:

- BINARY
- BINARY VARYING

- BINARY LARGE OBJECT

Boolean:

- BOOLEAN

Character Strings:

- CHARACTER
- CHARACTER VARYING (VARCHAR)
- CHARACTER LARGE OBJECT
- NATIONAL CHARACTER
- NATIONAL CHARACTER VARYING
- NATIONAL CHARACTER LARGE OBJECT

Datetimes:

- DATE
- TIME WITHOUT TIMEZONE
- TIMESTAMP WITHOUT TIMEZONE
- TIME WITH TIMEZONE
- TIMESTAMP WITH TIMEZONE

Intervals:

- INTERVAL DAY
- INTERVAL YEAR

Collection Types:

- ARRAY
- MULTISET

Other Types:

- ROW
- XML

SQL VALUE FUNCTIONS

These SQL value functions perform operations on data. There are all kinds of operations that could conceivably be performed on data items, but these are some that are needed most often.

String Value Functions

Function	**Effect**
SUBSTRING	Extracts a substring from a source string
SUBSTRING SIMILAR	Extracts a substring from a source string, using POSIX-based regular expressions

SUBSTRING_REGEX	Extracts from a string the first occurrence of an XQuery regular expression pattern and returns one occurrence of the matching substring
TRANSLATE_REGEX	Extracts from a string the first or every occurrence of an XQuery regular expression pattern and replaces it or them with an XQuery replacement string
UPPER	Converts a character string to all uppercase
LOWER	Converts a character string to all lowercase
TRIM	Trims off leading or trailing blanks
TRANSLATE	Transforms a source string from one character set to another
CONVERT	Transforms a source string from one character set to another

Numeric Value Functions

Function	**Effect**
POSITION	Returns the starting position of a target string within a source string
CHARACTER_LENGTH	Returns the number of characters in a string
OCTET_LENGTH	Returns the number of octets (bytes) in a character string
EXTRACT	Extracts a single field from a datetime or interval

Datetime Value Functions

Function	Effect
CURRENT_DATE	Returns the current date
CURRENT_TIME(p)	Returns the current time; (p) is precision of seconds
CURRENT_TIMESTAMP(p)	Returns the current date and the current time; (p) is precision of seconds

SQL SET FUNCTIONS

The SQL set functions give you a quick answer to questions you may have about the characteristics of your data as a whole. How many rows does a table have? What is the highest value in the table? What is the lowest? These are the kinds of questions that the SQL set functions can answer for you.

COUNT	Returns the number of rows in the specified table
MAX	Returns the maximum value that occurs in the specified table
MIN	Returns the minimum value that occurs in the specified table
SUM	Adds up the values in a specified column
AVG	Returns the average of all the values in the specified column

SQL WHERE CLAUSE PREDICATES

Predicates boil down to either a TRUE or a FALSE result. You can filter out unwanted rows from the result of an SQL query by applying a WHERE clause whose predicate excludes the unwanted rows.

Comparison Predicates

=	Equal
<>	Not equal
<	Less than
<=	Less than or equal
>	Greater than
>=	Greater than or equal

Other Predicates

ALL	BETWEEN
DISTINCT	EXISTS
IN	LIKE

MATCH	NOT IN
NOT LIKE	NULL
OVERLAPS	SIMILAR
SOME, ANY	UNIQUE

CHEAT SHEET

CRYSTAL REPORTS 9 FOR DUMMIES CHEAT SHEET

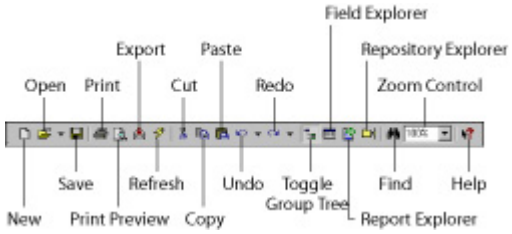
From **Crystal Reports 9 For Dummies**

By **Allen G. Taylor**

Producing high-quality reports with Crystal Reports 9 is a whole lot easier with the help of the Crystal Reports 9 toolbars. The standard toolbar helps you do basic tasks; the formatting and insert toolbars help you to format and insert, natch; and with the CR 9 release, you get the Expert functions and the Expert toolbar.

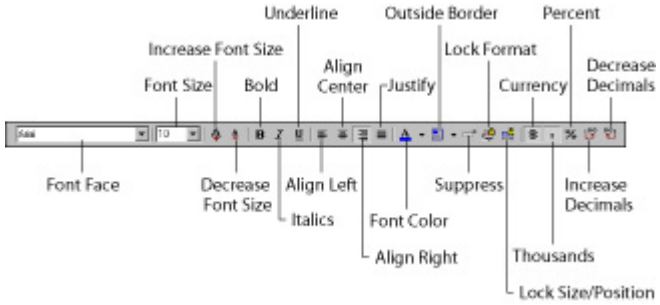
CRYSTAL REPORTS 9 STANDARD TOOLBAR

You can produce great reports with Crystal Reports 9, and to help you do just that, you need to be familiar with the buttons on the basic toolbar. The following figure shows the Crystal Reports 9 standard toolbar:



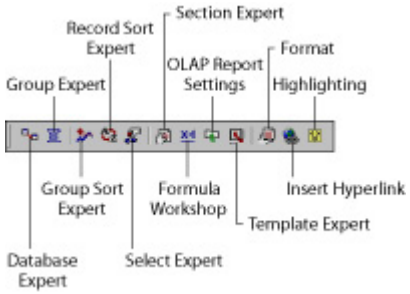
CRYSTAL REPORTS 9 FORMATTING TOOLBAR

You use Crystal Reports 9's formatting options to create professional-looking reports. Using the formatting toolbar of Crystal Reports 9, you can adjust the font, alignment, and many other formatting aspects. The following figure shows the formatting toolbar and its buttons:



CRYSTAL REPORTS 9 EXPERT TOOLS TOOLBAR

With the release of Crystal Reports 9 came the Database Expert and its toolbar. Through the Expert you can select and connect to a data source and perform other tasks. The Expert toolbar and its buttons are shown in the following figure:



CRYSTAL REPORTS 9 INSERT TOOLS TOOLBAR

The business reports you create with Crystal Reports 9 can be enhanced with inserted materials such as tables, charts, and maps. The following figure shows the Crystal Reports 9 Insert Tools toolbar: