SQL

REFERENCE HANDOUT

Information Technology Services
UA Help Desk and Training

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Comparison Operators

Operator	Meaning	Example
=	equal, exact match	TERM_CODE = '199703' AGE = 40 BIRTH_DATE = '01-JAN-98'
>	greater than	TERM_CODE > '199703' AGE > 40 BIRTH_DATE > '01-JAN-98'
<	less than	TERM_CODE < '199703' AGE < 40 BIRTH_DATE < '01-JAN-98'
>=	greater than or equal to	TERM_CODE >= '199703' AGE >= 40 BIRTH_DATE >= '01-JAN-98'
<=	less than or equal to	TERM_CODE <= '199703' AGE <= 40 BIRTH_DATE <= '01-JAN-98'
<>	not equal	TERM_CODE <> '199703' AGE <> 40 BIRTH_DATE <> '01-JAN-98'
like	matches a portion of a value	TERM_CODE like '1997%' TERM_CODE like '199_03'
not like	does not match a portion of a value	TERM_CODE not like '1998%' TERM_CODE not like '199_03'
in	equal to any member in list	TERM_CODE in ('199703', '199801', '199803') AGE in (30,40)
not in	not equal to any member in list	AGE not in (30, 40) COURSE_CAMPUS not in ('F', 'J')
between	Greater than or equal to x and less than or equal to y. *Between is inclusive of the values you enter.*	TERM_CODE between '199703' and '199801' AGE between 30 and 40 BIRTH_DATE between '01-JAN-98' and '02-JAN-98'
not between	Not greater than or equal to x and not less than or equal to y (less than X or greater than y)	TERM_CODE not between '199703' and '199801' AGE not between 30 and 40 BIRTH_DATE not between '01-JAN-98' and '02-JAN-98'
is null	Contains no value	TERM_CODE is null
is not null	Contains a value	TERM_CODE is not null

Numeric Functions

Functions	Meaning	Example
nvl (value)	if null, substitute	nvl (SSBSECT_CRSE-TITLE, in TITLE)
round (value, precision)	Rounds the value to a specified decimal.	round (SALARY*1.1,2)
trunc	Truncates the number to the specified decimal.	trunc (SALARY*1.1,2) 123.457 → 123.45
mod	Returns the remainder of division.	mod (SALARY*1.1,2)

Text Functions

Functions	Meaning	Example
lower (string)	Converts alpha character string to lowercase	lower (LAST_NAME)
upper (string)	Converts alpha character string to uppercase	upper (LAST_NAME)
rpad (string, length, [set])	Pad the right side of a column with spaces, periods, commas, etc.	rpad (SSECT_SUBJ_COD, 5,´`)
lpad (string, length, [set])	Pad the left side of a column with spaces, periods, commas, etc.	lpad (CITY, 20, ´. `)
substr (string, start, count)	Returns a substring starting at character position you indicate for as many characters long as you indicate.	substr (ACCOUNT_CODE, 1,1)
||	Concatenates (joins) character strings. Note: fields containing character strings are character strings.	FIRST_NAME || ` ´|| LAST_NAME

Conversion Functions

Functions	Meaning	Example
to_char (date/number, 'format')	Converts a number or date value to a varchar2 character string with format model you specify.	to_char (HIRE_DATE, 'mm/dd/yy hh:mi:ss')
to_date (string, 'format')	Converts a character string representing a date to a date value according to the format specified. If format is omitted, default format will be DD-MON-YY.	to_date ('04/20/98 10:30', 'mm/dd/yy hh:mi')
decode (value, [if, then], else)	Return specific values depending on matching criteria.	decode (gender, 'F', 'Female' , 'M', 'Male', '?') decode (CLASS_STANDING, 'SR', 'Senior')

Aggregate Functions

Operator	Meaning	Example
avg (value)	Average value of a field, ignoring null values.	avg (AGE)
count (value)	Count all selected rows using *, including duplicates and rows with nulls. Returns a single number.	count (*) count (STUDENT_ID)
count (distinct expression)	Count only non-duplicate values.	count (distinct STUDENT_ID)
max (value)	Returns the maximum value for that field.	max (SALARY)
min (value)	Returns the minimum value for that field.	min (SALARY)
nvl (value,substitute)	If first value is null, returns second value.	nvl (SALARY,0)
sum (value)	Returns the total value for that field.	sum (ANNUAL_SALARY)

SQL*PLUS

Number Format

These options work with both **set numformat** *and the* **column format** *command.*

Format	Definition
9999990	Count of nines or zeroes determines maximum digits that can be displayed.
999,999,999.99	Commas and decimals will be placed in the pattern shown. Display will be blank if the value is zero.
999990	Displays a zero if the value is zero.
099999	Displays numbers with leading zeros.
$99999	Dollar sign placed in front of every number.
B99999	Display will be blank if value is zero.
99999MI	If number is negative, minus sign follows the number. Default is negative sign on left.
99999S	Same as 99999MI.
S99999	If number is negative, minus sign precedes the number; if number is positive, plus sign precedes the number
99D99	Displays a decimal character in this position.
C99999	Displays the ISO currency character in this position.
L99999	Displays the local currency character in this position.
RN	Displays the number as a Roman numeral.
99999PR	Negative numbers displayed surrounded by < and >.
9.999EEEE	Display will be in scientific notation (must be exactly four E's).
999V99	Multiplies number by $10n$ where n is number of digits to right of V. 999V9 turns 1234 into 123400.

Number Functions
This is an ordered list of a few of the number functions in ORACLE's SQL.

Single-Value Functions

Function	Definition
NVL (value, substitute)	Substitute for **value** if **value** is NULL
ROUND (value, precision)	Rounding of **value** to precision
SIGN (value)	1 if **value** is positive, -1 if negative
TRUNC (value, precision)	**Value** truncated to precision

Group-Value Functions

Function	Definition
AVG (value)	Average of **value** for group of rows
COUNT (value)	Count of rows for column
MAX (value)	Maximum of all **values** for group of rows.
MIN (value)	Minimum of all **values** for group of rows.
STDDEV (value)	Standard deviation of all **values** for group of rows
SUM (value)	Sum of all **values** for group of rows
VARIANCE (value)	Variance of all **values** for group of rows

List Functions

Function	Definition
GREATEST (value1, value2,…)	Greatest **value** of a list
LEAST (value1, value2,…)	Least **value** of a list

Date Formats

*These date formats are used with both **TO_CHAR** and **TO_DATE**.*

- ISO is the International Standard Organization, which has a different set of set of standards for dates than the US formats.

Function	Definition	Example
MM	Number of month	12
RM	Roman numeral month	XII
MON	Three-letter abbreviation of month	AUG
MONTH	Month fully spelled out	AUGUST
DDD	Number of days in year, since Jan 1	354
DD	Number of days in month	23
D	Number of days in week	6
DY	Three-letter abbreviation of day	FRI
DAY	Day fully spelled out	FRIDAY
YYYY	Full four-digit year	1946
YYY	Last 3 digits of year	946
YY	Last 2 digits of year	46
Y	Last 1 digit of year	6
IYYY	Four-digit year from ISO standard*	
IYY	Three-digit year from ISO standard	
IY	Two-digit year from ISO standard	
I	One-digit year from ISO standard	
RR	Last 2 digits of year relative to current date	
YEAR	Year spelled out:	NINETEEN-FOURTY-SIX
Q	Number of quarter	3
WW	Number of weeks in year	46
IW	Weeks in year from ISO standard	
W	Number of weeks in month	3
J	"Julian"—days since December 31, 4713 B.C.	2422220
HH	Hours of day, always 1-12	11
HH12	Same as HH	
HH24	Hours of day, 24-hour clock	17
MI	Minutes of hour	58
SS	Seconds of minute	43
SSSSS	Seconds since midnight, always 0-86399	43000
/ , - : .	Punctuation to be incorporated into display for **TO-CHAR** or ignored in format for **TO-DATE**	
A.M.	Displays A.M. or P.M. depending on time of day	
P.M	Same effect as A.M.	
AM or PM	Same as A.M. but without periods	
B.C.	Displays B.C. or A.D. depending on date	
A.D.	Same as B.C.	
BC or AD	Same as B.C. but without periods	

Appendix

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