Appendix I

**Oracle FUNCTIONS**

A function usually takes one or more parameters and converts or re-formats them to produce a new value.

Functions fall into 4 categories:

1. String Functions

2. Arithmetic Functions 3. Date Functions

4. Aggregate or Group-Set Functions

You have already encountered some of the last type e.g. MAX, MIN, AVG.

Many string functions also work on arithmetic and date arguments and ORACLE will perform an automatic conversion e.g. NVL

**String Functions**

string1 | | string2

DECODE(col, colval, newval [,colval, newval] [, def])

LENGTH(string) SUBSTR(str, stpos [, len])

INSTR(str1, str2 [, spos])

UPPER(string)

LOWER(string)

TO\_NUMBER(string) TO\_DATE(str [, pict])

SOUNDEX(string)

VSIZE(string)

Concatenates string1 with string2 EMPNO | | DEPTNO

Translates discrete column values

Finds the number of characters in the string

Extracts a number of characters from a string SUBSTR(ENAME, 1, 3)

Finds the position of one string in another string INSTR(ENAME, ‘S’)

INSERT statement: permits only upper case characters to be used

SELECT statement: Changes all characters to upper case UPPER(ENAME)

INSERT statement: permits only lower case characters to be used

SELECT statement: Changes all characters to lower case

Converts a character to a number

Converts a Character String in a given format to a date. Necessary for storing time in a Date field.

Converts phonetically similar strings to the same value

Finds the number of characters required to store the string

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LPAD(string, len[, chr]) RPAD(string, len[, chr]) INITCAP(string)

REPLACE(string, from, to)

LTRIM(string, set)

RTRIM(string, set)

NVL(str1, str2)

Left pads the string with fill characters Right pads the string with fill characters

Capitalises the initial letter of every word in the string

Replaces all the occurrences of the ‘from’ with the ‘to’

Trims all characters in the set from the left of the string

Trims all characters in the set from the right of the string

Returns str2 if str1 is NULL, otherwise returns str1 NVL(JOB, ‘UNKNOWN’)

**Arithmetic Functions**

GREATEST(object-list)

LEAST(object-list)

Returns the greatest of a list of values GREATEST (SAL, COMM\*4)

Returns the smallest of a list of values

POWER(number, e)

ROUND(number[, d])

ABS(number) SIGN(number)

MOD(num1, num2) SQRT(number)

TO\_CHAR (number[, picture])

DECODE (number....) NVL(number, value)

CEIL(number) FLOOR(number)

TRUNC(number[, d]

Raises the number to the e power (positive integer values for e only)

Rounds the number to d digits right of the decimal point (d can be negative for left of decimal point) ROUND (SAL)

Absolute value of the number

+1 if number > 0, 0 if number = 0 -1 if number < 0

Remainder when num1 is divided by num2

Returns the square root of the number; if the number is less than 0, then SQRT returns NULL

Converts a number to a character string in the format specified TO\_CHAR (SAL, ‘9999.99’)

As for decode under string functions As for NVL under string functions NVL(COMM,0)

Rounds the number up to the nearest integer Truncates the number to the nearest integer

Truncates the number to d digits right of the decimal point (d can be negative)

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**DATE and TIME Functions**

A field of DATE type can hold both date and time within the single field. Normal reference to the field will use only the date contents, the time details remaining hidden.

ADD\_MONTHS(date, number)

MONTHS\_BETWEEN(date1, date2)

LAST\_DAY(date) NEXT\_DAY(date, day)

ROUND(date[, precision])

TRUNC(date[, precision]) DECODE(date,...) NVL(date, value)

TO\_CHAR(date, [picture])

Add a number of months to a date (number can be negative)

ADD\_MONTHS(HIREDATE, 3)

Subtracts two dates to yield the difference in months

MONTHS\_BETWEEN(SYSDATE, HIREDATE)

Moves a date forward to last day of month

Moves a date forward to given day of the week

NEXT\_DAY(HIREDATE, ‘MONDAY’) NEXT\_DAY(HIREDATE, 2) - Sunday is day 1

Rounds a date to a specified precision ROUND(HIREDATE, ‘MONTH)

Truncates a date to a specified precision As under string functions

As under string functions

Outputs a date in the specified format, eg TO\_CHAR(HIREDATE, ‘YYYY MM - DY’)

Outputs the time in the specified format, eg TO-CHAR(HIREDATE, 'hh24.mi' )

TO\_CHAR is an especially useful function, and one that is well worth mastering. The full set of date 'pictures' is listed below.

**Date Formats in Oracle DATE functions**

MM Number of month in year 12 RM Roman numeral for month XII

MON (Mon) 3 letter abbreviation of month name DEC (Dec) MONTH Month fully spelled out AUGUST

DDD Number of day in year since Jan 1 DD Number of day in month

D Number of day in week DY 3 letter abbreviation of day DAY Day fully spelled

YYYY Full 4 digit year

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SYYYY Signed year, 1000 BC = -1000 YYY Last 3 digits of year

YY Last 2 digits of year Y Last 1 digit of year

IYYY 4 digit year - ISO standard IYY 3 digit year - ISO standard IY 2 digit year - ISO standard I 1 digit year - ISO standard

RR Last 2 digits of year relative to current date YEAR Year spelled out NINETEEN NINETY SEVEN Q Number of quarter in year

WW Number of week in year IW Week in year - ISO

W Number of week in month

J Julian - days since Dec 31 4713 BC!! HH Hour of the day 1-12

HH12 Same as HH

HH24 Hour of day on 24 hour clock MI Minutes of the hour

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