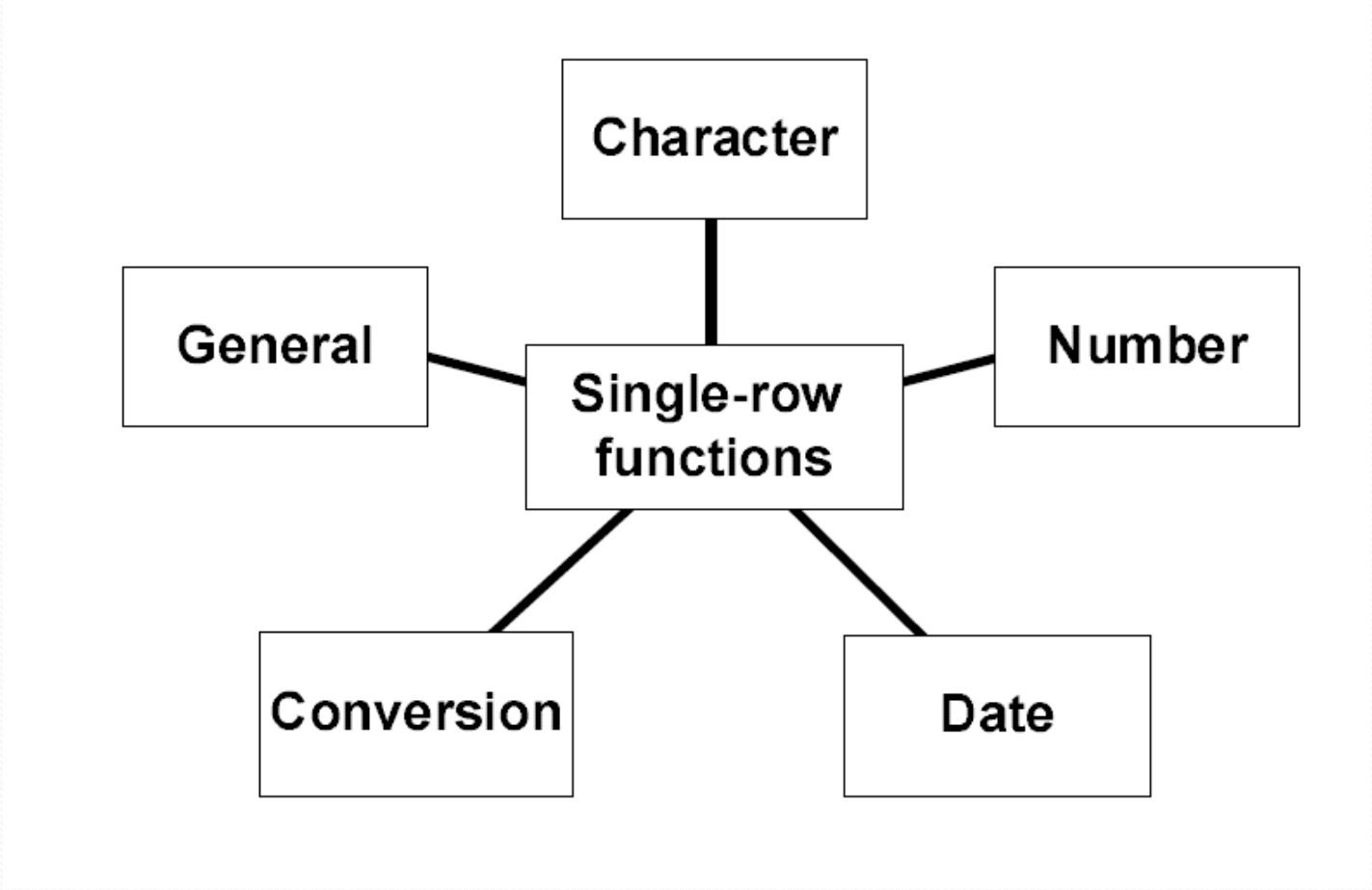
Database

Single row functions



Date

- Default format: DD-MON-YY

- SYSDATE is a function returns the current date.

```
SQL> SELECT   SYSDATE
  2  FROM     DUAL;
```

Arithmetic with Dates

Operation	Result	Description
date + number	Date	Adds a number of days to a date
date - number	Date	Subtracts a number of days from a date
date - date	Number of days	Subtracts one date from another
date + number/24	Date	Adds a number of hours to a date

Arithmetic with Dates

```
SQL> SELECT ename, (SYSDATE-hiredate)/7 WEEKS
  2  FROM   emp
  3  WHERE  deptno = 10;
```

```
ENAME          WEEKS
---------- ---------
KING       830.93709
CLARK      853.93709
MILLER     821.36566
```

Date functions

Function	Description
MONTHS_BETWEEN	Number of months between two dates
ADD_MONTHS	Add calendar months to date
NEXT_DAY	Next day of the date specified
LAST_DAY	Last day of the month
ROUND	Round date
TRUNC	Truncate date

Example

- MONTHS_BETWEEN ('01-SEP-95','11-JAN-94')
  → 19.6774194
- ADD_MONTHS ('11-JAN-94',6) → '11-JUL-94'
- NEXT_DAY ('01-SEP-95','FRIDAY') → '08-SEP-95'
- LAST_DAY('01-SEP-95') → '30-SEP-95'

Date manipulation

- ROUND('25-JUL-95','MONTH') → 01-AUG-95
- ROUND('25-JUL-95','YEAR') → 01-JAN-96
- TRUNC('25-JUL-95','MONTH') → 01-JUL-95
- TRUNC('25-JUL-95','YEAR') → 01-JAN-95

To_char function with dates

```
SQL> SELECT   empno, TO_CHAR(hiredate, 'MM/YY') Month_Hired
  2  FROM     emp
  3  WHERE    ename = 'BLAKE';
```

YYYY	Full year in numbers
YEAR	Year spelled out
MM	Two-digit value for month
MONTH	Full name of the month
DY	Three-letter abbreviation of the day of the week
DAY	Full name of the day

Example

```
SQL> SELECT ename,
  2         TO_CHAR(hiredate, 'fmDD Month YYYY') HIREDATE
  3  FROM   emp;
```

```
ENAME      HIREDATE
---------- ------------------
KING       17 November 1981
BLAKE      1 May 1981
CLARK      9 June 1981
JONES      2 April 1981
MARTIN     28 September 1981
ALLEN      20 February 1981
...
14 rows selected.
```

Elements of Date format

- **Time elements format the time portion of the date.**

HH24:MI:SS AM	15:45:32 PM

- **Add character strings by enclosing them in double quotation marks.**

DD "of" MONTH	12 of OCTOBER

- **Number suffixes spell out numbers.**

ddspth	fourteenth

Time Formats

Use the formats listed in the following tables to display time information and literals and to change numerals to spelled numbers.

Element	Description
AM or PM	Meridian indicator
A.M. or P.M.	Meridian indicator with periods
HH or HH12 or HH24	Hour of day or hour (1–12) or hour (0–23)
MI	Minute (0–59)
SS	Second (0–59)
SSSSS	Seconds past midnight (0–86399)

Other Formats

Element	Description
/ , .	Punctuation is reproduced in the result
"of the"	Quoted string is reproduced in the result

Specifying Suffixes to Influence Number Display

Element	Description
TH	Ordinal number (for example, DDTH for 4TH)
SP	Spelled-out number (for example, DDSP for FOUR)
SPTH or THSP	Spelled-out ordinal numbers (for example, DDSPTH for FOURTH)

Examples

```
SQL> SELECT  ename,
  2          TO_CHAR(hiredate, 'fmDdspth "of" Month YYYY fmHH:MI:SS AM')
  3          HIREDATE
  4  FROM    emp;


ENAME      HIREDATE
---------- ----------------------------------------------
KING       Seventeenth of November 1981 12:00:00 AM
BLAKE      First of May 1981 12:00:00 AM
...
14 rows selected.
```

- Select * from emp where to_char(hiredate,'MON')='FEB'
- <, > , like with dates

Example

Select * from emp where
to_char(hiredate,'dd-mon-yyyy')<'09-jan-1999'

Let the hiredate be '09-apr-2015', this comparison will result with wrong answer.

'09-apr-2015' < '09-jan-1999'

Null values- operations

```
SQL> SELECT ename, sal, comm, (sal*12)+comm
  2  FROM   emp;

ENAME             SAL       COMM (SAL*12)+COMM
---------- --------- --------- -------------
KING             5000
BLAKE            2850
CLARK            2450
JONES            2975
MARTIN           1250       1400         16400
...
14 rows selected.
```

Null values – nvl function

- Convert null to actual values

  - NVL(comm,0)
  - NVL(hiredate,'01-JAN-97')
  - NVL(job,'No Job Yet')

Example

```
SQL> SELECT ename, sal, comm, (sal*12)+NVL(comm,0)
  2  FROM   emp;
```

```
ENAME                SAL       COMM (SAL*12)+NVL(COMM,0)
---------- --------- --------- --------------------
KING                5000                      60000
BLAKE               2850                      34200
CLARK               2450                      29400
JONES               2975                      35700
MARTIN              1250       1400           16400
ALLEN               1600        300           19500
...
14 rows selected.
```

Nesting functions

```
SQL> SELECT   ename,
  2           NVL(TO_CHAR(mgr),'No Manager')
  3  FROM     emp
  4  WHERE    mgr IS NULL;
```

```
ENAME      NVL(TO_CHAR(MGR),'NOMANAGER')
---------- ------------------------------
KING       No Manager
```

Decode Function

```
SQL> SELECT job, sal,
  2         DECODE(job, 'ANALYST', SAL*1.1,
  3                     'CLERK',   SAL*1.15,
  4                     'MANAGER', SAL*1.20,
  5                                SAL)
  6           REVISED_SALARY
  7  FROM    emp;
```

```
JOB                 SAL REVISED_SALARY
--------- --------- ---------------
PRESIDENT        5000            5000
MANAGER          2850            3420
MANAGER          2450            2940
...
14 rows selected.
```