DBMS-III

SQL, Constraints

DDL — DML — DCL

Aggregation Functions

* MIN
* MAX
* Average
* COUNT
* SUM
* DISTINCT
* STDDEV
* VARIANCE

Set Operators

* Used to join results of 2 (or more) select statements
    - UNION
    - UNIONALL
    - MINUS
    - INTERSECT

Joins

* Used to fetch records from 2 or more table(s) using a common field.

* WHERE $\langle t_1 \cdot c_1 \rangle = \langle t_2 \cdot c_2 \rangle$

    - SIMPLE JOIN
    - SELF JOIN
    - OUTER JOIN

Subqueries

* A Query stmt containing another query is a Subquery / Nested query.

    - NESTED QUERY ⟶ • Inner Exec and then Outer
                       • Bottom - UP
    - CORRELATED QUERY ⟶ • Outer Exec and the Inner
                            • Top - Down

PL/SQL

CURSOR: * Private SQL workgroup area allocated temporarily.

Implicit

* Created whenever DML statements are executed.

* Has 4 Attributes:
  - SQL % ISOPEN
  - SQL % FOUND
  - SQL % NOTFOUND
  - SQL % ROWCOUNT

Explicit

* User defined Cursors
* Has to be defined in declaration section of PL/SQL Block

PROCEDURE(S):

* Does not return an output value directly.

```
CREATE OR REPLACE PROCEDURE AddE (
        P_FirstName  (IN)   E.FirstName % TYPE )
AS                    IN  OUT  INOUT
BEGIN
        INSERT INTO E ( FirstName )
        VALUES ( p_FirstName )
END;
    /
```

> exec AddE

QUERY PROCESSING

* Process of identifying feasible solution to execute a query.

* Basic steps:
  - Parsing and translation
  - Optimisation
  - Evaluation.

SQL- QUERY

↓

SYNTAX CHECK
↓
SEMANTIC CHECK
↓
SHARED POOL CHECK

→ does Hash code exist or not.

↓ → Hard Parsing

OPTIMIZER

↓

RAW SOURCE GENERATION

↓

Soft Parsing

↓

If hash

EXECUTION ENGINE

↓ If no hash