MySQL RDBMS

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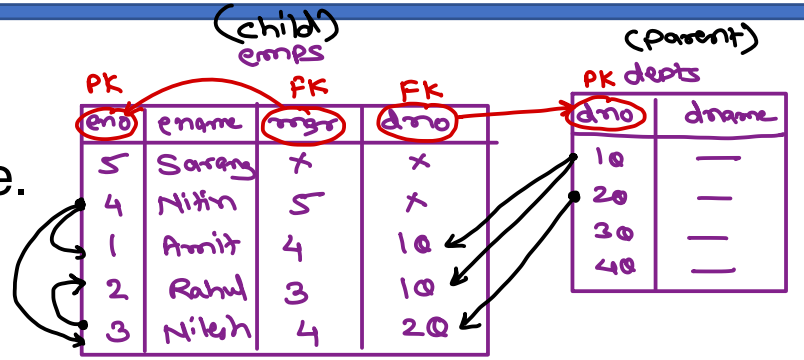
Constraints

Data Integrity

- FOREIGN KEY
  - Column or set of columns that references a column of some table.
  - If column belongs to the same table, it is "self referencing".
  - Foreign key constraint is specified on child table column.
  - FK can have duplicate values as well as null values.
  - FK constraint is applied on column of child table (not on parent table).
  - Child rows cannot be deleted, until parent rows are deleted.
  - MySQL have ON DELETE CASCADE clause to ensure that child rows are automatically deleted, when parent row is deleted. ON UPDATE CASCADE clause does same for UPDATE operation.
  - By default foreign key checks are enabled. They can be disabled by
    - SET @@foreign_key_checks = 0; → No checks will be performed while DML. So parent records can be inserted, update & deleted directly. This is done only in special cases like DB backup.
  - FK constraint can be applied on table level as well as column level.
  - CREATE TABLE child(c1 TYPE, …, FOREIGN KEY (c1) REFERENCES parent(col))



Constraints

- CHECK
  - CHECK is integrity constraint in SQL.
  - CHECK constraint specifies condition on column.
  - Data can be inserted/updated only if condition is true; otherwise error is raised.
  - CHECK constraint can be applied at table level or column level.
  - CREATE TABLE table(c1 TYPE, c2 TYPE CHECK condition1, …, CHECK condition2);

Sub queries

- Sub-query is query within query. Typically it work with SELECT statements.
- Output of inner query is used as input to outer query.
- If no optimization is enabled, for each row of outer query result, sub-query is executed once. This reduce performance of sub-query.
- Single row sub-query
  - Sub-query returns single row.
  - Usually it is compared in outer query using relational operators.

Sub queries

- Multi-row sub-query
  - Sub-query returns multiple rows.
  - Usually it is compared in outer query using operators like IN, ANY or ALL.
    - IN operator checks for equality with results from sub-queries.
    - ANY operator compares with one of the result from sub-queries.
    - ALL operator compares with all the results from sub-queries.

Sub queries

- Correlated sub-query
  - If number of results from sub-query are reduced, query performance will increase.
  - This can be done by adding criteria (WHERE clause) in sub-query based on outer query row.
  - Typically correlated sub-query use IN, ALL, ANY and EXISTS operators.

doesn't Compare inner query result with outer row.

it only checks if inner query is returning any row. (cnt > 0).

Thank you!

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