foreign key

A foreign key is a constraint in a relational database that establishes a link or relationship between two tables. It ensures referential integrity by enforcing a connection between a column or set of columns in table (the child table) and a column or set of columns in another table

foreign keys play a crucial role in maintaining data integrity and enforcing relationships between tables in a relational database. By defining and properly utilizing foreign key constraints, database administrators can ensure the consistency and reliability of their database systems.

**their usage in SQL:**

**1.** Purpose of Foreign Keys:

* Foreign keys ensure that relationships between tables remain valid by enforcing constraints on the data stored in the child table

2. Syntax and Usage:

* (child\_column

3. Actions on Foreign Keys:

* **CASCADE:** If a referenced row in the parent table is deleted, all corresponding rows in the child table are also deleted.
* **SET NULL:** If a referenced row in the parent table is deleted, the foreign key columns in the child table are set to NULL.
* **RESTRICT:** Prevents the deletion of a parent record if there are corresponding child records.
* **NO ACTION:** Similar to RESTRICT, it prevents the deletion of a parent record if there are corresponding child records.

. Benefits of Foreign Keys:

* Data Integrity.
* Enforced Relationships
* Query Optimization.