1. What is a foreign key? Provide an example for how a foreign key might be used. What are some of the issues associated with using foreign keys?

Hi everyone,

A foreign key on Relational Databases, is a field or set of fields that establishes a link or connection between 2 tables. It creates a relationship between the data in these tables, typically in a one-to-one fashion, a column from one table to the primary key column in another. These tables are known as “child table” and “parent table”. The purpose of this key is to maintain data integrity.

A good example of how a foreign key is imagining two tables: “Orders” and “Customers”. The “Orders” table might have foreign key column called “CustomerID” ni which references the “Customers” table’s primary key column. In this case this links each order to the corresponding customer.

Some issues associated with foreign keys are:

1. Performance- Joining tables using foreign keys can impact query performance.
2. Data Integrity- Foreign keys enforce referential integrity, ensuring that data relationships are maintained, however they can also cause data modification issues if not handled properly.
3. Maintenance- Managing FK’s across multiple tables can become complex, especially in large databases with many relationships.
4. Cascading updates/deletes- Foreign keys can lead to unintended results if cascading updates or deletes are not handled correctly. This of course can lead to data loss or inconsistency.

In the end foreign keys are essential for maintaining data integrity and establishing relationships between tables in a relational database. But they also come with their own set of issues such as performance, maintenance complexity, of the potential of significant mistakes.

<https://www.programiz.com/sql/foreign-key#google_vignette>

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