What is constraints?

By definition, a “Database Constraint” is something which restricts the possible values which the database will accept.

Why are constraints important?

Constraints are declarative, which means that you declare them as rules that MUST be adhered to by the entire system you are developing. They are also bound to the database structure and fire automatically when needed, which makes them difficult to violate. Any violation of these constraints results in a “hard failure”, which returns errors to the application and forces the application-developers to deal with the issue immediately.

Different type of constraints?

1. **Primary Key & Unique Constraints** – enforce uniqueness of rows in a table
2. **Foreign Key Constraints** – enforce Referential Integrity (“lookup” values)
3. **DataTypes** – enforce proper data type values (date, number, string, etc.)
4. **Nullability Constraints** – determine whether a value is mandatory or not.
5. **Check Constraints** – more flexible constraints that can be bound to a column or table and can be used to enforce a wider variety of constraints that cannot be enforced in any of the above constraints. However, the SQL that can be used in these is limited to smaller expressions.
6. **Triggers** – the most flexible form of constraint. These can only be bound to a table but are free to use the full power of SQL, almost like a Stored Procedure.