Introduction to Database Design workshop: March 22-23, 1999
Glossary of Database Terminology

Attribute: A characteristic of an entity that we want to record or track or retrieve later; a fact about an object we’re interested in.

Business Rule: A statement that imposes some form of constraint on elements within a field specification, or on a relationship between two tables.

Data: values stored in a database.

Data integrity: Refers to the validity, accuracy, and consistency of the data in a database.

Entity: A person, place, thing, or event about which we want to record information; an object we’re interested in.

Entity-Relationship Diagram (ERD): Identifies the data / information required by the business by displaying the relevant entities and the relationships between them.

Field: The smallest structure in a relational database, used to store the individual pieces of data about the object; stores a single fact about an object that we’re interested in; represents an attribute.

Goals of the database design process:
• understand your data and why you’re tracking it
• eliminate duplication of data
• eliminate redundant data
• eliminate meaningless data or data we don’t care about
• promote accuracy of data
• promote consistency of data
• make sure we can retrieve the information we need from the database
• support the business functions that use the database
• build a database that lends itself to future growth

Key: a field in the database (or an attribute in an ERD) that is used to uniquely identify records and establish relationships between tables or entities; used for the retrieval of data in the table.

Primary Key: uniquely identifies each record in a table, the field lives in the table for which it operates.

Foreign Key: A key from another table that is used to define a relationship to another record in another table. It has the same name and properties as the primary key from which it is copied.
Rules for foreign keys:
1-1: Primary key from the main table is inserted into the second table

1-Many: Primary key from the “1” table gets inserted into the “many” table

Many-many: Primary key from each side gets placed into a third intermediate linking table that (usually) includes nothing but both keys.

Non-key: a “regular” field; describes a characteristic of the table’s subject.

Mission statement: Declares the specific purpose of the database in general terms, it is concise and unambiguous, does not define itself with examples or specific tasks.

Objective: Defines a single general task, with no unnecessary detail

Record: A single “row” in a table; represents the collection of information for a single occurrence of the entity that the table represents.

Relational database: A data structure through which data is stored in tables that are related to one another in some way. The way the tables are related is described through a relationship (see below).

Relationship: Establishes a connection or correspondence or link between a pair of tables in a database, or between a pair of entities in an entity-relationship diagram (ERD).

One-to-one relationship: A single record in table A is related to only one record in table B, and vice versa.

One-to-many relationship: A single record in table A can be related to one or more records in table B, but a single record in table B can be related to only one record in table A.

Many-to-many relationship: A single record in table A can be related to one or more records in table B, and vice versa. Problems with many-to-many relationships: one of the tables will contain a large amount of redundant data, both tables will contain some duplicate data, it will be difficult to add, update, delete records because of the duplication of fields between tables.

Table: The chief structure in a relational database, composed of fields and records, whose order is unimportant. A single table collects together all of the information we are tracking for a single entity; represents an object or an entity.