**Discussion 2.1 – Relational Database Management Systems (RDBMS)**

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WEB 335-307O Introduction to NoSQL

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May 30, 2023

# What is Relational Database Management System?

A relational database is a type of database that stores and provides access to data points that are related to one another. Relational databases are based on the relational model, an intuitive, straightforward way of representing data in tables. In a relational database, each row in the table is a record with a unique ID called the key. The columns of the table hold attributes of the data, and each record usually has a value for each attribute, making it easy to establish the relationships among data points.

# What does the term relationships mean in RDBMS?

The term relationship could be better explained using an example. A small business uses two tables, one of them contains all the related information about customers, including, customer name, address, shipping and billing information, phone number, and other information, each attribute is in a column. The second table contains the related information about the customer’s orders, including, ID of the customer, the product ordered, the quantity, etc. but not the customer’s information.

The relationship is the thing the two tables have in common, which in this case is the ID column key, the relational database can create a relationship between the two tables using this element.

# What are Primary keys?

In the world of databases, the primary key of a relational table uniquely identifies each record in the table. Databases use keys to compare, sort, and store records, and to create relationships between records.

Choosing the primary key in a database is one of the most important steps in the process. It can be a normal attribute that is guaranteed to be unique such as Social Security number on a table with no more than one record per person or — preferably — it can be generated by the database management system such as a globally unique identifier, or GUID, in Microsoft SQL Server. Primary keys may consist of a single attribute or multiple attributes in combination.

Primary keys are the unique links to related information in other tables where the primary key is used. It must be entered when a record is created, and it should never be changed. Each table in the database has a column or two specifically for the primary key.

# How are primary keys generated?

Primary key can be generated using any of these options:

* Using sequences
* Using Triggers
* Using Functions
* Using Identity Columns

# What are Foreign Keys?

A foreign key is a concept that is often used in relational databases. It is a way to create a link between two different tables. A foreign key is a field that refers to another table’s primary key.

# What is MySQL?

MySQL, the most popular Open Source SQL database management system, is developed, distributed, and supported by Oracle Corporation.

Is a DBMS, Databases are relational, is Open Source, The MySQL Server is reliable, scalable, secure, fast and easy to use. The MySQL Server works in Client/Server or Embedded systems.

# Identify at least one feature of MySQL and describe what it is and how it is used

One of the internal features of MySQL is that is designed to be fully multithreaded using kernel threads, to easily use multiple CPUs if they are available. This gives the Server the advantage of using more resources and increasing speed.

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