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Module 1-3 assignment

**Assignment: Basic Comparison of Relational vs. NoSQL Databases**

1. **In the context of relational databases, what are relationships? Provide an example.**

In the context of relational databases, a relationship is how two databases are related to each other. The primary key of the one relational database table becomes the foreign key in the second relational database table to show the relationship among them and to facilitate the search. A relationship in relational databases makes it easy to retrieve information when needed.

Example: Product information related to customer information.

When we shop online, our information is joined to the product that we purchased, and it’s stored in the store database. So, the primary key of the product becomes a foreign key in a customer database.

1. **What are the advantages of relational databases? What are the advantages of NoSQL databases?**
   * **Advantages of relational databases**

* Data processing and manipulation are fast and efficient.
* It does not require coding skills because the basic keywords like Selection, Insert Into, Delete, and Update are used.
* It is easy to learn because you can find answers on the internet if you are having trouble with SQL databases.
  + **Advantages of NoSQL databases**
* NoSQL database is flexible and can be modified according to the needs of the business.
* It can be presented horizontally because it is not structured as a rational database.
* It does not require a strict data type and can be easily and quickly adapted.
* Since it is a cloud database, it stores large amounts of data of data.
* It is simple and requires a few lines of code.

1. **What are the disadvantages of relational databases? What are the disadvantages of NoSQL databases?**
   * **Disadvantages of relational databases**

* relational database has a complex interface .
* Some versions of the SQL database cost a lot of money.
  + **Disadvantages of NoSQL databases**
* NoSQL database does not have complex and flexible queries.
* It is difficult to maintain a unique key across all applications.
* It is easy and fast to find solutions when having a problem with NoSQL databases across the internet like SQL.

**4. Identify at least two features of MySQL and two features of MongoDB and describe what they are and how they are used.**

* + **Two features of MySQL**
* Scalable is the possibility for the database to handle any amount of data. It is used to enable database to horizontally scale on low cost.
* Connectivity is the ability to connect to MySQL server using many protocols. Here is how it is used according to MySQL.com “ - Clients can connect using TCP/IP sockets on any platform. On Windows systems, clients can connect using named pipes if the server is started with the [named\_pipe](https://dev.mysql.com/doc/refman/5.6/en/server-system-variables.html" \l "sysvar_named_pipe) system variable enabled. Windows servers also support shared-memory connections if started with the [shared\_memory](https://dev.mysql.com/doc/refman/5.6/en/server-system-variables.html" \l "sysvar_shared_memory) system variable enabled. Clients can connect through shared memory by using the [--protocol=memory](https://dev.mysql.com/doc/refman/5.6/en/connection-options.html#option_general_protocol) option.”
  + **Two features of MongoDB**
* Indexing appropriately for better query executions is an important feature of MongoDB. Indentation is used to speed a search of data in MongoDB. Lack of proper indices slows down the process and brings query execution issues.
* Ad-hoc queries for optimized, real-time analytics. According to mongodb.com, “Ad-hoc query is a short-lived command whose value depends on a variable. Each time an Ad-hoc query is executed, the result may be different, depending on the variable in question.”

**Work Cited**

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