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10/21/2018

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Assignment 3

Database Design

Introduction

We will be going to examine how the SQL as database programming language handles the database design with basic statements, the impact of SQL on database in daily life and business life directly and indirectly and which job uses SQL as one of their main programming language directly.

Question 1: Basic SQL Statements

The four basic SQL statements to create, read, update and delete data --also known as CRUD-- are INSERT (create), SELECT (read), UPDATE and DELETE command for SQL. Those SQL statements will create the specific data into database by inserting the data, read the specific data from database by selecting the qualified data from databases, update the specific data that satisfy the conditions and delete the data that satisfy the given conditions.

Source: wikipedia, “Create, read, update and delete”, <https://en.wikipedia.org/wiki/Create,_read,_update_and_delete>, 2018.

Question 2: Direct and Indirect Usage of SQL statement

When we need to create the database by ourselves, we usually use database programming language to structure the database with our designs. Specifically, when we are trying to design our database with the ideas of the relational database management system, we directly engage with SQL statements such as CRUD in question 1, creating abstract layers such as normalized tables and so on. With SQL, we now are able to make the database where each entities with unique subject can be related to each other by normalization rules --unique primary keys-- and assumptions of each entities’ properties.

On the other hand, there are some cases when we use SQL statement indirectly. For instance, when we try to create the account in some website, where it may use SQL --not guaranteed but highly likely--, then the information we put is basically as same as we are inserting our data into the tables in database of users in the websites. That is, whenever we interact with some database with websites or applications, we may indirectly use SQL statements without acknowledging.

Question 3: Direct SQL Statement Example in Job

I used LinkedIn and Handshake to find out which jobs require us to know how to use SQL, and there are some common theme of those jobs, related to data analysis, where the main tasks is to directly handle the database of the company to analyze the system of the company. For instance, most of data analysts in LinkedIn and Handshake require us to know how to SQL to manage database and if not, we need to know programming languages regarding to data, such as python and R. The case where there is no SQL required, I assumed based on trend that job applicants will not directly dealing with database but rather dealing with bunch of data collected from different sources; on the other hand, with SQL required, the data analysts will perform database analysis as well. In addition, I have noticed that some --not that many-- software developer engineers require SQL, including different type of SQL, indicating that those engineers might need to interact with databases to create softwares.

Summary

In this paper,

1. Explain what are the four basic SQL statement used to create, read, update and delete data.

2. Explain when do people directly or in-directly use SQL statements.

3. What type of jobs use SQL statements directly and where did you find this information.