Writing and Maintaining SQL Queries for Data Management

Part 1: Office Roleplay Dialogue

Scenario: A Database Administrator, Hiroshi, is working with his colleague, Anna, to write and maintain SQL queries for extracting, modifying, and analyzing data.

Anna: Hey Hiroshi, I need to extract customer purchase data for a report. Do you have an **SQL (Structured Query Language)** statement that can help?

Hiroshi: Sure! You can use a **query** to select the data you need. Are you looking for specific date ranges or all records?

Anna: Just the last six months. Also, I need to combine data from the orders table and the customers table.

Hiroshi: In that case, you'll need a **JOIN** to merge records from both tables based on a common field, like customer ID.

Anna: That makes sense. What if I only want to retrieve orders from VIP customers?

Hiroshi: You can use a **subquery** to filter out non-VIP customers before pulling the order data.

Anna: Sounds good. Oh, and I also need to calculate total sales for each region.

Hiroshi: You should use an **aggregate function**, like SUM, grouped by region to get the total sales figures.

Anna: That's perfect! Can you help me check my query once I write it?

Hiroshi: Of course! Let's test it on a small dataset first to make sure it returns accurate results.

Anna: Great idea. I'll draft the **SQL** statement and we can review it together.

Hiroshi: Sounds like a plan. Let me know when you're ready!

Part 2: Comprehension Questions

1. What does Anna need to do with customer purchase data?
(A) Delete all records from the database
(B) Change customer email addresses
(C) Extract and analyze it ✅
(D) Add new customers to the table

2. How does a JOIN function help in SQL queries?
(A) It merges data from multiple tables ✅
(B) It removes duplicate rows
(C) It encrypts sensitive customer information
(D) It speeds up database performance automatically

3. What is the purpose of a subquery?
(A) To delete an entire table
(B) To add new rows to the database
(C) To back up database files
(D) To filter data before retrieving the main dataset ✅

4. What does an aggregate function do?
(A) It converts SQL queries into plain text
(B) It performs calculations on multiple rows of data ✅

(C) It locks database tables for security

(D) It creates a backup of all stored procedures

Part 3: Key Vocabulary Definitions in Japanese

1. **SQL (Structured Query Language) (SQL・構造化問い合わせ言語)** – データベースを操作するための言語。データの取得、変更、削除などを行う。

2. **Query (クエリ)** – データベースから情報を取得または変更するための SQL 文。

3. **JOIN (結合)** – 複数のテーブルを関連付けてデータを結びつける SQL の操作。

4. **Subquery (サブクエリ)** – メインクエリの中で使用される入れ子のクエリ。特定のデータを抽出するために使う。

5. **Aggregate Function (集約関数)** – SUM や AVG など、複数の行に対して計算を行う SQL 関数。

Part 4: Questions & Correct Answers

1. **What does Anna need to do with customer purchase data?**
   ✅ (C) Extract and analyze it

2. **How does a JOIN function help in SQL queries?**

   ☑ (A) It merges data from multiple tables

3. **What is the purpose of a subquery?**

   ☑ (D) To filter data before retrieving the main dataset

4. **What does an aggregate function do?**

   ☑ (B) It performs calculations on multiple rows of data