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Course: Foundations Of Databases & SQL Programming

GitHub: <https://github.com/carilynette/DBFoundations>

Views, Functions and Stored Procedures

As I progress beyond the basics of SQL, I've found that queries naturally become more complex—and often repetitive. Views, functions, and stored procedures are powerful tools that help streamline everyday tasks by turning commonly used logic into reusable, organized components.

A view is a virtual table created from a saved query. It allows me to write complex logic once—such as joins, filters, or calculations—and reuse it across different reports or dashboards. Views also help control data access, ensuring users see only what they need, which is especially useful when working with sensitive information. In my work, I use views to simplify reporting for key metrics such as supplier performance, shipment tracking, and order lifecycle stages.

A function takes input parameters, performs a calculation or transformation, and returns a result. Functions can be built-in, like SUM, AVG, or GETDATE, or user-defined to meet specific needs. For example, I use built-in functions to calculate on-time delivery rates and to aggregate shipment data for monthly reporting.

A stored procedure is a precompiled block of code used to complete a task, which improves performance since the code doesn't need to be recompiled each time it runs. Stored procedures are especially effective for tasks that update or refresh data on a regular schedule. In my role, I use them to automate the monthly updates of dashboards and reports across the department. While views and functions are often used like tables and return results, stored procedures are more flexible—they can insert, update, delete data, and control the flow of operations.

In summary, views, functions and stored procedures are essential for writing scalable, efficient and maintainable SQL. I avoid duplicating effort in my work, so I rely on these tools to create clean, consistent and adaptable queries that evolve as business needs change.