**Introduction to PL/SQL**

1. **What is PL/SQL and How Does It Extend SQL's Capabilities?**

PL/SQL (Procedural Language/SQL) is Oracle’s extension of SQL that adds programming features to standard SQL. It combines the power of SQL with procedural logic like variables, loops, conditions (IF, FOR, WHILE), and error handling.

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| **Feature** | **SQL** | **PL/SQL** |
| **Procedural logic** | Not supported | Supports loops, conditions, procedures, functions |
| **Modularity** | Limited | Supports packages, procedures, and functions |
| **Variables** | Not available | Can declare and use variables |
| **Error handling** | Basic (try/catch not available) | Advanced with EXCEPTION blocks |
| **Performance** | Executes one statement at a time | Can run blocks of code, reducing server round trips |

**2. Benefits of Using PL/SQL**

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| **Benefit** | **Explanation** |
| **1. Procedural Programming** | Use logic like IF, LOOP, and CASE to create powerful business logic. |
| **2. Better Performance** | Executes multiple SQL statements as a block, reducing network traffic. |
| **3. Modularity** | Organize code into **procedures**, **functions**, and **packages**. |
| **4. Maintainability** | Easier to maintain and debug compared to raw SQL spread across applications. |
| **5. Security** | Grant access to PL/SQL procedures instead of underlying tables. |
| **6. Error Handling** | Use EXCEPTION blocks to catch and manage errors gracefully. |
| **7. Reusability** | Write once, use many times — code blocks can be reused in different places. |