

Stored procedure SQL:

A stored procedure in SQL is a precompiled and pre-defined collection of one or more SQL statements that are stored in a database management system (DBMS) and can be executed as a single unit. Stored procedures are often used to encapsulate and manage a set of SQL statements that perform a specific task or operation. They offer several advantages, including:

1. **Reusability:** Stored procedures can be reused in multiple parts of an application or by different applications, reducing code duplication and promoting maintainability.
2. **Security:** You can grant or restrict access to stored procedures, allowing you to control who can execute specific database operations.
3. **Performance:** Stored procedures are precompiled and cached, which can improve query performance and reduce the overhead of parsing and optimizing SQL statements each time they are executed.
4. **Maintainability:** Database administrators and developers can modify stored procedures without changing the application code, making it easier to adapt to changes in business logic or database schema.
5. **Transaction control:** Stored procedures can be used to group multiple SQL statements into a single transaction, ensuring data consistency and integrity.

Here's a basic example of a stored procedure in SQL:

```
CREATE PROCEDURE GetEmployeeDetails (@EmployeeID INT)
```

```
AS
```

```
BEGIN
```

```
    SELECT FirstName, LastName, Department
```

```
    FROM Employees
```

```
    WHERE EmployeeID = @EmployeeID;
```

```
END;
```

In this example, the **GetEmployeeDetails** stored procedure takes an input parameter **@EmployeeID** and retrieves employee details from the "Employees" table based on that ID. To execute this stored procedure, you would typically use an SQL command like this:

```
EXEC GetEmployeeDetails @EmployeeID = 123;
```