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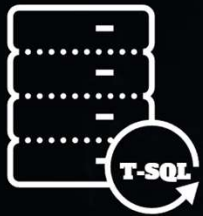
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## Database Level 2 Concepts & T-SQL

# Introduction To Variables in T-SQL

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# What is Variable?

- Variables in T-SQL are objects that can hold a single data value of a specific type.
- They are used to store data temporarily during the execution of code.

# Declaring Variables

- Syntax: `DECLARE @VariableName DataType;`
- Example: `DECLARE @EmployeeName VARCHAR(50);`
- Here, `@EmployeeName` is a variable of the type `VARCHAR` (a string data type) with a maximum length of 50 characters.

# Assigning Values to Variables

You can set a value to a declared variable using the SET or SELECT statement.

- Using SET: `SET @EmployeeName = 'John Doe';`
- Using SELECT: `SELECT @EmployeeName = 'John Doe';`



# Using Variables

- Once declared and assigned, you can use variables in your T-SQL code wherever you might use literals or expressions.
- Example in a query:

```
SELECT * FROM Employees WHERE Name =  
@EmployeeName;
```

# Variable Scope

- T-SQL variables are local to the batch, stored procedure, or trigger in which they are declared.
- They cease to exist once the batch or procedure completes.



# Data Types

- T-SQL supports various data types for variables, including but not limited to:
  - Integer types (INT, SMALLINT, BIGINT)
  - Decimal types (DECIMAL, NUMERIC)
  - Character types (CHAR, VARCHAR)
  - Date and Time types (DATE, DATETIME)

# Special Variables

- @@IDENTITY: Contains the last-inserted identity value.
- @@ROWCOUNT: Contains the number of rows affected by the last statement.

# Best Practices

- Always initialize variables.
- Choose appropriate data types to avoid unnecessary resource consumption.
- Use descriptive names for readability.

# Conclusion

- Variables in T-SQL are essential for writing dynamic and flexible queries.
- They enhance the readability and maintainability of the code by avoiding hard-coded values and allow for more complex logic and operations within SQL scripts and stored procedures.



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