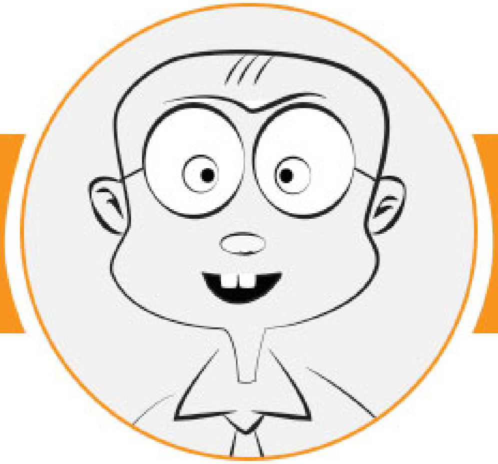

SQL Language Elements

LEARNING GOALS

By the end of this lecture students should be able to:

✓ Understand about Language Elements in SQL Server

✓ Use smoothly Language Elements and apply to real projects

TABLE OF CONTENTS

- Comments
- Identifiers
- Variables
- Control-of-flow

1.COMMENTS

- Indicate user-provided text
  - Double Dash:
    - **Ex**: SELECT * FROM Orders -- This is a comment
  - Block Comment:
    - **Ex**: /*Multi-line comments here*/

2.IDENTIFIERS

- **The database object name is referred to as its identifier.**
  - ✓ An object identifier is created when the object is defined
  - ✓ The identifier is used to reference the object
- **There are 2 types of Identifiers:**
  - ✓ *Regular Identifiers:*
    - Example: Orders, Customers, Employee…
  - ✓ *Delimited Identifiers:* Are enclosed in double quotation marks (") or brackets ([ ])
    - [My Table]
    - [1Person]

✓*For Example*:

```
Select * From [My Table]
Where [Order]=40
```

3.VARIABLES

- Declare a variable
  - ✓ Must be DECLARE and start with @ symbol

```
DECLARE @limit money
DECLARE @min_range int, @hi_range int
```

- Assign a value into a variable using SET

```
SET @min_range = 0, @hi_range = 100
SET @limit = $10
```

- Assign a value into a variable using SELECT

```
SELECT @price = price FROM titles
WHERE  title_id = 'PC2091'
```

SQL LANGUAGE ELEMENTS

- **Variables Demo**

4.CONTROL-OF-FLOW

- **The T-SQL control-of-flow language keywords are:**
  - ✓ BEGIN…END
  - ✓ IF…ELSE
  - ✓ CASE … WHEN
  - ✓ TRY…CATCH
  - ✓ WHILE
  - ✓ BREAK / CONTINUE
  - ✓ GOTO
  - ✓ RETURN

4.1 CONTROL-OF-FLOW/BEGIN…END

BEGIN…END

- ✓ Define a statement block
- ✓ Other Programming Languages:
  - C#, Java, C: **{...}**
  - Pascal, Delphi: BEGIN ... END

4.2 CONTROL-OF-FLOW/IF…ELSE

IF…ELSE

- ✓ Define conditional and, optionally, alternate execution when a condition is false
- ✓ **Syntax:**

```
IF Boolean_expression
            SQL_statement|block_of_statements
[ELSE
            SQL_statement|block_of_statements]
```

CONTROL-OF-FLOW

- **IF…ELSE Demo**

CONTROL-OF-FLOW

CASE … WHEN

- ✓ Evaluate a list of conditions and returns one of multiple possible result expressions
- ✓ **Syntax:**

```
CASE input_expression
  WHEN when_expression1 THEN result_expression1
  WHEN when_expression2 THEN result_expression2
  …
  ELSE else_result_expression
END
```

CONTROL-OF-FLOW

- **CASE … WHEN Demo**

CONTROL-OF-FLOW

TRY… CATCH

- ✓ Provide error handling for T-SQL that is similar to the exception handling in the C# / Java
- ✓ **Syntax:**

```
BEGIN TRY
        { sql_statement | statement_block }
END TRY
BEGIN CATCH
        [ { sql_statement | statement_block } ]
END CATCH
```

CONTROL-OF-FLOW

- **TRY… CATCH Demo**

CONTROL-OF-FLOW

WHILE

- ✓ Set a condition for the repeated execution of an statement block
- ✓ The statements are executed repeatedly as long as the specified condition is true
- ✓ The execution of statements in the WHILE loop can be controlled from inside the loop with the BREAK and CONTINUE keywords
- ✓ **Syntax**

```
WHILE Boolean_expression
        { sql_statement | statement_block | BREAK | CONTINUE }
```

CONTROL-OF-FLOW

- **WHILE Demo**

CONTROL-OF-FLOW

- **GOTO**
  - ✓ Alter the flow of execution to a label. The Transact-SQL statement or statements that follow **GOTO** are skipped and processing continues at the label
  - ✓ **Syntax:**

```
--Define the label
label :
--Alter the execution:
GOTO label
```

CONTROL-OF-FLOW

- **GOTO Demo**

CONTROL-OF-FLOW

- **RETURN**
  - ✓ Exit unconditionally from a query or procedure
  - ✓ This will be discussed more details in Stored Procedure section.
  - ✓ **Syntax**

```
RETURN [ integer_expression ]
```

Quiz!

Now let's check how you understand the lecture!

There are 7 questions below. Click NEXT button to start!

Now let's check how you understand the lecture!

Quiz!

There are 7 questions below.

*Click **NEXT** button to start!*

SUMMARY

- Comments
- Identifiers
- Variables
- Control-of-flow

EXIT COURSE

THANK YOU

You have completed "**Lecture _04" course.**

Click EXIT button to exit course and discover the next Lecture "**Lecture_05".**

EXIT