

JOBSHEET

Basis Data Lanjut



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Class 2I / 01

STUDY PROGRAM D-IV TEKNIK INFORMATIKA
INFORMATION TECHNOLOGY MAJOR
POLITEKNIK NEGERI MALANG

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1.

```
-- Check the data
SELECT empid, firstname, mgrid FROM HR.Employees;
GO

-- How can we change the mgrid of certain employee?? Use UPDATE
UPDATE HR.Employees SET mgrid = 7 WHERE empid = 8;
GO

ALTER PROCEDURE HR.ChangeMgr (@EmployeeId AS INT, @NewMgrId AS INT)
BEGIN
    -- Make sure that the @EmployeeID exists
    DECLARE @EmpName AS VARCHAR(50) = (SELECT firstname FROM HR.Employees WHERE empid = @EmployeeId)
    -- Also, make sure that the @NewMgrID exists
    DECLARE @MgrName AS VARCHAR(50) = (SELECT firstname FROM HR.Employees WHERE empid = @NewMgrId)
```

95 %

Results Messages

	empid	firstname	mgrid
1	1	Sara	NULL
2	2	Don	1
3	3	Judy	2
4	4	Yael	3
5	5	Sven	2
6	6	Paul	5
7	7	Russell	5
8	8	Maria	3
9	9	Zoya	5

2.

```
-- How can we change the mgrid of certain employee?? Use UPDATE statement
UPDATE HR.Employees SET mgrid = 7 WHERE empid = 8;
GO

ALTER PROCEDURE HR.ChangeMgr (@EmployeeId AS INT, @NewMgrID AS INT, @Result AS INT)
BEGIN
    -- Make sure that the @EmployeeID exists
    DECLARE @EmpName AS VARCHAR(50) = (SELECT firstname FROM HR.Employees WHERE empid = @EmployeeId)
    -- Also, make sure that the @NewMgrID exists
    DECLARE @MgrName AS VARCHAR(50) = (SELECT firstname FROM HR.Employees WHERE empid = @NewMgrID)
    -- If both exists, do the update
    IF @EmpName IS NOT NULL AND @MgrName IS NOT NULL
    BEGIN
        UPDATE HR.Employees SET mgrid = @NewMgrID WHERE empid = @EmployeeId
    END
END
```

95 %

Messages

(1 row affected)

Completion time: 2024-12-10T23:42:44.4264392+07:00

Invalid object name 'HR.ChangeMgr'.

```

ALTER PROCEDURE HR.ChangeMgr (@EmployeeId AS INT, @NewMgrID AS INT, @Result AS VARCHAR(10) OUTPUT) AS
BEGIN
    -- Make sure that the @EmployeeId exists
    DECLARE @EmpName AS VARCHAR(50) = (SELECT firstname FROM HR.Employees WHERE empid = @EmployeeId);
    -- Also, make sure that the @NewMgrID exists
    DECLARE @MgrName AS VARCHAR(50) = (SELECT firstname FROM HR.Employees WHERE empid = @NewMgrID);
    -- If both exists, do the update
    IF @EmpName IS NOT NULL AND @MgrName IS NOT NULL
    BEGIN
        UPDATE HR.Employees SET mgrid = @NewMgrID WHERE empid = @EmployeeId;
        -- RETURN 'success'; -- This will give error
        SET @Result = 'success';
    END
    ELSE
        -- RETURN 'failed'; -- This also error
        SET @Result = 'failed';
    END
END

```

95 %

Messages

Msg 208, Level 16, State 6, Procedure ChangeMgr, Line 1 [Batch Start Line 14]
Invalid object name 'HR.ChangeMgr'.

Completion time: 2024-12-10T23:44:39.7955855+07:00

3.

```

DECLARE @CanChange AS VARCHAR(255);
EXEC HR.ChangeMgr 8, 5, @CanChange OUTPUT;
SELECT @CanChange;
GO

-- ERROR HANDLING
-- To understand what happened when a LOGICAL ERROR happened, we
-- To create our own custom error message:
EXEC sp_addmessage
    @msgnum = 50005, -- This must be > 50k
    @severity = 1,
    @msgtext = '[WARNING] This employee or new manager does not

```

95 %

Messages

Commands completed successfully.

Completion time: 2024-12-10T23:45:41.6484025+07:00

4.

5.

```

EXEC HR.ChangeMgr 8, 5, @CanChange OUTPUT;
SELECT @CanChange;
GO

-- ERROR HANDLING
-- To understand what happened when a LOGICAL ERROR ha
-- To create our own custom error message:
EXEC sp_addmessage
    @msgnum = 50005, -- This must be > 50k
    @severity = 1,
    @msgtext = '[WARNING] This employee or new manager

-- Now show it!
RAISERROR(
    50005,
    16, -- Between 1-24; It is categorized into "inform

```

95 %

Messages

Msg 137, Level 15, State 2, Line 36
Must declare the scalar variable "@CanChange".

Completion time: 2024-12-10T23:46:26.8773046+07:00

```

EXEC sp_addmessage
    @msgnum = 50005, -- This must be > 50k
    @severity = 1,
    @msgtext = '[WARNING] This employee or new manager does not exists!';

-- Now show it!
RAISERROR(
    50005,
    16, -- Between 1-24; It is categorized into "information", "error", "critical error"
);

```

95 %

Messages

Commands completed successfully.

Completion time: 2024-12-10T23:48:06.9336572+07:00

6.

```

-- Now show it!
RAISERROR(
    50005,
    16, -- Between 1-24; It is categorized into "information", "error", "critical error"
    1
);

-- How to use it in a stored procedure
GO

ALTER PROCEDURE HR.ChangeMgr_v2 (@EmployeeId AS INT, @NewMgrID AS INT) AS
BEGIN
    DECLARE @EmpName AS VARCHAR(50) = (SELECT firstname FROM HR.Employees WHERE empid = @EmployeeId);
    DECLARE @MgrName AS VARCHAR(50) = (SELECT firstname FROM HR.Employees WHERE empid = @NewMgrID);
    IF @EmpName IS NOT NULL AND @MgrName IS NOT NULL
        UPDATE HR.Employees SET mgrid = @NewMgrID WHERE empid = @EmployeeId;
    ELSE
        RAISERROR(50005, 16, 1);
END
GO

```

95 %

Messages

Msg 50005, Level 16, State 1, Line 50
[WARNING] This employee or new manager does not exists!

Completion time: 2024-12-10T23:49:32.6216195+07:00

7.

8.

```

ALTER PROCEDURE HR.ChangeMgr_v2 (@EmployeeId AS INT, @NewMgrID AS INT) AS
BEGIN
    DECLARE @EmpName AS VARCHAR(50) = (SELECT firstname FROM HR.Employees WHERE empid = @EmployeeId);
    DECLARE @MgrName AS VARCHAR(50) = (SELECT firstname FROM HR.Employees WHERE empid = @NewMgrID);
    IF @EmpName IS NOT NULL AND @MgrName IS NOT NULL
        UPDATE HR.Employees SET mgrid = @NewMgrID WHERE empid = @EmployeeId;
    ELSE
        RAISERROR(50005, 16, 1);
END
GO

-- What happened if I put a wrong employee id?
EXEC HR.ChangeMgr_v2 @EmployeeID = 99, @NewMgrId = 1;

-- Dynamic SQL
-- It is actually a standard SQL syntax that is written in the form of ordinary string.

```

95 %

Messages

Msg 208, Level 16, State 6, Procedure ChangeMgr_v2, Line 1 [Batch Start Line 58]
Invalid object name 'HR.ChangeMgr_v2'.

Completion time: 2024-12-10T23:50:24.1458028+07:00

```
-- What happened if I put a wrong employee id?
EXEC HR.ChangeMgr_v2 @EmployeeID = 99, @NewMgrId = 1;

-- Dynamic SQL
-- It is actually a standard SQL syntax that is written in the form of ord:
-- It means to be executed by any other script.
DECLARE @sql AS NVARCHAR(MAX) = 'SELECT * FROM HR.Employees'; -- This just
-- Execute it using:
EXEC sp_executesql @sql;
GO
```

95 %

Messages

Msg 2812, Level 16, State 62, Line 72
Could not find stored procedure 'HR.ChangeMgr_v2'.

Completion time: 2024-12-10T23:50:51.6902313+07:00

9.

10.

```
-- Dynamic SQL
-- It is actually a standard SQL syntax that is written in the form of ordinary string.
-- It means to be executed by any other script.
DECLARE @sql AS NVARCHAR(MAX) = 'SELECT * FROM HR.Employees'; -- This just like ordinary string 'ABC';
-- Execute it using:
EXEC sp_executesql @sql;
GO

-- Example: Create a SP to be able to execute SELECT to any table given by user.
CREATE PROCEDURE sp_exec @TableName AS VARCHAR(50) AS
BEGIN
    DECLARE @sql AS NVARCHAR(MAX) = ('SELECT * FROM ' + @TableName);
    EXEC sp_executesql @sql;
END

-- Call the SP
```

95 %

Messages

Commands completed successfully.

Completion time: 2024-12-10T23:52:41.6648031+07:00

11.

```
-- Dynamic SQL
-- It is actually a standard SQL syntax that is written in the form of ordinary string.
-- It means to be executed by any other script.
DECLARE @sql AS NVARCHAR(MAX) = 'SELECT * FROM HR.Employees'; -- This just like ordinary string 'ABC';
-- Execute it using:
EXEC sp_executesql @sql;
GO

-- Example: Create a SP to be able to execute SELECT to any table given by user.
CREATE PROCEDURE sp_exec @TableName AS VARCHAR(50) AS
BEGIN
    DECLARE @sql AS NVARCHAR(MAX) = ('SELECT * FROM ' + @TableName);
    EXEC sp_executesql @sql;
END

-- Call the SP
```

95 %

Messages

Commands completed successfully.

Completion time: 2024-12-10T23:52:41.6648031+07:00

12.

```

-- Dynamic SQL
-- It is actually a standard SQL syntax that is written in the form of ordinary string.
-- It means to be executed by any other script.
DECLARE @sql AS NVARCHAR(MAX) = 'SELECT * FROM HR.Employees'; -- This just like ordinary string 'ABC';

-- Execute it using:
EXEC sp_executesql @sql;
GO

-- Example: Create a SP to be able to execute SELECT to any table given by user.
CREATE PROCEDURE sp_exec @TableName AS VARCHAR(50) AS
BEGIN
    DECLARE @sql AS NVARCHAR(MAX) = ('SELECT * FROM ' + @TableName);
    EXEC sp_executesql @sql;
END

-- Call the SP

```

empid	lastname	firstname	title	titleofcourtesy	birthdate	hiredate	address	city	region	postalcode	country	phone	mgrid
1	Davis	Sara	CEO	Ms	1958-12-08 00:00:00.000	2002-05-01 00:00:00.000	7890 - 20th Ave. E., Apt. 2A	Seattle	WA	10003	USA	(206) 555-0101	NULL
2	Funk	Don	Vice President, Sales	Dr.	1962-02-19 00:00:00.000	2002-08-14 00:00:00.000	9012 W. Capital Way	Tacoma	WA	10001	USA	(206) 555-0100	1
3	Lew	Judy	Sales Manager	Ms	1973-08-30 00:00:00.000	2002-04-01 00:00:00.000	2345 Moss Bay Blvd.	Kirkland	WA	10007	USA	(206) 555-0103	2
4	Peled	Yael	Sales Representative	Mrs.	1947-09-19 00:00:00.000	2003-05-03 00:00:00.000	5678 Old Redmond Rd.	Redmond	WA	10009	USA	(206) 555-0104	3
5	Buck	Swen	Sales Manager	Mr.	1965-03-04 00:00:00.000	2003-10-17 00:00:00.000	8901 Garrett Hill	London	NULL	10004	UK	(71) 234-5678	2
6	Suurs	Paul	Sales Representative	Mr.	1973-07-02 00:00:00.000	2003-10-17 00:00:00.000	3456 Coventry House, Miner Rd.	London	NULL	10005	UK	(71) 345-6789	5
7	King	Russell	Sales Representative	Mr.	1970-05-29 00:00:00.000	2004-01-02 00:00:00.000	6789 Edgemoor Hollow, Winchester Way	London	NULL	10002	UK	(71) 123-4567	5
8	Cameron	Maria	Sales Representative	Ms	1968-01-09 00:00:00.000	2004-03-05 00:00:00.000	4567 - 11th Ave. N.E.	Seattle	WA	10006	USA	(206) 555-0102	7
9	Dolgovatova	Zoya	Sales Representative	Ms	1976-01-27 00:00:00.000	2004-11-15 00:00:00.000	1234 Houndstooth Rd.	London	NULL	10008	UK	(71) 456-7890	5

13.

```

-- Example: Create a SP to be able to execute SELECT to any table given by user.
CREATE PROCEDURE sp_exec @TableName AS VARCHAR(50) AS
BEGIN
    DECLARE @sql AS NVARCHAR(MAX) = ('SELECT * FROM ' + @TableName);
    EXEC sp_executesql @sql;
END

-- Call the SP
EXEC sp_exec 'HR.Employees';

-- VARCHAR: It can only handles characters in ANSI format. Alphanumeric, and standard WESTERN
-- Any character in ENGLISH/US Keyboard layout

-- NVARCHAR: Unicode or UTF-8 characters: Japanese, Chinese, Thai, Arabic, Ethiopia.. etc

```

Msg 2714, Level 16, State 3, Procedure sp_exec, Line 1 [Batch Start Line 84]
There is already an object named 'sp_exec' in the database.

Completion time: 2024-12-10T23:55:41.1180995+07:00

```
-- VARCHAR: It can only handle  
-- Any character in ENGLISH/  
-- NVARCHAR: Unicode or UTF-8
```

Results

```
(9 rows affected)
```

```
(9 rows affected)
```

```
(9 rows affected)
```

```
(9 rows affected)
```

```
(9 rows affected)
```

(9 rows affected)

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(9 rows affected)
```

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(9 rows affected)
```

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(9 rows affected)
```