

## 1. SCD Type 0

```
CREATE PROCEDURE Update_SCD_Type0 (  
    @ID INT,  
    @Name VARCHAR(100)  
)  
AS  
BEGIN  
    IF NOT EXISTS (SELECT 1 FROM DimensionTable WHERE ID = @ID)  
    BEGIN  
        INSERT INTO DimensionTable (ID, Name)  
        VALUES (@ID, @Name)  
    END  
    -- else: do nothing (values are fixed)  
END
```

## 2. SCD Type 1

```
-- SCD Type 1: Update the existing record (overwrite)  
CREATE PROCEDURE Update_SCD_Type1 (  
    @ID INT,  
    @Name VARCHAR(100)  
)  
AS  
BEGIN  
    IF EXISTS (SELECT 1 FROM DimensionTable WHERE ID = @ID)  
    BEGIN  
        UPDATE DimensionTable  
        SET Name = @Name  
        WHERE ID = @ID  
    END  
    ELSE  
    BEGIN
```

```
        INSERT INTO DimensionTable (ID, Name)
        VALUES (@ID, @Name)
    END
END
```

### 3. SCD Type 2

```
CREATE PROCEDURE Update_SCD_Type2 (
    @ID INT,
    @Name VARCHAR(100)
)
AS
BEGIN
    DECLARE @CurrentDate DATETIME = GETDATE()

    IF EXISTS (SELECT 1 FROM DimensionTable WHERE ID = @ID AND IsCurrent = 1)
    BEGIN
        UPDATE DimensionTable
        SET EndDate = @CurrentDate, IsCurrent = 0
        WHERE ID = @ID AND IsCurrent = 1

        INSERT INTO DimensionTable (ID, Name, StartDate, EndDate, IsCurrent)
        VALUES (@ID, @Name, @CurrentDate, NULL, 1)
    END
    ELSE
    BEGIN
        INSERT INTO DimensionTable (ID, Name, StartDate, EndDate, IsCurrent)
        VALUES (@ID, @Name, @CurrentDate, NULL, 1)
    END
END
```

#### 4. SCD Type 3

```
CREATE PROCEDURE Update_SCD_Type3 (  
    @ID INT,  
    @Name VARCHAR(100)  
)  
AS  
BEGIN  
    IF EXISTS (SELECT 1 FROM DimensionTable WHERE ID = @ID)  
    BEGIN  
        DECLARE @OldName VARCHAR(100)  
  
        SELECT @OldName = CurrentName FROM DimensionTable WHERE ID = @ID  
  
        UPDATE DimensionTable  
        SET CurrentName = @Name,  
            PreviousName = @OldName  
        WHERE ID = @ID  
    END  
    ELSE  
    BEGIN  
        INSERT INTO DimensionTable (ID, CurrentName, PreviousName)  
        VALUES (@ID, @Name, NULL)  
    END  
END
```

#### 5. SCD Type 4

-- DimensionTable is main; DimensionHistory stores history

```
CREATE PROCEDURE Update_SCD_Type4 (  
    @ID INT,  
    @Name VARCHAR(100)  
)
```

```

AS

BEGIN

    DECLARE @CurrentDate DATETIME = GETDATE()

    IF EXISTS (SELECT 1 FROM DimensionTable WHERE ID = @ID)
    BEGIN
        INSERT INTO DimensionHistory (ID, Name, ChangeDate)
        SELECT ID, Name, @CurrentDate FROM DimensionTable WHERE ID = @ID

        UPDATE DimensionTable
        SET Name = @Name
        WHERE ID = @ID
    END
    ELSE
    BEGIN
        INSERT INTO DimensionTable (ID, Name)
        VALUES (@ID, @Name)
    END
END

```

## 6. SCD Type 6

-- Assumes: ID, CurrentName, PreviousName, StartDate, EndDate, IsCurrent

```

CREATE PROCEDURE Update_SCD_Type6 (
    @ID INT,
    @Name VARCHAR(100)
)
AS
BEGIN
    DECLARE @CurrentDate DATETIME = GETDATE()

    IF EXISTS (SELECT 1 FROM DimensionTable WHERE ID = @ID AND IsCurrent = 1)

```

BEGIN

DECLARE @OldName VARCHAR(100)

SELECT @OldName = CurrentName FROM DimensionTable WHERE ID = @ID AND IsCurrent = 1

UPDATE DimensionTable

SET EndDate = @CurrentDate,

IsCurrent = 0

WHERE ID = @ID AND IsCurrent = 1

INSERT INTO DimensionTable (ID, CurrentName, PreviousName, StartDate, EndDate, IsCurrent)

VALUES (@ID, @Name, @OldName, @CurrentDate, NULL, 1)

END

ELSE

BEGIN

INSERT INTO DimensionTable (ID, CurrentName, PreviousName, StartDate, EndDate, IsCurrent)

VALUES (@ID, @Name, NULL, @CurrentDate, NULL, 1)

END

END