UNDERSTANDING CASE EXPRESSION IN SQL SERVER WITH EXAMPLE

Sometimes, you required to fetch or modify the records based on some conditions. In this case, you may use cursor or loop for modify your records. In this situation Case expression is best alternative for Cursor/looping and also provides better performance.

You can use CASE expressions anywhere in the SQL Query like CASE expressions can be used with in SELECT statement, WHERE clauses, Order by clause, HAVING clauses, INSERT, UPDATE and DELETE statements.

Format of CASE expression

The CASE expression has following two formats:

1. Simple CASE expression

This compares an expression to a set of simple expressions to find the result. This expression compares an expression to the expression in each WHEN clause for equivalency. If the expression with in the WHEN clause is matched, the expression in the THEN clause will be returned.

Syntax

1. CASE expression
2. WHEN expression1 THEN Result1
3. WHEN expression2 THEN Result2
4. ELSE ResultN
5. END

2. Searched CASE expressions

This expression evaluates a set of Boolean expressions to find the result. This expression allows comparison operators, and logical operators AND/OR with in each Boolean expression.

Syntax

1. CASE
2. WHEN Boolean_expression1 THEN Result1
3. WHEN Boolean_expression2 THEN Result2
4. ELSE ResultN
5. END

CASE Expression Example
CREATE TABLE dbo.Customer
(
    CustID INT IDENTITY PRIMARY KEY,
    FirstName VARCHAR(40) NOT NULL,
    LastName VARCHAR(40) NOT NULL,
    StateCode VARCHAR(20) NOT NULL,
    PayRate money NOT NULL DEFAULT 0.00,
    Gender VARCHAR(1) NOT NULL,
)
GO

INSERT INTO dbo.Customer (FirstName, LastName, StateCode, PayRate, Gender)
VALUES ('Tejendra', 'Kumar', 'UP', 150.00, 'M')

INSERT INTO dbo.Customer (FirstName, LastName, StateCode, PayRate, Gender)
VALUES ('Jolly', 'Kapoor', 'MP', 50.00, 'F')

INSERT INTO dbo.Customer (FirstName, LastName, StateCode, PayRate, Gender)
VALUES ('Pavan', 'Kumar', 'MP', 200.00, 'M')

INSERT INTO dbo.Customer (FirstName, LastName, StateCode, PayRate, Gender)
VALUES ('Boby', 'Sharma', 'DL', 180.00, 'F')

INSERT INTO dbo.Customer (FirstName, LastName, StateCode, PayRate, Gender)
VALUES ('Asif', 'Khan', 'DL', 210.00, 'M')
GO

SELECT * from Customer
SELECT statement with CASE expressions

1. -- Simple CASE expression:
2. SELECT FirstName, State=(CASE StateCode
3.     WHEN 'MP' THEN 'Madhya Pradesh'
4.     WHEN 'UP' THEN 'Uttar Pradesh'
5.     WHEN 'DL' THEN 'Delhi'
6.     ELSE NULL
7.     END), PayRate
8. FROM dbo.Customer

10. -- Searched CASE expression:
11. SELECT FirstName, State=(CASE
12.     WHEN StateCode = 'MP' THEN 'Madhya Pradesh'
13.     WHEN StateCode = 'UP' THEN 'Uttar Pradesh'
14.     WHEN StateCode = 'DL' THEN 'Delhi'
15.     ELSE NULL
16.     END), PayRate
17. FROM dbo.Customer

Update statement with CASE expression

1. -- Simple CASE expression:
2. UPDATE Customer
3. SET StateCode = CASE StateCode
4. WHEN 'MP' THEN 'Madhya Pradesh'
5. WHEN 'UP' THEN 'Uttar Pradesh'
6. WHEN 'DL' THEN 'Delhi'
7. ELSE NULL
8. END
9.
10. -- Simple CASE expression:
11. UPDATE Customer
12. SET StateCode = CASE
13. WHEN StateCode = 'MP' THEN 'Madhya Pradesh'
14. WHEN StateCode = 'UP' THEN 'Uttar Pradesh'
15. WHEN StateCode = 'DL' THEN 'Delhi'
16. ELSE NULL
17. END

<table>
<thead>
<tr>
<th>CustID</th>
<th>FirstName</th>
<th>LastName</th>
<th>StateCode</th>
<th>PayRate</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tejendra</td>
<td>Kumar</td>
<td>Uttar Pradesh</td>
<td>150.00</td>
<td>M</td>
</tr>
<tr>
<td>2</td>
<td>Jolly</td>
<td>Kapoor</td>
<td>Madhya Pradesh</td>
<td>50.00</td>
<td>F</td>
</tr>
<tr>
<td>3</td>
<td>Pavan</td>
<td>Kumar</td>
<td>Madhya Pradesh</td>
<td>200.00</td>
<td>M</td>
</tr>
<tr>
<td>4</td>
<td>Bobby</td>
<td>Sharma</td>
<td>Delhi</td>
<td>180.00</td>
<td>M</td>
</tr>
<tr>
<td>5</td>
<td>Asif</td>
<td>Khan</td>
<td>Delhi</td>
<td>210.00</td>
<td>M</td>
</tr>
</tbody>
</table>

ORDER BY clause with CASE expressions

1. -- Simple CASE expression:
2. SELECT * FROM dbo.Customer
3. ORDER BY
4. CASE Gender WHEN 'M' THEN FirstName END Desc,
5. CASE Gender WHEN 'F' THEN LastName END ASC
6.
7. -- Searched CASE expression:
8. SELECT * FROM dbo.Customer
9. ORDER BY
10. CASE WHEN Gender='M' THEN FirstName END Desc,
11. CASE WHEN Gender='F' THEN LastName END ASC

Having Clause with CASE expression

1. -- Simple CASE expression:
   2. SELECT FirstName, StateCode, Gender, Total=MAX(PayRate)
   3. FROM dbo.Customer
   4. GROUP BY StateCode, Gender, FirstName
   5. HAVING (MAX(CASE WHEN Gender = 'M'
   6.       THEN PayRate
   7.       ELSE NULL END) > 180.00
   8.     OR MAX(CASE WHEN Gender = 'F'
   9.       THEN PayRate
  10.     ELSE NULL END) > 170.00)
  11.
  12. -- Searched CASE expression:
  13. SELECT FirstName, StateCode, Gender, Total=MAX(PayRate)
  14. FROM dbo.Customer
  15. GROUP BY StateCode, Gender, FirstName
  16. HAVING (MAX(CASE WHEN Gender = 'M'
  17.       THEN PayRate
  18.       ELSE NULL END) > 180.00
  19.     OR MAX(CASE WHEN Gender = 'F'
  20.       THEN PayRate
  21.     ELSE NULL END) > 170.00)