

# 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

```
1. CREATE TABLE dbo.Customer
2. (
3. CustID INT IDENTITY PRIMARY KEY,
4. FirstName VARCHAR(40) NOT NULL,
5. LastName VARCHAR(40) NOT NULL,
6. StateCode VARCHAR(20) NOT NULL,
7. PayRate money NOT NULL DEFAULT 0.00,
8. Gender VARCHAR(1) NOT NULL,
9. )
10. GO
11.
12. INSERT INTO      dbo.Customer      (FirstName,      LastName,      StateCode,
      PayRate,Gender)
13. VALUES ('Tejendra', 'Kumar', 'UP', 150.00, 'M')
14.
15. INSERT INTO      dbo.Customer      (FirstName,      LastName,      StateCode,
      PayRate,Gender)
16. VALUES ('Jolly', 'Kapoor', 'MP', 50.00 , 'F')
17.
18. INSERT INTO      dbo.Customer      (FirstName,      LastName,      StateCode,
      PayRate,Gender)
19. VALUES ('Pavan', 'Kumar', 'MP', 200.00 , 'M')
20.
21. INSERT INTO      dbo.Customer      (FirstName,      LastName,      StateCode,
      PayRate,Gender)
22. VALUES ('Boby', 'Sharma', 'DL', 180.00 , 'F')
23.
24. INSERT INTO      dbo.Customer      (FirstName,      LastName,      StateCode,
      PayRate,Gender)
25. VALUES ('Asif', 'Khan', 'DL', 210.00 , 'M')
26. GO
27.
28. SELECT * from Customer
```

	CustID	FirstName	LastName	StateCode	PayRate	Gender
1	1	Tejendra	Kumar	UP	150.00	M
2	2	Jolly	Kapoor	MP	50.00	F
3	3	Pavan	Kumar	MP	200.00	M
4	4	Boby	Shama	DL	180.00	F
5	5	Asif	Khan	DL	210.00	M

## 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
9.
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

```

	FirstName	State	PayRate
1	Tejendra	Uttar Pradesh	150.00
2	Jolly	Madhya Pradesh	50.00
3	Pavan	Madhya Pradesh	200.00
4	Boby	Delhi	180.00
5	Asif	Delhi	210.00

## 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

```

	CustID	FirstName	LastName	StateCode	PayRate	Gender
1	1	Tejendra	Kumar	Uttar Pradesh	150.00	M
2	2	Jolly	Kapoor	Madhya Pradesh	50.00	F
3	3	Pavan	Kumar	Madhya Pradesh	200.00	M
4	4	Boby	Sharma	Delhi	180.00	F
5	5	Asif	Khan	Delhi	210.00	M

## 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
```

	CustID	FirstName	LastName	StateCode	PayRate	Gender
1	1	Tejendra	Kumar	UP	150.00	M
2	3	Pavan	Kumar	MP	200.00	M
3	5	Asif	Khan	DL	210.00	M
4	2	Jolly	Kapoor	MP	50.00	F
5	4	Boby	Shama	DL	180.00	F

## 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 Gender WHEN 'M'
6. THEN PayRate
7. ELSE NULL END) > 180.00
8. OR MAX(CASE Gender WHEN '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)
```

	FirstName	StateCode	Gender	Total
1	Boby	Delhi	F	180.00
2	Asif	Delhi	M	210.00
3	Pavan	Madhya Pradesh	M	200.00

Source : <http://www.dotnet-tricks.com/Tutorial/sqlserver/1MS1120313-Understanding-Case-Expression-in-SQL-Server-with-Example.html>