

```
/*
    T-SQL Functions and Expressions:
        Basic addition and mathematical expressions
        String manipulation functions and expressions
        Working with Date functions
            Dateadd
            Datediff
            Year / Month
*/
```

```
-- Mathematical Expressions
```

```
SELECT
    UnitPrice,
    UnitPrice + 10 AS Plus10,
    UnitPrice * 2 AS Doubled,
    UnitPrice * OrderQty AS LineTotalCalc,
    LineTotal
FROM
    Sales.SalesOrderDetail;
```

```
-- String manipulation Expressions
```

```
SELECT
    Firstname,
    LEFT(FirstName, 3) AS First3,
    RIGHT(FirstName, 3) AS Last3
FROM
    Person.Person
```

```
SELECT
    Firstname,
    UPPER(FirstName) AS UpperFirst,
    LOWER(FirstName) AS LowerFirst
FROM
    Person.Person
```

```
SELECT
    Firstname,
```

```
    REPLACE(FirstName, 'a', '*') AS ReplaceA
FROM
    Person.Person

SELECT
    LEN(FirstName) AS LengthOfName,
    FirstName
FROM
    Person.Person

-- Date Functions
SELECT GETDATE() AS SystemTime

SELECT
    GETDATE() SystemTime,
    DATEPART(YEAR, GETDATE()) AS SystemYear,
    DATEPART(MONTH, GETDATE()) AS SystemMonth;

SELECT
    GETDATE() SystemTime,
    YEAR(GETDATE()) AS SystemYear,
    MONTH(GETDATE()) AS SystemMonth;

SELECT
    OrderDate,
    YEAR(OrderDate) AS OrderYear,
    MONTH(OrderDate) AS OrderMonth
FROM
    Sales.SalesOrderHeader
ORDER BY
    OrderMonth

-- DATEADD
SELECT
    OrderDate,
    DATEADD(YEAR, -1, OrderDate) AS PreviousYear
FROM
```

Sales.SalesOrderHeader

-- DATEDIFF

SELECT

OrderDate,

DATEDIFF(DAY, OrderDate, ShipDate) AS DaysToShip

FROM

Sales.SalesOrderHeader

-- DATEDIFF

SELECT

OrderDate,

DATEDIFF(MONTH, OrderDate, GETDATE()) AS MonthsSinceOrder

FROM

Sales.SalesOrderHeader

ORDER BY

MonthsSinceOrder