

note

Spaces in table names are bad design

It's generally considered best practice to avoid spaces in table names, but you'll almost certainly encounter design mistakes in databases that you work on.

It's useful to know how to work around these issues, so it's helpful that there are some mistakes in Microsoft's sample database!

Lesson 8: Use the TOP and DISTINCT keywords

The TOP keyword lets you limit your queries to display a certain number of records, while the DISTINCT keyword is used to extract unique values from a list containing duplicate entries.

- 1 Open SSMS and connect to your SQL Server (if you haven't already done this).
- 2 Write a query to extract all records from the *Order Details* table.

The *Order Details* table has a space in its name. If you think back to *Lesson 5: Write your first database query*, you'll remember that names containing spaces must be enclosed in square brackets.

The query should look like this:

```
SELECT *
FROM Northwind.dbo.[Order Details]
```

If you try running this query without the square brackets you will see an error message.

- 3 Modify the query to display the top 10 sales by quantity.

You cannot use the TOP keyword without an ORDER BY statement. To retrieve the 10 sales that had the highest quantity, use the query:

```
SELECT TOP 10 *
FROM Northwind.dbo.[Order Details]
ORDER BY Quantity DESC
```

It's important that the query results are sorted in descending (*DESC*) order so that the highest quantities are shown first. Without the *DESC* keyword the 10 orders with the lowest quantities would be shown first instead, because *ORDER BY* defaults to sorting in ascending order.

- 4 Execute the query.

The top 10 sales with the highest quantity are shown.

	OrderID	ProductID	UnitPrice	Quantity	Discount
1	10764	39	18.00	130	0.1
2	11072	64	33.25	130	0
3	10398	55	19.20	120	0.1
4	10451	55	19.20	120	0.1
5	10515	27	43.90	120	0
6	10595	61	28.50	120	0.25
7	10678	41	9.65	120	0
8	10711	53	32.80	120	0
9	10776	51	53.00	120	0.05
10	10894	75	7.75	120	0.05

- 5 Modify the query to display the top 25 percent of orders.

note**DISTINCT works with all columns in the query**

The **DISTINCT** keyword can be used with a **SELECT** statement that contains multiple columns.

If you use the **DISTINCT** keyword the query will omit any records where all columns are duplicated.

For example, to return a unique list of product IDs and the prices that they have been sold at, you could use the query:

```
SELECT DISTINCT
ProductID, UnitPrice
```

You can specify a percentage as well as a specific number of rows for the **TOP** keyword to return. Modify the query to:

```
SELECT TOP 25 PERCENT *
FROM Northwind.dbo.[Order Details]
ORDER BY Quantity DESC
```

6 Execute the query.

25% of the records in the *Order Details* table are shown, sorted by *Quantity*.

	OrderID	ProductID	UnitPrice	Quantity	Discount
1	10764	39	18.00	130	0.1
2	11072	64	33.25	130	0
3	10776	51	53.00	120	0.05
4	10711	53	32.80	120	0

7 Write a query to extract a unique list of product IDs that have been sold.

1. Execute the following query:

```
SELECT ProductID
FROM Northwind.dbo.[Order Details]
```

The query returns the *ProductID* values from every record in the *Order Details* table.

	ProductID
1	1
2	1
3	1

You can see every *ProductID* that has been sold but you're seeing separate records for each sale, which isn't really what you wanted. The **DISTINCT** keyword will instruct the query to only return unique values.

2. Modify the query to:

```
SELECT DISTINCT ProductID
FROM Northwind.dbo.[Order Details]
```

3. Execute the query.

	ProductID
1	1
2	2
3	3
4	4

A unique list of product IDs is shown. You can see the IDs of all 77 products that have been sold.