

Exercise 1

Write a query that generates five copies of each employee row.



```
1  USE TSQLV4
2
3  SELECT E.empid, E.firstname, E.lastname, N.n
4  FROM HR.Employees E
5       CROSS JOIN dbo.Nums N
6  WHERE n <=5
7  ORDER BY n, empid;
```

(45 rows affected)

Total execution time: 00:00:00.021



	empid	firstname	lastname	n
6	6	Paul	Suurs	1
7	7	Russell	King	1
8	8	Maria	Cameron	1
9	9	Patricia	Doyle	1
10	1	Sara	Davis	2
11	2	Don	Funk	2
12	3	Judy	Lew	2
13	4	Yael	Peled	2
14	5	Sven	Mortensen	2
15	6	Paul	Suurs	2
16	7	Russell	King	2

Exercise 1-2

Proposition: Write a query that returns a row for each employee and day in the range June 12, 2016 through June 16, 2016.

```
[40] 1  USE TSQVLV4
      2  SELECT E.empid, DATEADD (day, D.n -1, CAST('20160612' AS DATE)) AS dt
      3      FROM HR.Employees AS E
      4      CROSS JOIN dbo.Nums AS D
      5  WHERE D.n <=DATEDIFF(day, '20160612', '20160616') + 1 -- + 1 includes the 20160616 within the
      6  ORDER BY empid, dt;
```

(45 rows affected)

Total execution time: 00:00:00.009



	empid	dt
1	1	2016-06-12
2	1	2016-06-13
3	1	2016-06-14
4	1	2016-06-15
5	1	2016-06-16
6	2	2016-06-12
7	2	2016-06-13
8	2	2016-06-14
9	2	2016-06-15
10	2	2016-06-16

Exercise 2

Proposition: Explain what's wrong in the following query and provide a correct alternative.



```
1  USE TSQLV4
2  /*
3  SELECT Customers.CustomerId, Customers.companyname, Orders.orderid, Orders.orderdate
4  FROM Sales.Customers AS C
5  INNER JOIN Sales.Orders AS O
6  ON Customers.custid = Orders.customerid;*/
7
8  -- The alias was not consistent.
9  SELECT C.Custid, C.companyname, O.orderid, O.orderdate
10 FROM Sales.Customers AS C
11     INNER JOIN Sales.Orders AS O
12     ON C.custid = O.custid;
```

(830 rows affected)

Total execution time: 00:00:00.016



	Custid	companyname	orderid	orderdate
1	85	Customer ENQZT	10248	2014-07-04
2	79	Customer FAPSM	10249	2014-07-05
3	34	Customer IBVRG	10250	2014-07-08
4	84	Customer NRCSK	10251	2014-07-08
5	76	Customer SFOGW	10252	2014-07-09
6	34	Customer IBVRG	10253	2014-07-10

Exercise 3

Proposition: Return US customers, and for each customer return the total number of orders and total quantities.



```
1  USE TSQLV4
2
3  SELECT TOP(5) * FROM sales.OrderDetails;
4  SELECT TOP(5) * FROM sales.orders;
5
6  SELECT C.custid, COUNT (DISTINCT O.orderid) AS numorders, SUM(OD.qty) AS totalqty
7  FROM Sales.Customers AS C
8  INNER JOIN Sales.Orders AS O
9  ON C.custid = O.custid
10 INNER JOIN Sales.OrderDetails AS OD
11 ON O.orderid = OD.orderid
12 WHERE C.country = N'USA'
13 GROUP BY C.custid
14 ORDER BY C.custid
```



	custid ▾	numorders ▾	totalqty ▾
1	32	11	345
2	36	5	122
3	43	2	20
4	45	4	181
5	48	8	134
6	55	10	603
7	65	18	1383
8	71	31	4958
9	75	9	327
10	77	4	46
11	78	3	59
12	82	3	89
13	89	14	1063

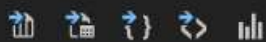
Exercise 4

Proposition: Return customers and their orders, including customers who placed no orders.

```
[43]  1  USE TSQLV4
      2  SELECT C.custid, C.companyname, O.orderid, O.orderdate
      3  FROM Sales.Customers AS C
      4       LEFT OUTER JOIN Sales.Orders AS O
      5       ON C.custid = O.custid
      6  ORDER BY C.custid
      7
```

(832 rows affected)

Total execution time: 00:00:00.016



	custid ▾	companyname ▾	orderid ▾	orderdate ▾
183	21	Customer KIDPX	10386	2014-12-18
184	21	Customer KIDPX	10414	2015-01-14
185	21	Customer KIDPX	10512	2015-04-21
186	21	Customer KIDPX	10650	2015-08-29
187	21	Customer KIDPX	10581	2015-06-26
188	21	Customer KIDPX	10725	2015-10-31
189	22	Customer DTDMM	NULL	NULL
190	23	Customer WVFAF	10763	2015-12-03
191	23	Customer WVFAF	10789	2015-12-22
192	23	Customer WVFAF	10634	2015-08-15

Exercise 5

Proposition: Return customers who placed no orders

```
[44] 1  USE TSQLV4
      2  SELECT C.custid, C.companyname, O.orderid
      3  FROM Sales.Customers AS C
      4       LEFT OUTER JOIN Sales.Orders AS O
      5           ON C.custid = O.custid
      6  WHERE O.orderid is NULL
```

(2 rows affected)

Total execution time: 00:00:00.006



	custid	companyname	orderid
1	22	Customer DTDMN	NULL
2	57	Customer WVAXS	NULL

Exercise 6

Proposition: Return customers with orders placed on Feb 12, 2016 along with their orders.

```
[45] 1  USE TSQLV4
      2  SELECT C.custid, C.companyname, O.orderid, O.orderdate
      3  FROM Sales.Customers AS C
      4       INNER JOIN Sales.Orders AS O
      5           ON C.custid = O.custid
      6  WHERE O.orderdate = '20160212';
```

(3 rows affected)

Total execution time: 00:00:00.013



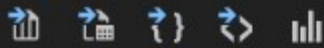
	custid ▾	companyname ▾	orderid ▾	orderdate ▾
1	48	Customer DVFMB	10883	2016-02-12
2	45	Customer QXPPT	10884	2016-02-12
3	76	Customer SFOGW	10885	2016-02-12

Exercise 7 & 8

Proposition: Write a query that returns all customers in the output, but matches them with their respective orders only if they were placed on Feb 12, 2016:



```
1  --Be sure to note that where is a final filter and predicate based on the orderdate is a nonfinal matching candidate. S
2  --The following query is incorrect.
3  USE TSQLV4
4  SELECT C.custid, C.companyname, O.orderid, O.orderdate
5  FROM Sales.Customers AS C
6       LEFT OUTER JOIN Sales.Orders AS O
7           ON C.custid = O.custid
8  WHERE O.orderdate = '20160212'
9       OR O.orderid IS NULL;
10
11 --this query is correct.
12 USE TSQLV4
13 SELECT C.custid, C.companyname, O.orderid, O.orderdate
14 FROM Sales.Customers AS C
15      LEFT OUTER JOIN Sales.Orders AS O
16          ON C.custid = O.custid
17          AND O.orderdate = '20160212'
```



	custid ▾	companyname ▾	orderid ▾	orderdate ▾
1	48	Customer DVFMB	10883	2016-02-12
2	45	Customer QXPPT	10884	2016-02-12
3	76	Customer SFOGW	10885	2016-02-12
4	22	Customer DTDMM	NULL	NULL
5	57	Customer WVAXS	NULL	NULL



	custid ▾	companyname ▾	orderid ▾	orderdate ▾
1	1	Customer NRZBB	NULL	NULL
2	2	Customer MLTDN	NULL	NULL
3	3	Customer KBUDE	NULL	NULL
4	4	Customer HFBZG	NULL	NULL
5	5	Customer HGVLZ	NULL	NULL
6	6	Customer XHXJV	NULL	NULL
7	7	Customer QXVLA	NULL	NULL
8	8	Customer QUHWH	NULL	NULL
9	9	Customer RTXGC	NULL	NULL
10	10	Customer EEALV	NULL	NULL
11	11	Customer UBHAU	NULL	NULL
12	12	Customer PSNMQ	NULL	NULL
13	13	Customer VMLOG	NULL	NULL
14	14	Customer WNMAL	NULL	NULL

Exercise 9

Proposition: Return all customers, and for each return a Yes/No value depending on whether the customer placed orders on Feb 12, 2016

```
[47] 1  USE TSQV4
2  SELECT C.custid, C.companyname, O.orderdate,
3         CASE O.orderdate
4             WHEN '20160212' THEN 'Yes'    --CASE WHEN O.orderid Is not null then 'Yes' ELSE 'NO' END AS Hasordero
5             ELSE 'No'
6         END AS HasOrderOn20160212
7  FROM Sales.Customers AS C
8  LEFT OUTER JOIN Sales.Orders AS O
9      ON C.custid = O.custid
10     AND O.orderdate = '20160212'
```

(91 rows affected)

Total execution time: 00:00:00.015



	custid	companyname	orderdate	HasOrderOn20160212
50	50	Customer JYPSC	NULL	No
51	51	Customer PVDZC	NULL	No
52	52	Customer PZNLA	NULL	No
53	53	Customer GCJSG	NULL	No
54	54	Customer TDKEG	NULL	No
55	55	Customer KZQZT	NULL	No
56	56	Customer QNIVZ	NULL	No
57	57	Customer WVAXS	NULL	No