

From “Chapter 03 - Joins - Exercises”

Run Cancel

Connect Change Connection Select Database

Estimated Plan Enable Actual Plan Enable SQLCMD Export as Notebook

1 -- 1-1

2 -- Write a query that generates 5 copies out of each employee row

3 -- Tables involved: TSQLV4 database, Employees and Nums tables

4

5 USE TSQLV4;

6 GO

7

8 SELECT empid, firstname, lastname, N.n

9 FROM HR.Employees AS E

10 CROSS JOIN dbo.Nums AS N

11 WHERE N.n <= 5

12 ORDER BY n, empid;

13

14 USE Northwinds2022TSQLV7;

15 GO

16

17 SELECT EmployeeId, EmployeeFirstName, EmployeeLastName, N.n

18 FROM HumanResources.Employee AS E

19 CROSS JOIN dbo.Nums AS N

20 WHERE N.n <= 5

21 ORDER BY n, EmployeeId;

22

23

24

25

26

Cell Run all

Kernel SQL

Attach to local docker container 130

Commands completed successfully.

(45 rows affected)

(45 rows affected)

Total execution time: 00:00:00.005

	empid	firstname	lastname	n
3	3	Judy	Lew	1
4	4	Yael	Peled	1
5	5	Sven	Mortensen	1
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
17	8	Maria	Cameron	2
18	9	Patricia	Doyle	2
19	1	Sara	Davis	3
20	2	Don	Funk	3
21	3	Judy	Lew	3
22	4	Yael	Peled	3

	EmployeeId	EmployeeFirstName	EmployeeLastName	n
1	1	Sara	Davis	1
2	2	Don	Funk	1
3	3	Judy	Lew	1
4	4	Yael	Peled	1
5	5	Sven	Mortensen	1
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

(45 rows affected)

(45 rows affected)

Total execution time: 00:00:00.007



	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
11	3	2016-06-12
12	3	2016-06-13
13	3	2016-06-14
14	3	2016-06-15
15	3	2016-06-16
16	4	2016-06-12
17	4	2016-06-13
18	4	2016-06-14
19	4	2016-06-15
20	4	2016-06-16



	EmployeeId	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
11	3	2016-06-12

```
2  -- 1-2 (Optional, Advanced)
3  -- Write a query that returns a row for each employee and day
4  -- in the range June 12, 2016 @ June 16 2016.
5  -- Tables involved: TSQLV4 database, Employees and Nums tables
6
7  USE TSQLV4;
8
9  Select E.empid, DATEADD(day, D.n-1, CAST('20160612' AS DATE)) AS dt
10 FROM HR.Employees AS E
11 | CROSS JOIN dbo.Nums as D
12 WHERE D.n <= DATEDIFF(day, '20160612', '20160616') + 1
13 ORDER BY empid, dt;
14
15 USE Northwinds2022TSQLV7;
16
17 Select E.EmployeeId, DATEADD(day, D.n-1, CAST('20160612' AS DATE)) AS dt
18 FROM HumanResources.Employee AS E
19 | CROSS JOIN dbo.Nums as D
20 WHERE D.n <= DATEDIFF(day, '20160612', '20160616') + 1
21 ORDER BY EmployeeId, dt;
22
23
24
25
```

(830 rows affected)

(830 rows affected)

Total execution time: 00:00:00.015



	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 SF0GW	10252	2014-07-09
6	34	Customer IBVRG	10253	2014-07-10
7	14	Customer WNMAF	10254	2014-07-11
8	68	Customer CCKOT	10255	2014-07-12
9	88	Customer SRQVM	10256	2014-07-15
10	35	Customer UMTLM	10257	2014-07-16
11	20	Customer THHDP	10258	2014-07-17
12	13	Customer VML0G	10259	2014-07-18
13	56	Customer QNIVZ	10260	2014-07-19
14	61	Customer WULWD	10261	2014-07-19
15	65	Customer NYUHS	10262	2014-07-22
16	20	Customer THHDP	10263	2014-07-23
17	24	Customer CYZTN	10264	2014-07-24
18	7	Customer QXVLA	10265	2014-07-25
19	87	Customer ZHYOS	10266	2014-07-26
20	25	Customer A71FN	10267	2014-07-20



	CustomerId	CustomerCompanyName	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 SF0GW	10252	2014-07-09
6	34	Customer IBVRG	10253	2014-07-10
7	14	Customer WNMAF	10254	2014-07-11
8	68	Customer CCKOT	10255	2014-07-12
9	88	Customer SRQVM	10256	2014-07-15
10	35	Customer UMTLM	10257	2014-07-16
11	20	Customer THHDP	10258	2014-07-17
12	13	Customer VML0G	10259	2014-07-18
13	56	Customer QNIVZ	10260	2014-07-19
14	61	Customer WULWD	10261	2014-07-19
15	65	Customer NYUHS	10262	2014-07-22
16	20	Customer THHDP	10263	2014-07-23
17	24	Customer CYZTN	10264	2014-07-24
18	7	Customer QXVLA	10265	2014-07-25
19	87	Customer ZHYOS	10266	2014-07-26
20	25	Customer A71FN	10267	2014-07-20

SQL

```
-- 2
-- Explain what's wrong in the following query and provide a correct alternative

USE TSQLV4;

SELECT Customers.custid, Customers.companyname, Orders.orderid, Orders.orderdate
FROM Sales.Customers AS C
INNER JOIN Sales.Orders AS O
ON Customers.custid = Orders.custid;

-- Explanation: The aliases are assigned in the FROM statement but not used
-- after that. I replaced the code with the aliases
-- CORRECTED:

USE TSQLV4;

SELECT C.custid, C.companyname, O.orderid, O.orderdate
FROM Sales.Customers AS C
INNER JOIN Sales.Orders AS O
ON C.custid = O.custid;

USE Northwinds2022TSQLV7;
GO
SELECT C.CustomerId, C.CustomerCompanyName, O.OrderId, O.OrderDate
FROM Sales.Customer AS C
INNER JOIN Sales.[Order] AS O
ON C.CustomerId = O.CustomerId;
```

(13 rows affected)

(13 rows affected)

Total execution time: 00:00:00.019



	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



	CustomerId	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

```
3
4  -- 3
5  -- Return US customers, and for each customer the total number of orders
6  -- and total quantities.
7  -- Tables involved: TSQLV4 database, Customers, Orders and OrderDetails tables
8
9  USE TSQLV4;
10
11 SELECT C.custid, COUNT (DISTINCT O.orderid) AS numorders,
12        SUM(OD.qty) AS totalqty
13 FROM Sales.Customers AS C
14      INNER JOIN Sales.Orders AS O
15      ON O.custid = C.custid
16      INNER JOIN Sales.OrderDetails as OD
17      ON OD.orderid = O.orderid
18 WHERE C.country = N'USA'
19 GROUP BY C.custid;
20
21 USE Northwinds2022TSQLV7;
22
23 SELECT C.CustomerId, COUNT (DISTINCT O.orderid) AS numorders,
24        SUM(OD.Quantity) AS totalqty
25 FROM Sales.Customer AS C
26      INNER JOIN Sales.[Order] AS O
27      ON O.CustomerId = C.CustomerId
28      INNER JOIN Sales.OrderDetail as OD
29      ON OD.orderid = O.orderid
30 WHERE C.CustomerCountry = N'USA'
31 GROUP BY C.CustomerId;
32
```

(832 rows affected)
(832 rows affected)
Total execution time: 00:00:00.019



	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 SF0GW	10252	2014-07-09
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11	20	Customer THHDP	10258	2014-07-17
12	13	Customer VMLOG	10259	2014-07-18
13	56	Customer QNIVZ	10260	2014-07-19
14	61	Customer WULWD	10261	2014-07-19
15	65	Customer NYUHS	10262	2014-07-22
16	20	Customer THHDP	10263	2014-07-23
17	24	Customer CYZTN	10264	2014-07-24
18	7	Customer QXVLA	10265	2014-07-25
19	87	Customer ZHYOS	10266	2014-07-26
20	75	Customer A71FN	10267	2014-07-26



	CustomerId	CustomerCompanyName	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 SF0GW	10252	2014-07-09
6	34	Customer IBVRG	10253	2014-07-10
7	14	Customer WNMAF	10254	2014-07-11
8	68	Customer CCKOT	10255	2014-07-12
9	88	Customer SRQVM	10256	2014-07-15
10	35	Customer UMTLM	10257	2014-07-16
11	20	Customer THHDP	10258	2014-07-17

```
-- 4
-- Return customers and their orders including customers who placed no orders
-- Tables involved: TSQLV4 database, Customers and Orders tables

USE TSQLV4;

SELECT C.custid, C.companyname, O.orderid, O.orderdate
FROM Sales.Customers AS C
LEFT OUTER JOIN Sales.Orders AS O
ON C.custid = O.custid;

USE Northwinds2022TSQLV7;
GO

SELECT C.CustomerId, C.CustomerCompanyName, O.OrderId, O.Orderdate
FROM Sales.Customer AS C
LEFT OUTER JOIN Sales.[Order] AS O
ON C.CustomerId = O.CustomerId;
```

(2 rows affected)
(2 rows affected)
Total execution time: 00:00:00.008



	custid	companyname
1	22	Customer DTD MN
2	57	Customer WVAXS



	CustomerId	CustomerCompanyName
1	22	Customer DTD MN
2	57	Customer WVAXS

```
-- 5
-- Return customers who placed no orders
-- Tables involved: TSQLV4 database, Customers and Orders tables

USE TSQLV4;

SELECT C.custid, C.companyname
FROM Sales.Customers AS C
LEFT OUTER JOIN Sales.Orders AS O
ON O.custid = C.custid
WHERE O.orderid IS NULL;

USE Northwinds2022TSQLV7
GO

SELECT C.CustomerId, C.CustomerCompanyName
FROM Sales.Customer as C
LEFT OUTER JOIN Sales.[Order] AS O
ON C.CustomerId = O.CustomerId
WHERE O.OrderId IS NULL;
```

(3 rows affected)

(3 rows affected)

Total execution time: 00:00:00.006



	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



	CustomerId	CustomerCompanyName	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

```
17
18
19 -- 6
20 -- Return customers with orders placed on Feb 12, 2016 along with their orders
21 -- Tables involved: TSQLV4 database, Customers and Orders tables
22
23 USE TSQLV4;
24
25 SELECT C.custid, C.companyname, O.orderid, O.orderdate
26 FROM Sales.Customers AS C
27     INNER JOIN Sales.Orders AS O
28         ON O.custid = C.custid
29 WHERE O.orderdate = '20160212';
30
31
32 USE Northwinds2022TSQLV7;
33 GO
34 SELECT C.CustomerId, C.CustomerCompanyName, O.OrderId, O.OrderDate
35 FROM Sales.Customer AS C
36     INNER JOIN Sales.[Order] AS O
37         ON C.CustomerId = O.CustomerId
38 WHERE O.OrderDate = '20160212';
39
40
```

(91 rows affected)

(91 rows affected)

Total execution time: 00:00:00.009



	custid	companyname	orderid	orderdate
1	72	Customer AHP0P	NULL	NULL
2	58	Customer AHXHT	NULL	NULL
3	25	Customer AZJED	NULL	NULL
4	18	Customer BSVAR	NULL	NULL
5	91	Customer CCFIZ	NULL	NULL
6	68	Customer CCK0T	NULL	NULL
7	49	Customer CQRAA	NULL	NULL
8	24	Customer CYZTN	NULL	NULL
9	22	Customer DTDMM	NULL	NULL
10	48	Customer DVFMB	10883	2016-02-12
11	10	Customer EEALV	NULL	NULL
12	40	Customer EFFTCT	NULL	NULL
13	85	Customer ENQZT	NULL	NULL
14	82	Customer EYHKM	NULL	NULL
15	79	Customer FAPSM	NULL	NULL
16	17	Customer FEVNN	NULL	NULL
17	37	Customer FRXZL	NULL	NULL
18	33	Customer FVXPQ	NULL	NULL
19	53	Customer GCJSG	NULL	NULL
20	30	Customer GIIAC	NULL	NULL



	CustomerId	CustomerCompanyName	orderid	orderdate
1	72	Customer AHP0P	NULL	NULL
2	58	Customer AHXHT	NULL	NULL
3	25	Customer AZJED	NULL	NULL
4	18	Customer BSVAR	NULL	NULL
5	91	Customer CCFIZ	NULL	NULL
6	68	Customer CCK0T	NULL	NULL
7	49	Customer CQRAA	NULL	NULL
8	24	Customer CYZTN	NULL	NULL
9	22	Customer DTDMM	NULL	NULL
10	48	Customer DVFMB	10883	2016-02-12
11	10	Customer EEALV	NULL	NULL

```
-
2
3
4 -- 7 (Optional, Advanced)
5 -- Write a query that returns all customers in the output, but matches
6 -- them with their respective orders only if they were placed on February 12, 2016
7 -- Tables involved: TSQLV4 database, Customers and Orders tables
8
9 USE TSQLV4;
10
11 SELECT C.custid, C.companyname, O.orderid, O.orderdate
12 FROM Sales.Customers AS C
13     LEFT OUTER JOIN Sales.Orders AS O
14         ON C.custid = O.custid
15         AND O.orderdate = '20160212'
16 ORDER BY C.companyname; -- I added this line to replicate your desired output
17
18 USE Northwinds2022TSQLV7;
19
20 SELECT C.CustomerId, C.CustomerCompanyName, O.orderid, O.orderdate
21 FROM Sales.Customer AS C
22     LEFT OUTER JOIN Sales.[Order] AS O
23         ON C.CustomerId = O.CustomerId
24         AND O.orderdate = '20160212'
25 ORDER BY C.CustomerCompanyName; -- I added this line to replicate your desired output
26
27
```

(5 rows affected)

(5 rows affected)

Total execution time: 00:00:00.010

🔍 ⚙️ ↺️ ↻️ 📊

	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 DTDMN	NULL	NULL
5	57	Customer WVAXS	NULL	NULL

🔍 ⚙️ ↺️ ↻️ 📊

	CustomerId	CustomerCompanyName	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 DTDMN	NULL	NULL
5	57	Customer WVAXS	NULL	NULL

```
8
9
10
11 -- 8 (Optional, Advanced)
12 -- Explain why the following query isn't a correct solution query for exercise 7.
13 USE TSQLV4;
14
15 SELECT C.custid, C.companyname, O.orderid, O.orderdate
16 FROM Sales.Customers AS C
17     LEFT OUTER JOIN Sales.Orders AS O
18         ON O.custid = C.custid
19 WHERE O.orderdate = '20160212'
20        OR O.orderid IS NULL;
21
22 -- EXPLANATION: The Where clause doesn't preserve the customers that didn't place orders
23 -- on Feb 12th because it performs a final filter after the join
24
25 USE Northwinds2022TSQLV7;
26
27 SELECT C.CustomerId, C.CustomerCompanyName, O.orderid, O.orderdate
28 FROM Sales.Customer AS C
29     LEFT OUTER JOIN Sales.[Order] AS O
30         ON O.CustomerId = C.CustomerId
31 WHERE O.orderdate = '20160212'
32        OR O.orderid IS NULL;
```