

Tutorial 10: An Introduction to SQL Server

April 23, 2018

1 Deliverable 1

Table name: dbo.customer
Attributes: cid, cname, rating, salary
Primary key: cid
Foreign keys: none

Table name: dbo.item
Attributes: iid, iname, type
Primary key: iid
Foreign keys: none

Table name: dbo.purchase
Attributes: pid, cid, iid, day, qty
Primary key: pid
Foreign Keys: cid REFERENCES dbo.customer, iid REFERENCES dbo.item

2 Deliverable 2

Theoretically, the first query, which uses the inner join syntax, should keep only 1 copy of the joining attributes. While the second query, which just specifies an equi-join condition, should keep both copies of the joining attributes.

However, as a result of running these 2 queries on Microsoft SQL Server, they both keep only 1 copy of the joining attributes; so there is no difference.

3 Deliverable 3

```
select c.cname
from   customer c, purchase p, item i
where  p.cid = c.cid and i.iid = p.iid
       and i.iname like '%Chococlalte Frog%';
```

4 Deliverable 4

```
update purchase
set    qty = 5
where  pid in (select p.pid
                from    customer c, purchase p, item i
                where   c.cid = p.cid and p.iid = i.iid
                and c.cname like 'S. Uper'
                and i.iname like '%Chocolate Frog%');
```

5 Deliverable 5

```
delete from purchase
where pid in (select p1.pid
              from    purchase p1
              where   p1.iid = 180
              and p1.cid in (select p2.cid
                            from    purchase p2
                            where   p2.qty = (select max(p3.qty)
                                              from    purchase p3
                                              where   p3.iid = 180)));
```

Before: the customer (cid=80) has the maximum single purchase (qty=50)

	pid	cid	iid	day	qty
1	10	65	180	2014-11-22	5
2	14	70	180	2013-03-22	20
3	19	75	180	2014-04-28	3
4	22	80	180	2014-05-03	15
5	23	80	180	2014-05-04	50
6	28	85	180	2014-06-15	43

After: the Chocolate Frog purchase records of the customer (cid=80) are deleted.

	pid	cid	iid	day	qty
1	10	65	180	2014-11-22	5
2	14	70	180	2013-03-22	20
3	19	75	180	2014-04-28	3
4	28	85	180	2014-06-15	43

6 Deliverable 6

Execute:

```
delete from item
where iid = 180;
```

When we execute the delete command, we get the following error:

Msg 547, Level 16, State 0, Line 4

The DELETE statement conflicted with the REFERENCE constraint "FK__purchase__iid__15502E78".
The conflict occurred in database "CustomerDB_f4a0b", table "dbo.purchase", column 'iid'.
The statement has been terminated.

This is because the item with iid 180 is referenced by some records in purchase table. If we delete item 180, then the purchase record, which has iid as a foreign key referencing item 180, cannot find the item in the item table, which violates referential integrity. So item 180 cannot be deleted until all the purchase records that reference item 180 are deleted.

7 Deliverable 7

Execute:

```
update purchase
set qty = 42;
```

we update every purchase's quantity to be 42.

capture before recovery:

Object Explorer

Connect

- AdventureWorks2008R2
- AdventureWorksDW
- AdventureWorksDW2008R2
- CustomerDB_a5e6
- CustomerDB_a7o0b
- CustomerDB_a9h0b
- CustomerDB_b7w9a
- CustomerDB_b9l1b
- CustomerDB_b9v0b
- CustomerDB_c5m0b
- CustomerDB_c5y0b
- CustomerDB_cs304
- CustomerDB_d4i0b
- CustomerDB_d4p0b
- CustomerDB_d5p0b
- CustomerDB_d5z8
- CustomerDB_d9j0b
- CustomerDB_e3k0b
- CustomerDB_e4x0b
- CustomerDB_e6c1b
- CustomerDB_e9u0b
- CustomerDB_f4a0b
- Database Diagrams
- Tables
- Views
- Synonyms
- Programmability
- Service Broker
- Storage
- Security
- CustomerDB_f5j0b
- CustomerDB_f8s0b
- CustomerDB_h0s6
- CustomerDB_i2k0b
- CustomerDB_i4m0b
- CustomerDB_j0q8
- CustomerDB_j0w0b
- CustomerDB_j1o0b
- CustomerDB_j5m0b
- CustomerDB_j6w9a
- CustomerDB_j7o0b

SQLQuery1.sql - ma...CS-USE\4a0b (62))*

```
select * from purchase;
```

100 %

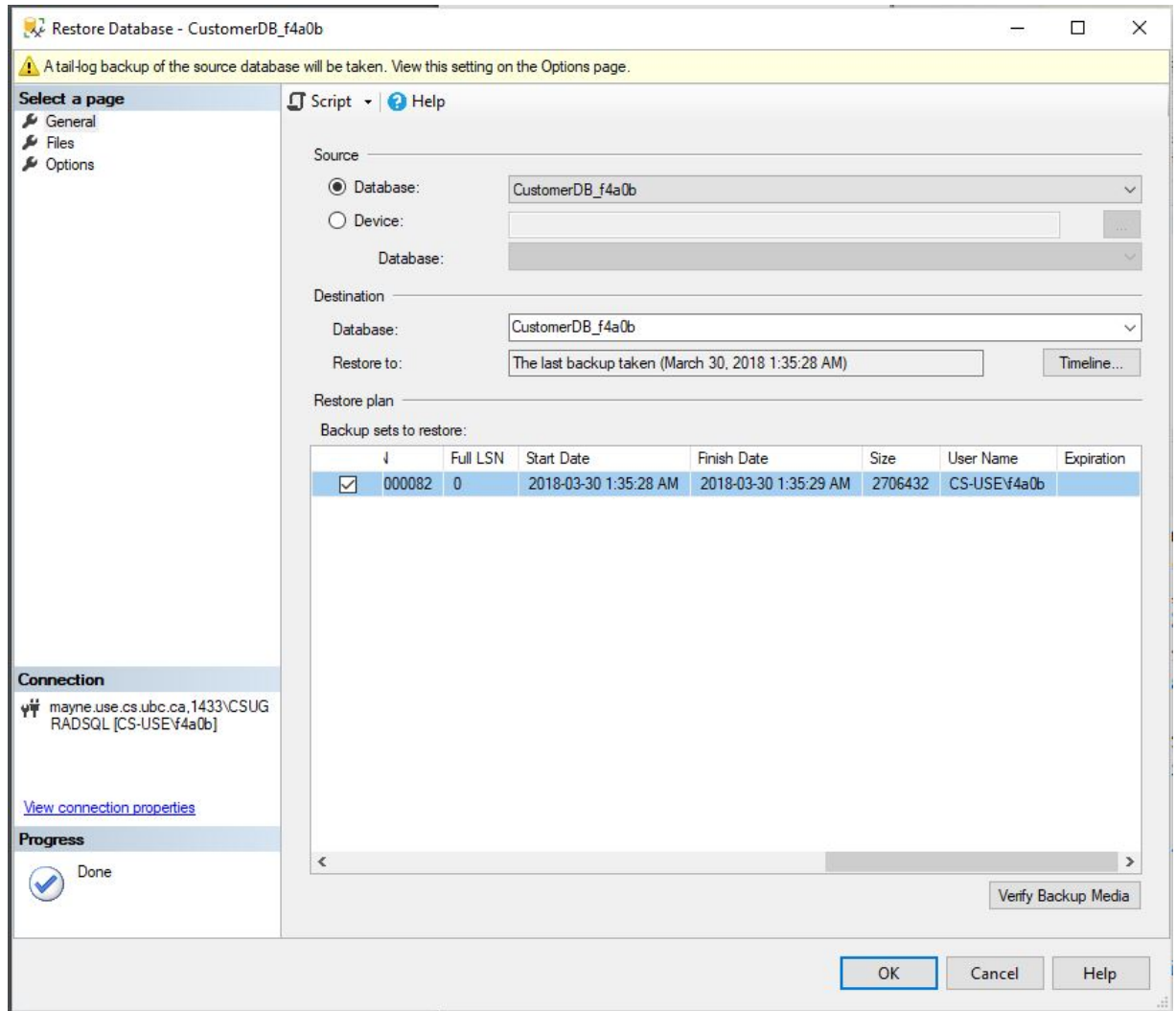
Results Messages

	pid	cid	iid	day	qty
1	1	40	102	2006-10-10	42
2	2	50	105	2006-11-12	42
3	3	55	105	2008-12-18	42
4	4	55	110	2008-12-18	42
5	5	55	160	2008-12-18	42
6	6	55	170	2008-12-18	42
7	7	55	170	2008-12-20	42
8	8	60	105	2009-11-12	42
9	9	65	170	2013-11-22	42
10	10	65	180	2014-11-22	42
11	11	70	150	2001-01-01	42
12	12	70	160	2013-03-22	42
13	13	70	170	2013-03-22	42
14	14	70	180	2013-03-22	42
15	15	75	120	2014-04-15	42
16	16	75	140	2014-04-16	42
17	17	75	160	2014-04-25	42

Query executed successfully.

8 Deliverable 8

capture during recovery:



9 Deliverable 9

capture after recovery:

Object Explorer

Connect

- CustomerDB_c5m0b
- CustomerDB_c5y0b
- CustomerDB_cs304
- CustomerDB_d4i0b
- CustomerDB_d4p0b
- CustomerDB_d5p0b
- CustomerDB_d5z8
- CustomerDB_d9j0b
- CustomerDB_e3k0b
- CustomerDB_e4x0b
- CustomerDB_e6c1b
- CustomerDB_e9u0b
- CustomerDB_f4a0b
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - dbo.customer
 - dbo.item
 - dbo.purchase
 - Columns
 - Keys
 - Constraints
 - Triggers
 - Indexes
 - Statistics
 - Views
 - Synonyms
 - Programmability
 - Service Broker
 - Storage
 - Security
- CustomerDB_f5j0b
- CustomerDB_f8s0b
- CustomerDB_h0s6
- CustomerDB_i2k0b
- CustomerDB_i4m0b
- CustomerDB_j0q8
- CustomerDB_j0w0b
- CustomerDB_j1o0b
- CustomerDB_j5m0b

SQLQuery1.sql - ma...CS-USE\4a0b (54))*

```
select * from purchase;
```

100 %

Results Messages

	pid	cid	iid	day	qty
1	1	40	102	2006-10-10	2
2	2	50	105	2006-11-12	5
3	3	55	105	2008-12-18	1
4	4	55	110	2008-12-18	2
5	5	55	160	2008-12-18	3
6	6	55	170	2008-12-18	5
7	7	55	170	2008-12-20	10
8	8	60	105	2009-11-12	1
9	9	65	170	2013-11-22	1
10	10	65	180	2014-11-22	5
11	11	70	150	2001-01-01	1
12	12	70	160	2013-03-22	6
13	13	70	170	2013-03-22	2
14	14	70	180	2013-03-22	20
15	15	75	120	2014-04-15	1
16	16	75	140	2014-04-16	1
17	17	75	160	2014-04-25	5

Query executed successfully.