Tutorial 10: An Introduction to SQL Server

Jin, Ziyang
34893140
f4a0b

Kim, Joon Hyung
35183128
l1m8

March 30, 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.cutomer, 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 '%Chococlate 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.

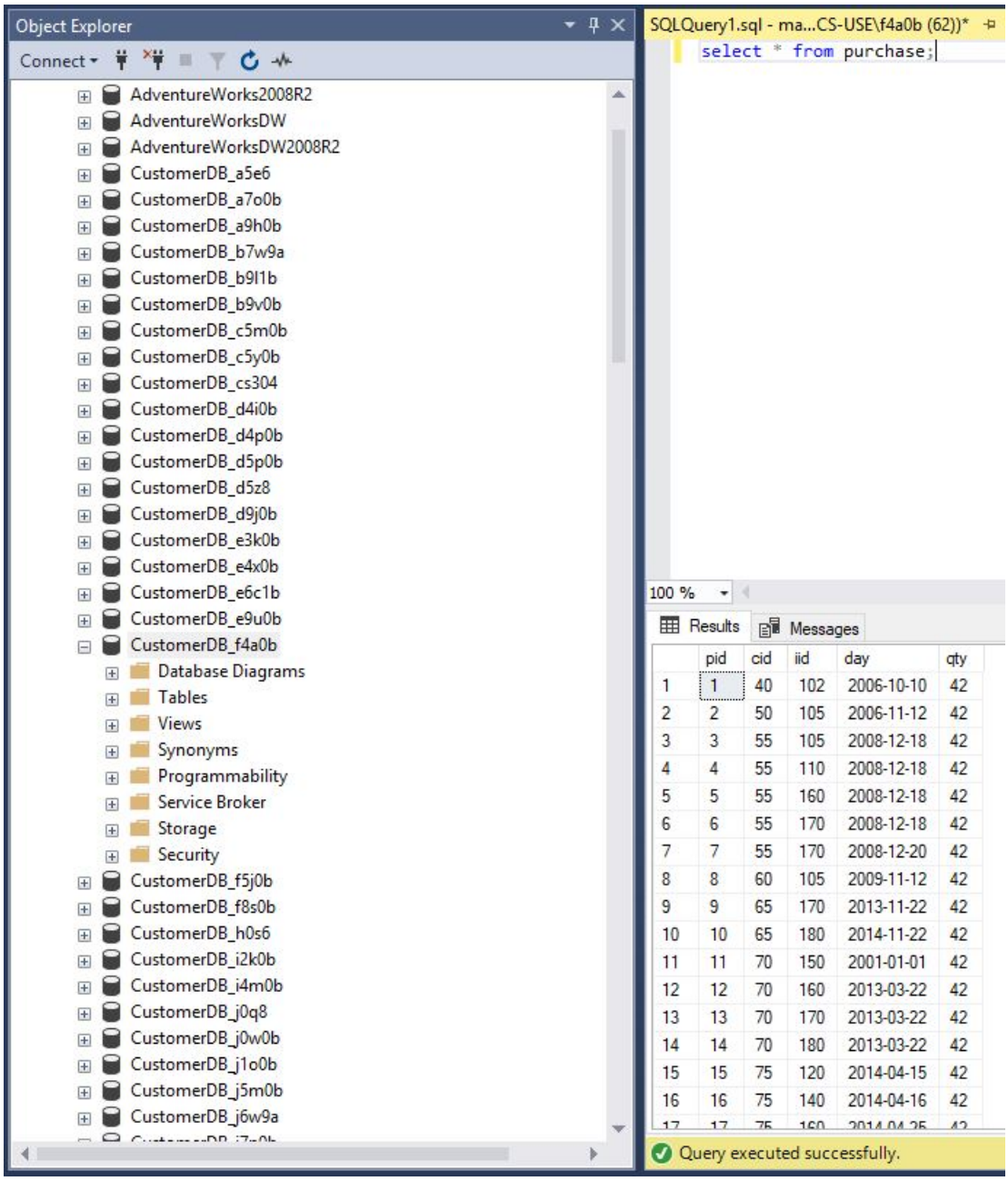
7 Deliverable 7

Execute:

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

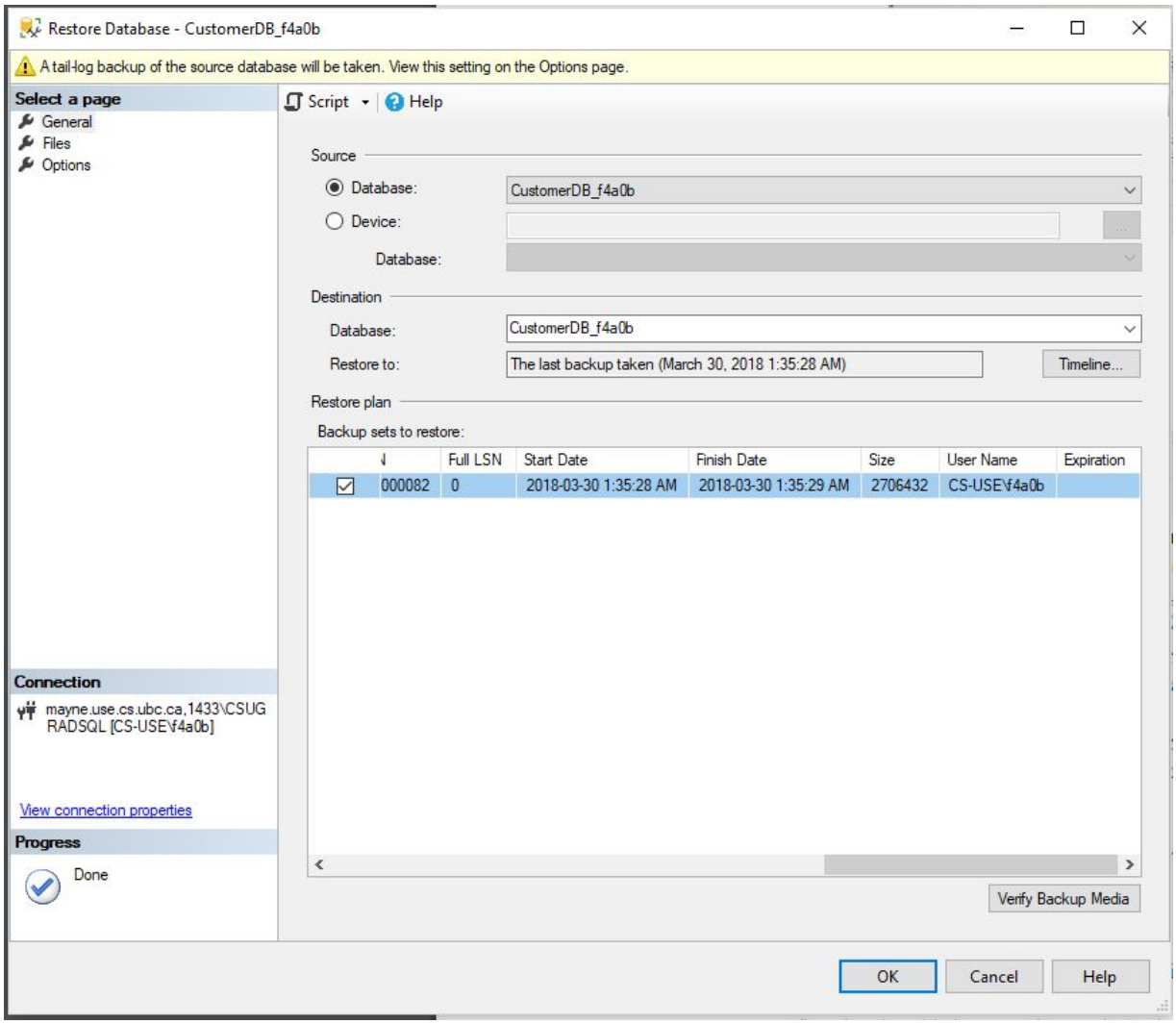
we update every purchase's quantity to be 42.

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
SQLQuery1.sql - ma...CS-USE\f4a0b (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
Query executed successfully.

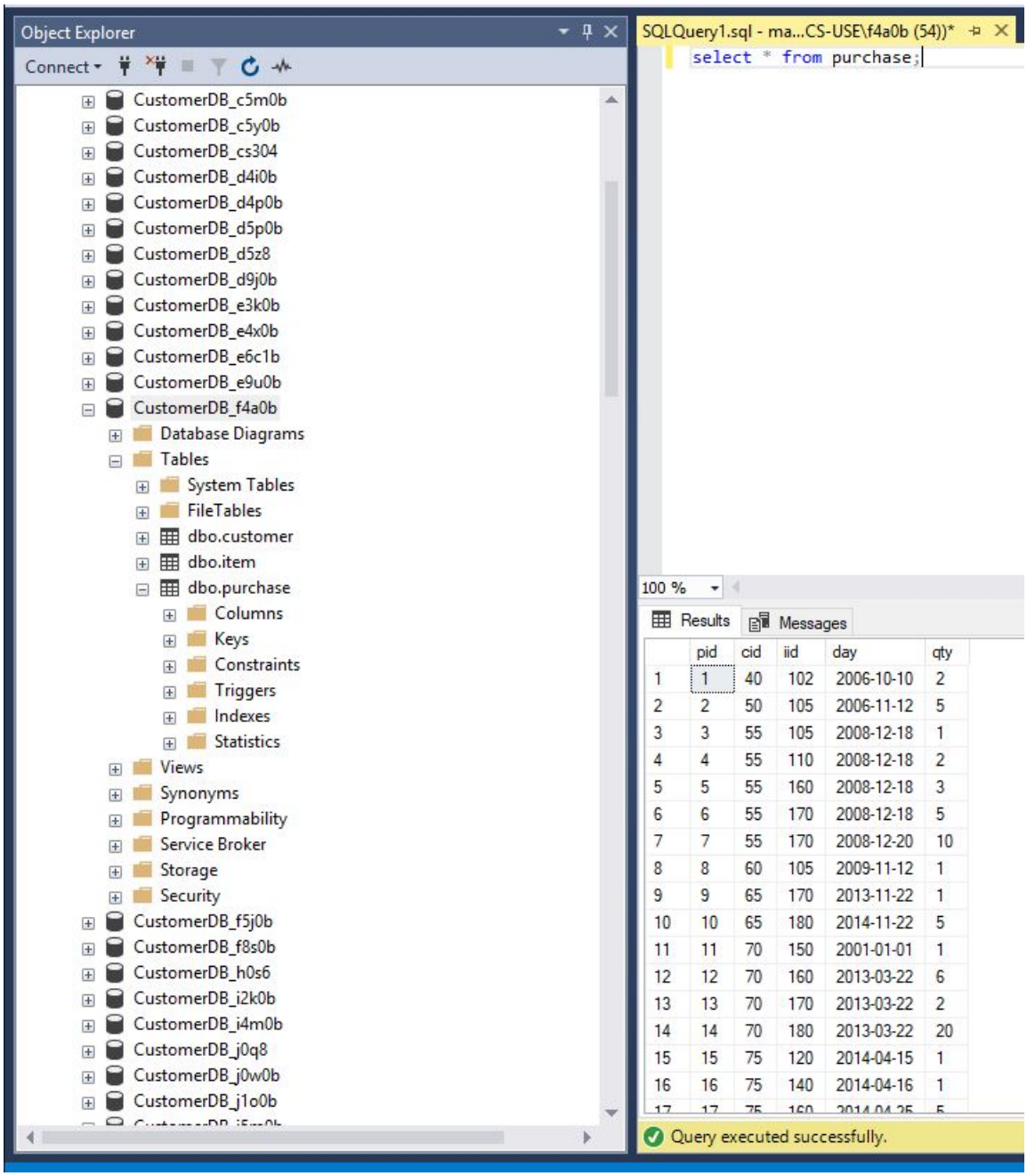
8 Deliverable 8

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
SQLQuery1.sql - ma...CS-USE\f4a0b (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
Query executed successfully.