

Class Activity #1: Explaining the difference between Join Queries

INPUTS:

1. The following records in the registeredCustomers table:

CustomerIP
bstgw1.bst.bls.com.
burdett.orthop.Washington.edu
cs1-men-a21.mcn.org.
Slwol1p20.ozemail.com.au.
204.50.229.40

2. The baseline query, Query 1, returns 212 records.

Query 1: SELECT [registeredCustomers].customerIP, [hitData].resourceName
 FROM registeredCustomers INNER JOIN hitData
 ON [registeredCustomers].customerIP = [hitData].ip;

1. Consider the results of queries 2A and 2B:

Query 2A: SELECT [registeredCustomers].customerIP, [hitData].resourceName
 FROM registeredCustomers LEFT JOIN hitData
 ON [registeredCustomers].customerIP = [hitData].ip;

Query 2B: SELECT [hitData].ip, [hitData].resourceName
 FROM registeredCustomers LEFT JOIN hitData
 ON [registeredCustomers].customerIP = [hitData].ip;

- How are these two queries different from Query 1? Why do these queries return 213 records when query 1 returns 212 records?
- Why does the additional record in query 2A have a NULL value for the resource Name?
- Why does the additional record in query 2B have NULL values for both the IP address and resource Name?

2. Consider the results of queries 3A and 3B:

Query 3A: SELECT [registeredCustomers].customerIP, [hitData].resourceName
 FROM registeredCustomers RIGHT JOIN hitData
 ON [registeredCustomers].customerIP = [hitData].ip;

Query 3B: SELECT [hitData].ip, [hitData].resourceName
 FROM registeredCustomers RIGHT JOIN hitData
 ON [registeredCustomers].customerIP = [hitData].ip;

- Why do these queries return 4812 records when query 1 returns 212 records?
- Why are there NULL values in many of the IP address fields associated with query 3A?
- Why are there NO NULL values in the IP address fields associated with query 3B?

Query 1:

```
SELECT [registeredCustomers].customerIP, [hitData].resourceName
FROM registeredCustomers INNER JOIN hitData
ON [registeredCustomers].customerIP = [hitData].ip;
```

Results:

The result includes 212 records.

The records shows information from two tables - ip addresses (from registeredCustomers table) and resourceNames (from hitData table)

The are no empty field values.

Tabular Results:

<i>customerIP</i>	<i>resourceName</i>
burdett.orthop.washington.edu.	/default.html
burdett.orthop.washington.edu.	/bonejoint/bonjoint1_1.html
burdett.orthop.washington.edu.	/bonejoint/xzzzzzzz1_1.html
...(15 records removed)	...
burdett.orthop.washington.edu.	/Bones.GIF
burdett.orthop.washington.edu.	/construct.gif
burdett.orthop.washington.edu.	/now_button.gif
cs1-men-a21.mcn.org.	/default.html
cs1-men-a21.mcn.org.	/construct.gif
cs1-men-a21.mcn.org.	/now_button.gif
... (3 records removed)	...
cs1-men-a21.mcn.org.	/bonejoint/Sports_Med/Sports_med.GIF
cs1-men-a21.mcn.org.	/bonejoint/Sports_Med/Fitness.html
burdett.orthop.washington.edu.	/default.html
burdett.orthop.washington.edu.	/htfus.html
... (108 records removed)	...
burdett.orthop.washington.edu.	/bonejoint/mov/Shoulder_joints.mov
burdett.orthop.washington.edu.	/web.links.html
bstgw1.bst.bls.com.	/default.html
bstgw1.bst.bls.com.	/Bones.GIF
... (34 records removed)	...
bstgw1.bst.bls.com.	/bonejoint/_1.html
bstgw1.bst.bls.com.	/bonejoint/Sports_Med/Sports_Med.html
bstgw1.bst.bls.com.	/bonejoint/Sports_Med/Sports_med.GIF
burdett.orthop.washington.edu.	/default.html
burdett.orthop.washington.edu.	/bonejoint/test/Test.idx.html
...(27 records removed)	...
burdett.orthop.washington.edu.	/bonejoint/test/zrzzzzzz1_2.html
burdett.orthop.washington.edu.	/bonejoint/test/bibliogr1_1.html
slwol1p20.ozemail.com.au.	/bonejoint/azzzzzzz1_2.html

Query 2a:

```
SELECT [registeredCustomers].customerIP, [hitData].resourceName
FROM registeredCustomers LEFT JOIN hitData
ON [registeredCustomers].customerIP = [hitData].ip;
```

Results:

The query returns 213 records.

There is a NULL value in the resource Name field associated with customerIP 204.50.229.40.

Tabular Results:

<i>customerIP</i>	<i>resourceName</i>
204.50.229.40	
bstgw1.bst.bls.com.	/bonejoint/zrrzzxzz4_1.html
bstgw1.bst.bls.com.	/bonejoint/zqrzzzzz1_1.html
...(35 records removed)	...
bstgw1.bst.bls.com.	/bonejoint/zrwzzzzz4_1.html
bstgw1.bst.bls.com.	/bonejoint/zrzzzzxz4_1.html
burdett.orthop.washington.edu.	/default.html
burdett.orthop.washington.edu.	/bonejoint/test/gif/FIG1-08.gif
...(160 records removed)	...
burdett.orthop.washington.edu.	/bonejoint/test/Test.idx.html
burdett.orthop.washington.edu.	/bonejoint/test/zrzzzzzz1_2.html
cs1-men-a21.mcn.org.	/construct.gif
cs1-men-a21.mcn.org.	/now_button.gif
...(4 records removed)	...
cs1-men-a21.mcn.org.	/default.html
cs1-men-a21.mcn.org.	/bonejoint/Sports_Med/Fitness.html
slwol1p20.ozemail.com.au.	/bonejoint/azzzzzzz1_2.html

Query 2b:

```
SELECT [hitData].ip, [hitData].resourceName
FROM registeredCustomers LEFT JOIN hitData
ON [registeredCustomers].customerIP = [hitData].ip;
```

Total:

The query returns 213 records.

There are NULL values in both the customerIP and resourceName fields of the last record.

Records Returned:

<i>customerIP</i>	<i>resourceName</i>
burdett.orthop.washington.edu.	/default.html
burdett.orthop.washington.edu.	/bonejoint/test/gif/FIG1-08.gif
... (160 records removed)	...
burdett.orthop.washington.edu.	/bonejoint/test/Test.idx.html
burdett.orthop.washington.edu.	/bonejoint/test/zrzzzzzz1_2.html
bstgw1.bst.bls.com.	/bonejoint/zrrzzzzz4_1.html
bstgw1.bst.bls.com.	/bonejoint/zqrzzzzz1_1.html
... (35 records removed)	...
bstgw1.bst.bls.com.	/bonejoint/zrwzzzzz4_1.html
bstgw1.bst.bls.com.	/bonejoint/zrzzzzxz4_1.html
cs1-men-a21.mcn.org.	/construct.gif
cs1-men-a21.mcn.org.	/now_button.gif
... (4 records removed)	...
cs1-men-a21.mcn.org.	/default.html
cs1-men-a21.mcn.org.	/bonejoint/Sports_Med/Fitness.html
slwol1p20.ozemail.com.au.	/bonejoint/azzzzzzz1_2.html

Query 3a:

```
SELECT [registeredCustomers].customerIP, [hitData].resourceName
FROM registeredCustomers RIGHT JOIN hitData
ON [registeredCustomers].customerIP = [hitData].ip;
```

Results:

The query returns 4812 Records.

There are many NULL values in the customerIP field of the results.

Tabular Results:

<i>customerIP</i>	<i>resourceName</i>
...	...
	/bonejoint/rrrrrrr1 1.html
	/bonejoint/xzzzzzz1 2.html
burdett.orthop.washington.edu.	/default.html
burdett.orthop.washington.edu.	/bonejoint/bonjoint1 1.html
burdett.orthop.washington.edu.	/bonejoint/xzzzzzz1 1.html
burdett.orthop.washington.edu.	/bonejoint/Arthritis.idx.html
burdett.orthop.washington.edu.	/bonejoint/xxxxxxx1 1.html
	/default.html
burdett.orthop.washington.edu.	/bonejoint/zzzzzzz1 1.html
	/construct.gif
	/now button.gif
burdett.orthop.washington.edu.	/bonejoint/xzzzzzz1 1.html
	/Bones.GIF
burdett.orthop.washington.edu.	/web.links.html
burdett.orthop.washington.edu.	/Arthritis/Arthritis.html
	/bonejoint/fzzzzzz1 2.html
burdett.orthop.washington.edu.	/bonejoint/xzzzzzz1 1.html
	/bonejoint/research/Research.html
	/bonejoint/research/research.gif
	/bonejoint/szzzzzz1 2.html
burdett.orthop.washington.edu.	/Arthritis/aflogo.gif
	/default.html
	/now button.gif
...	...
	/bonejoint/szzzzzz1 1.html
	/bonejoint/szzzzzz1 2.html
cs1-men-a21.mcn.org.	/default.html
cs1-men-a21.mcn.org.	/construct.gif
cs1-men-a21.mcn.org.	/now button.gif
cs1-men-a21.mcn.org.	/Bones.GIF
cs1-men-a21.mcn.org.	/bonejoint/bonjoint1 1.html
cs1-men-a21.mcn.org.	/bonejoint/Sports Med/Sports Med.html
cs1-men-a21.mcn.org.	/bonejoint/Sports Med/Sports med.GIF
cs1-men-a21.mcn.org.	/bonejoint/Sports Med/Fitness.html
	/bonejoint/Arthritis.idx.html
	/bonejoint/xzzzzzz1 1.html
	/bonejoint/bibliogr1 1.html
...	...

Query 3b:

```

SELECT [hitData].ip, [hitData].resourceName
FROM registeredCustomers RIGHT JOIN hitData
ON [registeredCustomers].customerIP = [hitData].ip;

```

Results:

The query returns 4812 Records.

There are **NO** NULL values in the customerIP field of the results.

Tabular Results:

<i>ip</i>	<i>resourceName</i>
...	...
gatekeeper.mitre.org.	/bonejoint/rrrrrrr1 1.html
callisto.parcplace.com.	/bonejoint/xzzzzzz1 2.html
burdett.orthop.washington.edu.	/default.html
burdett.orthop.washington.edu.	/bonejoint/bonjoint1 1.html
burdett.orthop.washington.edu.	/bonejoint/xzzzzzz1 1.html
burdett.orthop.washington.edu.	/bonejoint/Arthritis.idx.html
burdett.orthop.washington.edu.	/bonejoint/xxxxxxx1 1.html
128.95.177.44	/default.html
burdett.orthop.washington.edu.	/bonejoint/zzzzzzz1 1.html
128.95.177.44	/construct.gif
128.95.177.44	/now button.gif
burdett.orthop.washington.edu.	/bonejoint/xzzzzzz1 1.html
128.95.177.44	/Bones.GIF
burdett.orthop.washington.edu.	/web.links.html
burdett.orthop.washington.edu.	/Arthritis/Arthritis.html
ip-195.frugal.com.	/bonejoint/fzzzzzz1 2.html
burdett.orthop.washington.edu.	/bonejoint/xzzzzzz1 1.html
c161149.sctcorp.com.	/bonejoint/research/Research.html
c161149.sctcorp.com.	/bonejoint/research/research.gif
169.150.4.77	/bonejoint/szzzzzz1 2.html
burdett.orthop.washington.edu.	/Arthritis/aflogo.gif
mpp.tiac.net.	/default.html
mpp.tiac.net.	/now button.gif
...	...
tsa-25.ucsc.edu.	/bonejoint/szzzzzz1 1.html
tsa-25.ucsc.edu.	/bonejoint/szzzzzz1 2.html
cs1-men-a21.mcn.org.	/default.html
cs1-men-a21.mcn.org.	/construct.gif
cs1-men-a21.mcn.org.	/now button.gif
cs1-men-a21.mcn.org.	/Bones.GIF
cs1-men-a21.mcn.org.	/bonejoint/bonjoint1 1.html
cs1-men-a21.mcn.org.	/bonejoint/Sports Med/Sports Med.html
cs1-men-a21.mcn.org.	/bonejoint/Sports Med/Sports med.GIF
cs1-men-a21.mcn.org.	/bonejoint/Sports Med/Fitness.html
tsa-25.ucsc.edu.	/bonejoint/Arthritis.idx.html
galileo.mckinley.com.	/bonejoint/xzzzzzz1 1.html
tampico.usc.edu.	/bonejoint/bibliogr1 1.html
...	...