

# Interesting Queries

Tuesday, November 29, 2016 10:08 PM

```
SELECT *  
FROM Statute NATURAL JOIN DefinedBy  
GROUP BY CodeDesignation;
```

The screenshot shows the HeidiSQL interface with the following components:

- Database filter:** Shows a tree view of databases including Project4, Zurg, information\_schema, mysql, performance\_schema, and wp3146330815db\_8888.
- Table filter:** Shows a tree view of tables within Project4, including CrimeReport, CriminalIncident, DefinedBy, FiledBy, MemberOf, PoliceDepartment, PoliceOfficer, ReportedThrough, StatusUpdate, and Statute.
- Query editor:** Contains the SQL query:

```
1 SELECT *  
2 FROM Statute NATURAL JOIN DefinedBy  
3 GROUP BY CodeDesignation;  
4
```
- Result #1 (4x270):** A table with 4 columns: CodeDesignation, ElementsOfCrime, Def\_IncidentNumber, and Def\_CodeDesignation. It displays 270 rows of data, showing combinations of CodeDesignation values and their corresponding incident numbers.
- Bottom status bar:** Shows connection details: Connected: 00:17 h, MariaDB 10.1.19, Uptime: 3 days, 09:57 h, UTC: 2016-11-28 06:01, Idle.

```
SELECT CodeDesignation  
FROM Statute NATURAL JOIN DefinedBy  
GROUP BY CodeDesignation;
```

Unnamed\Project4\Statute\ - HeidiSQL 9.4.0.5125

File Edit Search Tools Go to Help

Host: 127.0.0.1 Database: Project4 Table: Statute Data Query\*

Database filter Table filter

1 SELECT CodeDesignation  
2 FROM Statute NATURAL JOIN DefinedBy  
3 GROUP BY CodeDesignation;

Columns in Statute  
SQL functions  
SQL keywords  
Snippets  
Query history

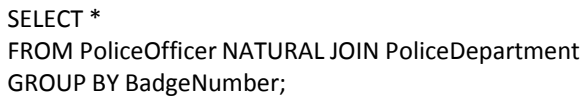
Statute (1x270)

CodeDesignation
110
110, 110
111
111, 111
121
121, 121
122
122, 122
210
210, 210
220
220, 220
230
230, 230
231
231, 231
235
235, 235
236
236, 236

61 /\* Affected rows: 0 Found rows: 270 Warnings: 0 Duration for 1 query: 33.062 sec. \*/  
62 SELECT CodeDesignation FROM Statute NATURAL JOIN DefinedBy GROUP BY CodeDesignation;  
63 /\* Affected rows: 0 Found rows: 270 Warnings: 0 Duration for 1 query: 28.672 sec. \*/  
64 SELECT CURRENT\_TIMESTAMP;  
65 SELECT CURRENT\_TIMESTAMP;

3:26 (86 B) Connected: 00:14 h MariaDB 10.1.19 Uptime: 3 days, 09:54 h UTC: 2016-11-28 05:58 Idle.

```
SELECT COUNT(CodeDesignation)
FROM Statute NATURAL JOIN DefinedBy
GROUP BY CodeDesignation;
```



slyver.117.nu\Project4\ - HeidiSQL 9.4.0.5125

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Host: 127.0.0.1 Database: Project4 Query\*

Database filter Table filter

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- Project4
- Zurg
- information\_schema
- mysql
- performance\_schema
- wp3146330815db\_8888

slyver.117.nu

- Project4 158.0 MiB
- Zurg
- information\_schema 192.0 KiB
- mysql
- performance\_schema
- wp3146330815db\_8888

```

1 SELECT *
2 FROM PoliceOfficer NATURAL JOIN PoliceDepartment
3 GROUP BY BadgeNumber;

```

Result #1 (6x1,251)

DateGraduated	BadgeNumber	LastName	FirstName	PrecinctNumber	Jurisdiction
2000-01-09	118	'Dennis'	'Martin'	1	'Central'
1992-05-01	119	'Timothy'	'Valadine'	1	'Central'
1999-08-07	121	'Mark'	'Nedry'	1	'Central'
1997-08-04	122	'Kelly'	'Pearson'	1	'Central'
1998-04-01	123	'Oren'	'Overton'	1	'Central'
1999-08-06	124	'Lily'	'Nedry'	1	'Central'
1991-02-07	127	'Horus'	'Williams'	1	'Central'
1997-01-08	128	'Caitlyn'	'Perry'	1	'Central'
1997-09-07	129	'Ronald'	'Pearson'	1	'Central'
1997-09-08	131	'Rochelle'	'Pearson'	1	'Central'
1989-04-04	132	'Priscilla'	'Zimmerman'	1	'Central'
2000-01-05	133	'Bryan'	'Martin'	1	'Central'
1997-09-09	134	'Stanley'	'Pearson'	1	'Central'
1995-10-05	135	'Victor'	'Remington'	1	'Central'
1992-04-08	138	'Rochelle'	'Valadine'	1	'Central'
1997-01-10	139	'Deidre'	'Perry'	1	'Central'
1999-10-03	141	'Ulrich'	'Nedry'	1	'Central'
1995-07-06	142	'Genevieve'	'Remington'	1	'Central'

```

35 SHOW TRIGGERS FROM `information_schema`;
36 SHOW EVENTS FROM `information_schema`;
37 SELECT *, EVENT_SCHEMA AS `Db`, EVENT_NAME AS `Name` FROM information_schema.`EVENTS` WHERE `EVENT_SCHEMA`='Project4';
38 SELECT * FROM PoliceOfficer NATURAL JOIN PoliceDepartment GROUP BY BadgeNumber;
39 /* Affected rows: 0 Found rows: 1,251 Warnings: 0 Duration for 1 query: 0.110 sec. (+ 0.234 sec. network) */

```

1:6 Connected: 00:02 h MariaDB 10.1.19 Uptime: 3 days, 10:06 h UTC: 2016-11-28 06:10 Idle.

```

SELECT DateGraduated
FROM PoliceOfficer NATURAL JOIN PoliceDepartment
GROUP BY BadgeNumber;

```

slyver.117.nu\Project4\ - HeidiSQL 9.4.0.5125

File Edit Search Tools Go to Help

Host: 127.0.0.1 Database: Project4 Query\*

Database filter Table filter

slyver.117.nu

- Project4
- Zurg
- information\_schema
- mysql
- performance\_schema
- wp3146330815db\_8888

slyver.117.nu

- Project4 158.0 MiB
- Zurg
- information\_schema 192.0 KiB
- mysql
- performance\_schema
- wp3146330815db\_8888

1 SELECT DateGraduated  
2 FROM PoliceOfficer NATURAL JOIN PoliceDepartment  
3 GROUP BY BadgeNumber;

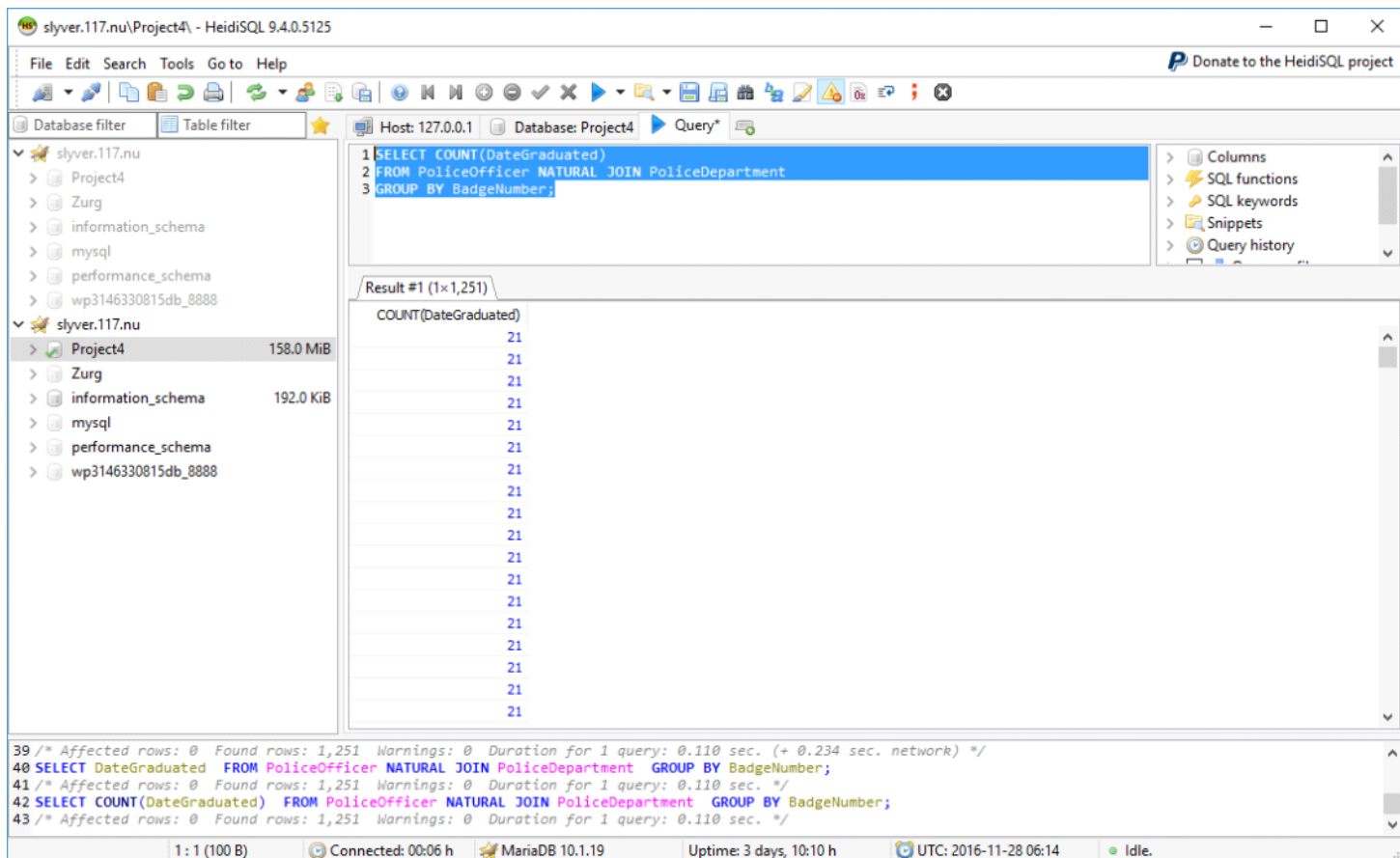
PoliceOfficer (1x1,251)

DateGraduated
0000-00-00
2000-07-01
1992-05-05
1992-05-03
1998-08-07
1989-01-07
1991-02-09
2000-01-09
1992-05-01
1999-08-07
1997-08-04
1998-04-01
1999-08-06
1991-02-07
1997-01-08
1997-09-07
1997-09-08
1989-04-04

37 SELECT \*, EVENT\_SCHEMA AS `Db`, EVENT\_NAME AS `Name` FROM information\_schema.`EVENTS` WHERE `EVENT\_SCHEMA`='Project4';  
38 SELECT \* FROM PoliceOfficer NATURAL JOIN PoliceDepartment GROUP BY BadgeNumber;  
39 /\* Affected rows: 0 Found rows: 1,251 Warnings: 0 Duration for 1 query: 0.110 sec. (+ 0.234 sec. network) \*/  
40 SELECT DateGraduated FROM PoliceOfficer NATURAL JOIN PoliceDepartment GROUP BY BadgeNumber;  
41 /\* Affected rows: 0 Found rows: 1,251 Warnings: 0 Duration for 1 query: 0.110 sec. \*/

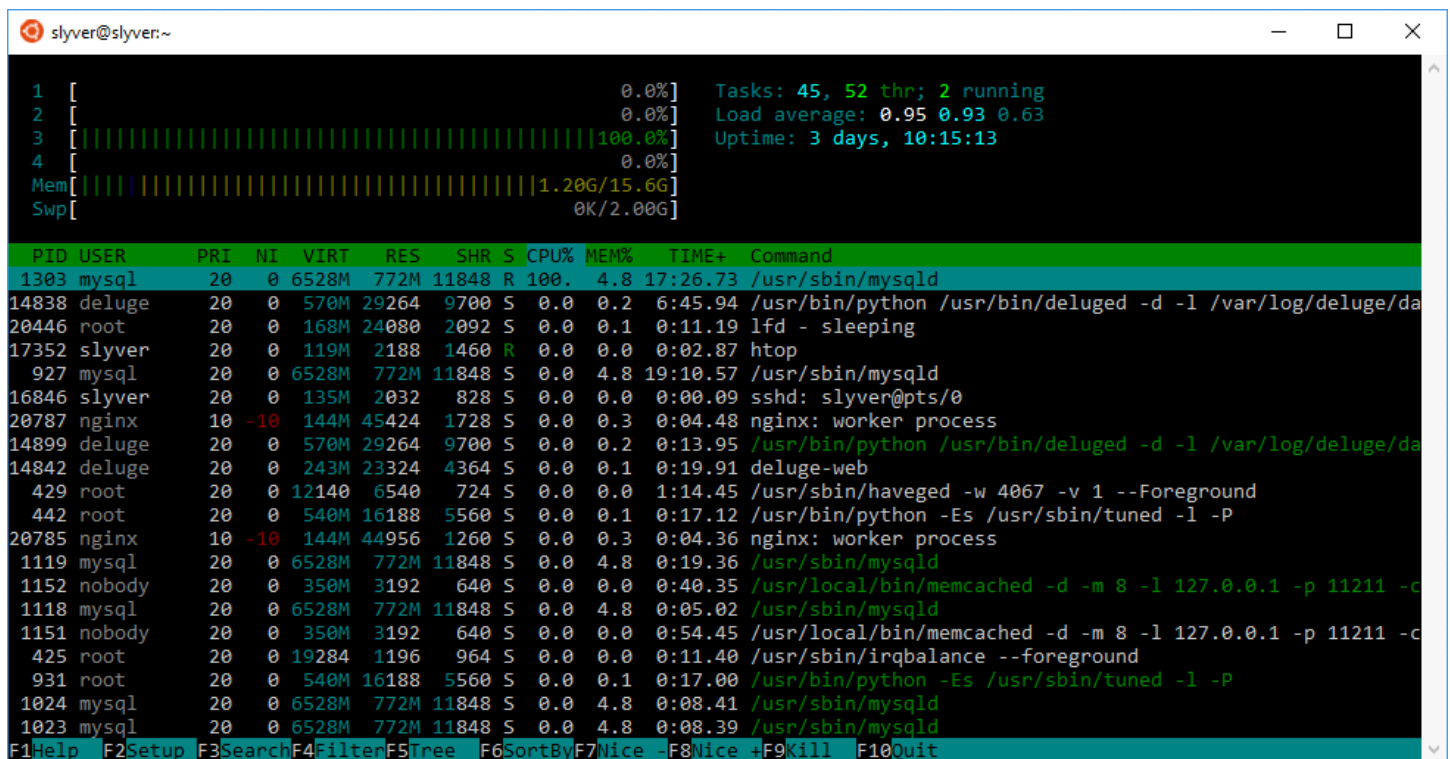
1 : 1 (93 B) Connected: 00:04 h MariaDB 10.1.19 Uptime: 3 days, 10:08 h UTC: 2016-11-28 06:12 Idle.

```
SELECT COUNT(DateGraduated)
FROM PoliceOfficer NATURAL JOIN PoliceDepartment
GROUP BY BadgeNumber;
```



SELECT \*  
FROM PoliceOfficer NATURAL JOIN FiledBy NATURAL JOIN CrimeReport  
GROUP BY BadgeNumber;

This goes on and on and on....

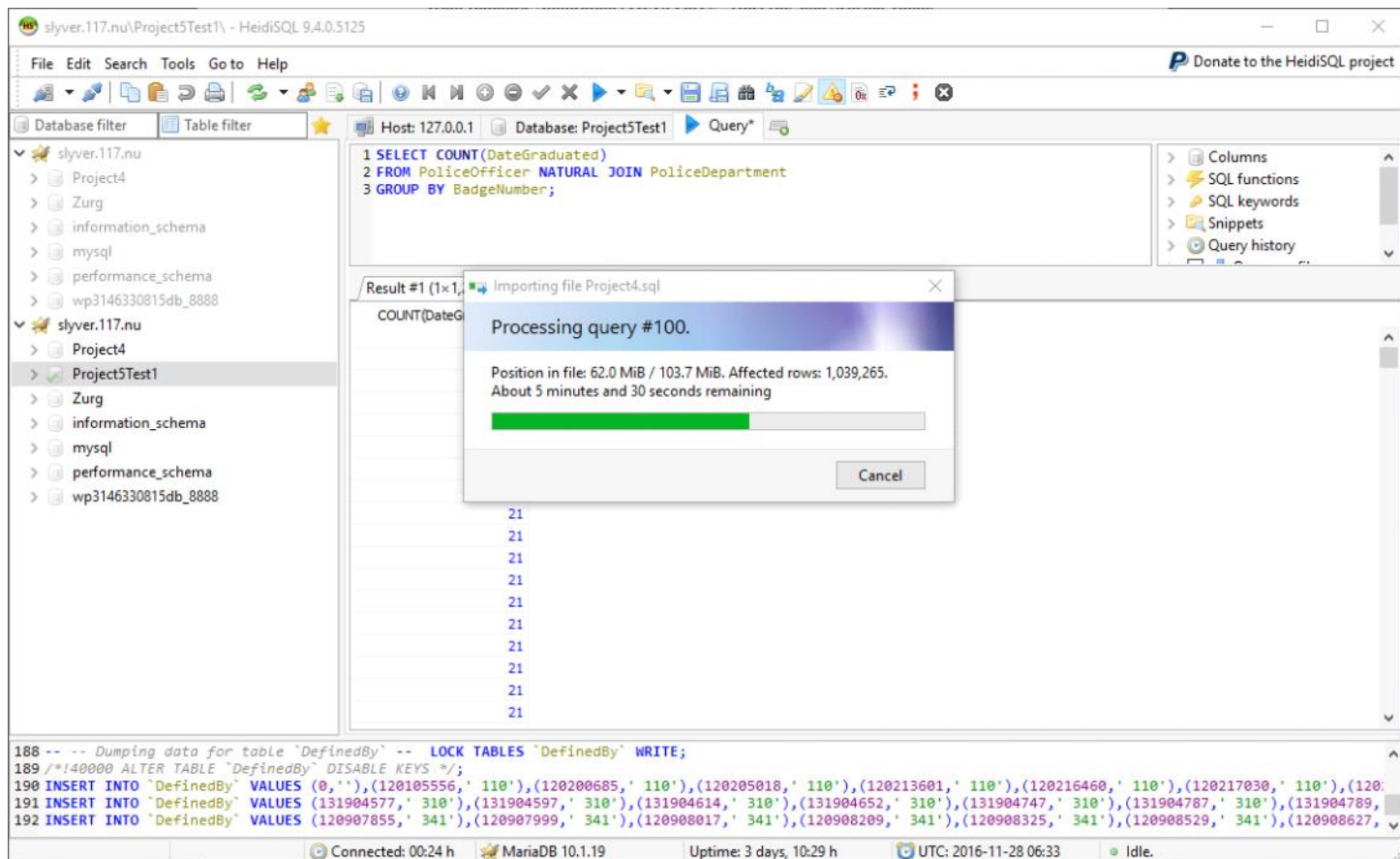




Insert

INSERT INTO `StatusUpdate` VALUES

```
(418,0,'0000-00-00',0),(605,0,'0000-00-00',0),(42104479,0,'0000-00-00',0),(120100002,0,'0000-00-00',0),
(120100506,0,'0000-00-00',0),(120100520,0,'0000-00-00',0),(120100522,0,'0000-00-00',0),(120100547,
0,'0000-00-00',0),(120100551,0,'0000-00-00',0),(120100555,0,'0000-00-00',0),(120100557,0,'0000-00-00',
0),(120100560,0,'0000-00-00',0),(120100561,0,'0000-00-00',0),(120100565,0,'0000-00-00',0),(1201005
75,0,'0000-00-00',0),(120100578,0,'0000-00-00',0),(120100580,0,'0000-00-00',0),(120100586,0,'0000-00-
00',0),(120100588,0,'0000-00-00',0),(120100597,0,'0000-00-00',0),(120100602,0,'0000-00-00',0),(1201
00605,0,'0000-00-00',0),(120100608,0,'0000-00-00',0),(120100609,0,'0000-00-00',0),(120100611,0,'000
0-00-00',0),(120100613,0,'0000-00-00',0),(120100624,0,'0000-00-00',0),(120100626,0,'0000-00-00',0),(1
20100627,0,'0000-00-00',0),(120100633,0,'0000-00-00',0),(120100638,0,'0000-00-00',0),(120100644,0,'
0000-00-00',0),(120100653,0,'0000-00-00',0),(120100654,0,'0000-00-00',0),(120100657,0,'0000-00-00',0
),(120100663,0,'0000-00-00',0),(120100666,0,'0000-00-00',0),(120100675,0,'0000-00-00',0),(120100690,
0,'0000-00-00',0),(120100697,0,'0000-00-00',0),(120100698,0,'0000-00-00',0),(120100701,0,'0000-00-00',
0),(120100705,0,'0000-00-00',0),(120100711,0,'0000-00-00',0),(120100714,0,'0000-00-00',0),(1201007
22,0,'0000-00-00',0),(120100724,0,'0000-00-00',0),(120100727,0,'0000-00-00',0),(120100737,0,'0000-00-
00',0),(120100740,0,'0000-00-00',0),(120100790,0,'0000-00-00',0),(120100794,0,'0000-00-00',0),(1201
00799,0,'0000-00-00',0),(120100805,0,'0000-00-00',0),(120100811,0,'0000-00-00',0),(120100821,0,'000
0-00-00',0),(120100822,0,'0000-00-00',0),(120100824,0,'0000-00-00',0),(120100834,0,'0000-00-00',0),(1
20100836,0,'0000-00-00',0),(120100844,0,'0000-00-00',0),(120100848,0,'0000-00-00',0),(120100852,0,'
0000-00-00',0),(120100853,0,'0000-00-00',0),(120100860,0,'0000-00-00',0),(120100861,0,'0000-00-00',0
),(120100874,0,'0000-00-00',0),(120100878,0,'0000-00-00',0)
```



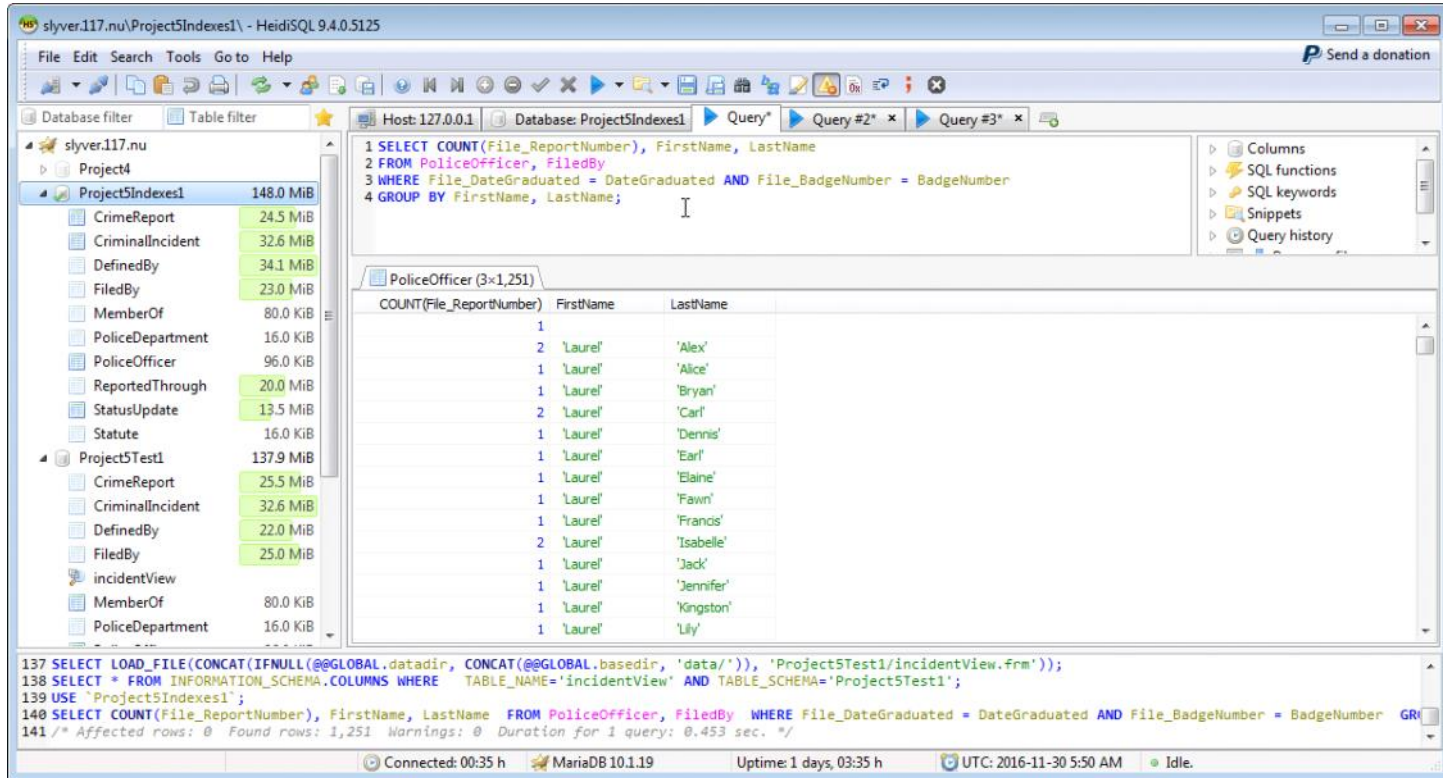
Even more:

```
//The three search queries: count how many reports each officer has filed, find the jurisdiction with the
most
//officers, and locate all reports filed by Precinct 7 police.
```

```

SELECT COUNT(File_ReportNumber), FirstName, LastName
FROM PoliceOfficer, FiledBy
WHERE File_DateGraduated = DateGraduated AND File_BadgeNumber = BadgeNumber
GROUP BY FirstName, LastName;

```

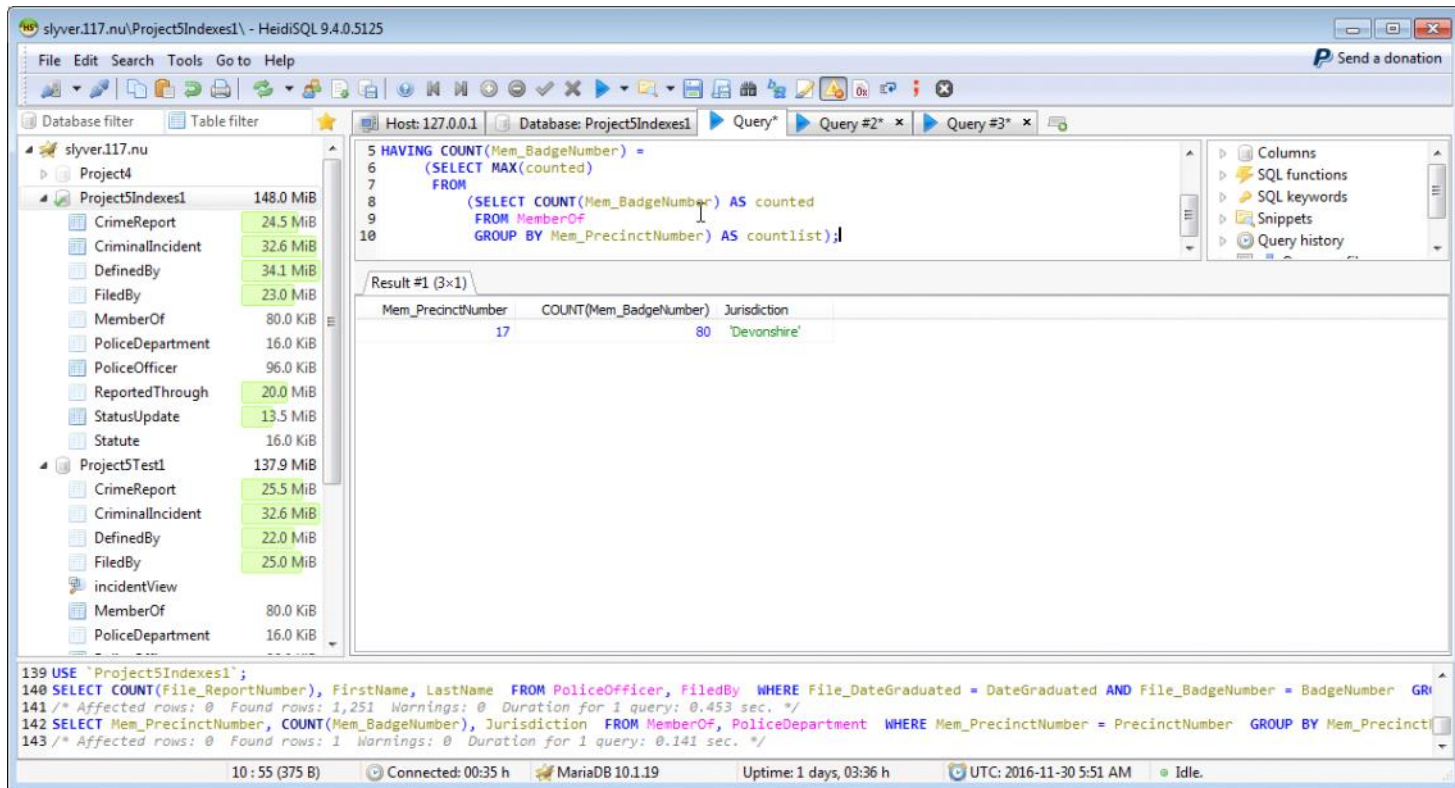


```

SELECT Mem_PrecinctNumber, COUNT(Mem_BadgeNumber), Jurisdiction
FROM MemberOf, PoliceDepartment
WHERE Mem_PrecinctNumber = PrecinctNumber
GROUP BY Mem_PrecinctNumber
HAVING COUNT(Mem_BadgeNumber) =
  (SELECT MAX(counted)
   FROM
     (SELECT COUNT(Mem_BadgeNumber) AS counted
      FROM MemberOf
      GROUP BY Mem_PrecinctNumber) AS countlist);

```





```

SELECT File_ReportNumber, Mem_PrecinctNumber, Jurisdiction
FROM FiledBy, MemberOf, PoliceDepartment
WHERE File_DateGraduated = Mem_DateGraduated AND File_BadgeNumber = Mem_BadgeNumber
AND PrecinctNumber = Mem_PrecinctNumber AND Jurisdiction IN
(SELECT Jurisdiction
FROM PoliceDepartment
WHERE PrecinctNumber = 7);

```

slyver.117.nu\Project5Indexes1 - HeidiSQL 9.4.0.5125

File Edit Search Tools Go to Help

Database filter Table filter Host: 127.0.0.1 Database: Project5Indexes1 Query\* Query #2\* x Query #3\* x

slyver.117.nu

- Project4
  - Project5Indexes1 148.0 MiB
    - CrimeReport 24.5 MiB
    - CriminalIncident 32.6 MiB
    - DefinedBy 34.1 MiB
    - FiledBy 23.0 MiB
    - MemberOf 80.0 KiB
    - PoliceDepartment 16.0 KiB
    - PoliceOfficer 96.0 KiB
    - ReportedThrough 20.0 MiB
    - StatusUpdate 13.5 MiB
    - Statute 16.0 KiB
  - Project5Test1 137.9 MiB
    - CrimeReport 25.5 MiB
    - CriminalIncident 32.6 MiB
    - DefinedBy 22.0 MiB
    - FiledBy 25.0 MiB
    - incidentView 80.0 KiB
    - MemberOf 80.0 KiB
    - PoliceDepartment 16.0 KiB

```

2 FROM FiledBy, MemberOf, PoliceDepartment
3 WHERE File_DateGraduated = Mem_DateGraduated AND File_BadgeNumber = Mem_BadgeNumber
4 AND PrecinctNumber = Mem_PrecinctNumber AND Jurisdiction IN
5 (SELECT Jurisdiction
6 FROM PoliceDepartment
7 WHERE PrecinctNumber = 7);

```

Result #1 (3x20,315)

File_ReportNumber	Mem_PrecinctNumber	Jurisdiction
120,700,582	7	'Wilshire'
120,700,626	7	'Wilshire'
120,700,630	7	'Wilshire'
120,700,636	7	'Wilshire'
120,701,259	7	'Wilshire'
120,701,288	7	'Wilshire'
120,701,312	7	'Wilshire'
120,701,346	7	'Wilshire'
120,704,209	7	'Wilshire'
120,705,113	7	'Wilshire'
120,705,295	7	'Wilshire'
120,705,662	7	'Wilshire'
120,705,813	7	'Wilshire'
120,706,208	7	'Wilshire'
120,706,271	7	'Wilshire'

141 /\* Affected rows: 0 Found rows: 1,251 Warnings: 0 Duration for 1 query: 0.453 sec. \*/

142 SELECT Mem\_PrecinctNumber, COUNT(Mem\_BadgeNumber), Jurisdiction FROM MemberOf, PoliceDepartment WHERE Mem\_PrecinctNumber = PrecinctNumber GROUP BY Mem\_PrecinctNumber

143 /\* Affected rows: 0 Found rows: 1 Warnings: 0 Duration for 1 query: 0.141 sec. \*/

144 SELECT File\_ReportNumber, Mem\_PrecinctNumber, Jurisdiction FROM FiledBy, MemberOf, PoliceDepartment WHERE File\_DateGraduated = Mem\_DateGraduated AND File\_BadgeNumber = Mem\_BadgeNumber

145 /\* Affected rows: 0 Found rows: 20,315 Warnings: 0 Duration for 1 query: 0.109 sec. (+ 0.907 sec. network) \*/

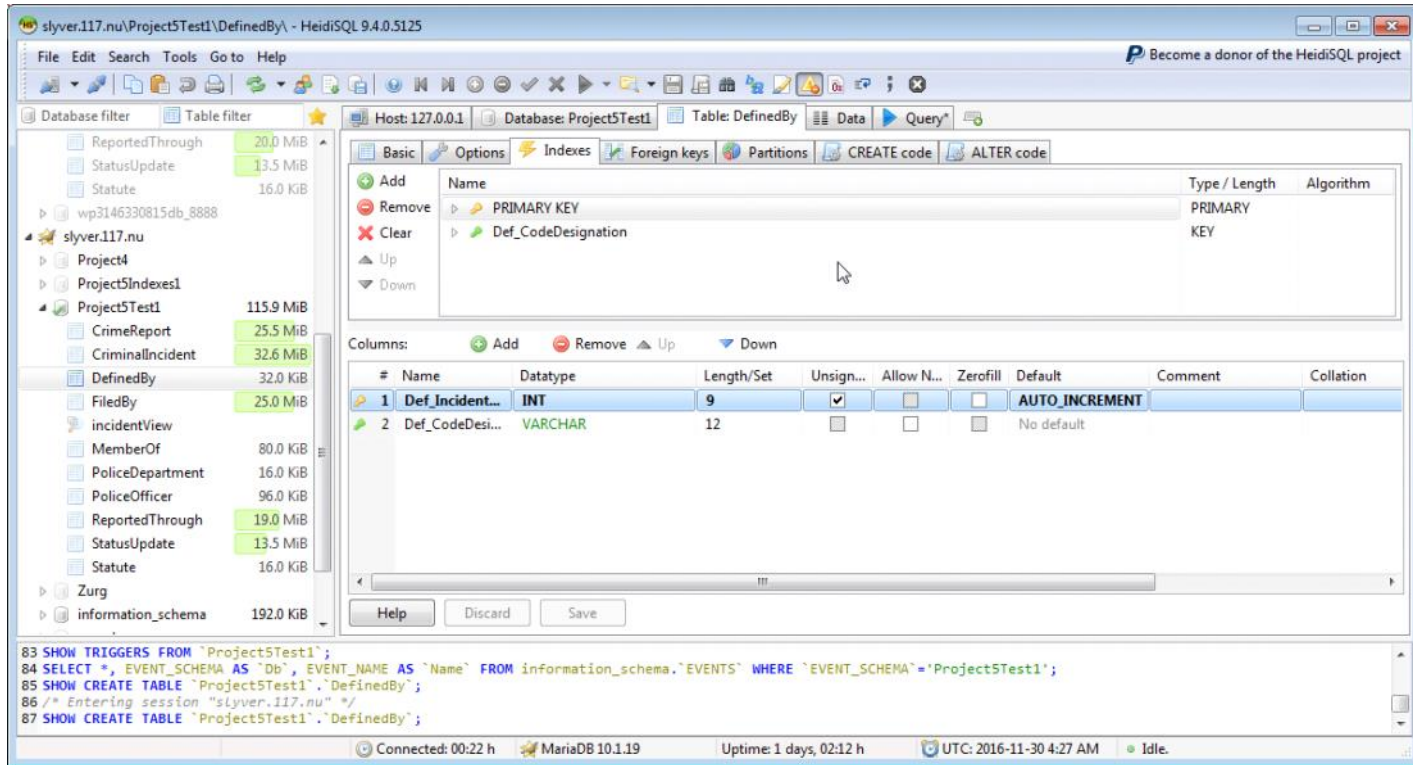
7:33 (342 B) Connected: 00:36 h MariaDB 10.1.19 Uptime: 1 days, 03:37 h UTC: 2016-11-30 5:52 AM Idle.

# Alter Tables

Tuesday, November 29, 2016 10:25 PM

```
ALTER TABLE `DefinedBy`
```

```
CHANGE COLUMN `Def_IncidentNumber` `Def_IncidentNumber` INT(9) UNSIGNED NOT NULL  
AUTO_INCREMENT FIRST;
```

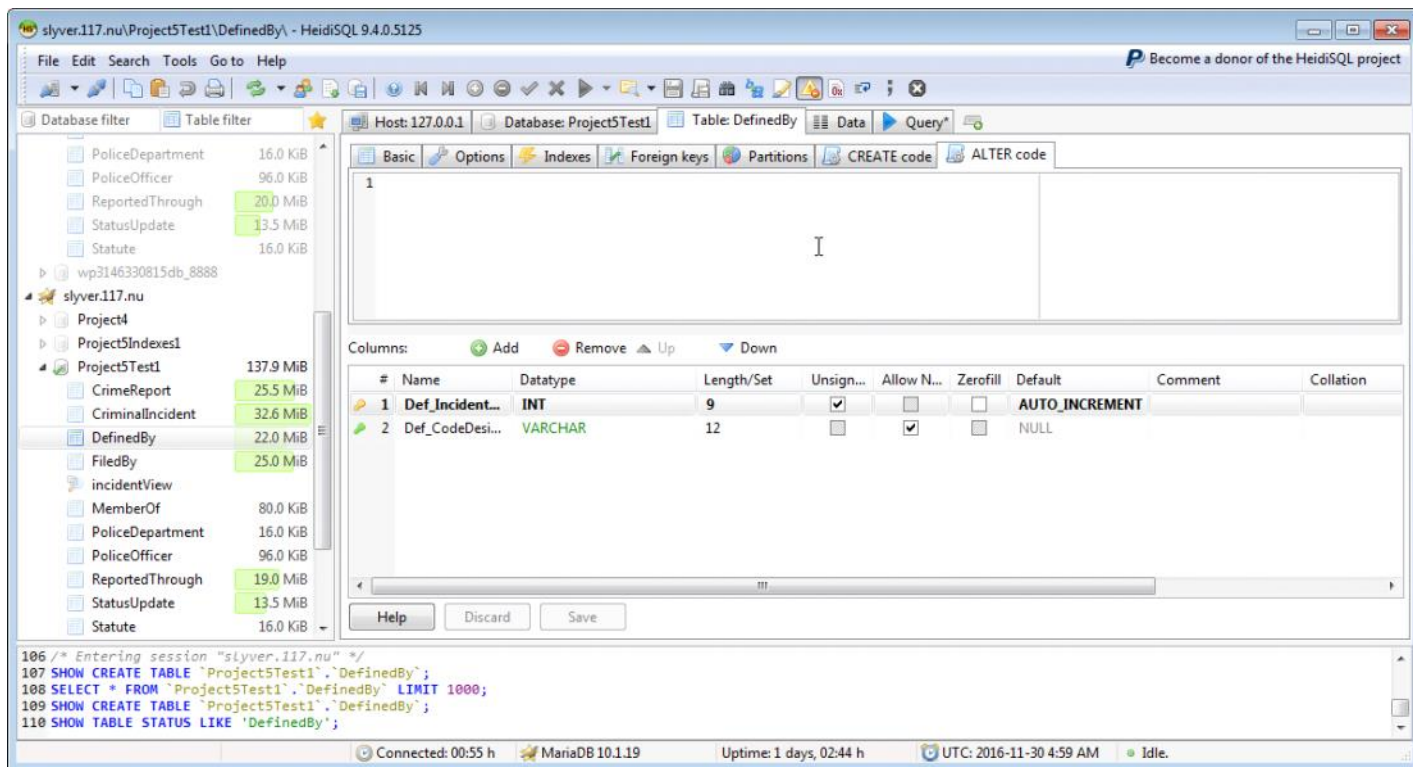


```
ALTER TABLE `DefinedBy`
```

```
ALTER `Def_CodeDesignation` DROP DEFAULT;
```

```
ALTER TABLE `DefinedBy`
```

```
CHANGE COLUMN `Def_IncidentNumber` `Def_IncidentNumber` INT(9) UNSIGNED NOT NULL  
AUTO_INCREMENT FIRST,  
CHANGE COLUMN `Def_CodeDesignation` `Def_CodeDesignation` VARCHAR(12) NULL AFTER  
`Def_IncidentNumber`;
```



```
ALTER TABLE `Statute`
  CHANGE COLUMN `CodeDesignation` `CodeDesignation` VARCHAR(12) NULL DEFAULT NULL
  ON UPDATE CURRENT_TIMESTAMP(12) FIRST;
```

```
ALTER TABLE `Statute`
  ALTER `CodeDesignation` DROP DEFAULT,
  ALTER `ElementsOfCrime` DROP DEFAULT;
ALTER TABLE `Statute`
  CHANGE COLUMN `CodeDesignation` `CodeDesignation` VARCHAR(12) NOT NULL FIRST,
  CHANGE COLUMN `ElementsOfCrime` `ElementsOfCrime` INT(10) UNSIGNED NULL AFTER
  `CodeDesignation`;
```

# Delete

Tuesday, November 29, 2016 10:43 PM

DELETE

FROM Statute

WHERE CodeDesignation = 110;

/\* Affected rows: 2 Found rows: 0 Warnings: 135 Duration for 1 query: 0.109 sec. \*/

The screenshot shows the HeidiSQL interface. The left sidebar displays a database tree with 'Project5Test1' selected, showing tables like CrimeReport, CriminalIncident, DefinedBy, FiledBy, MemberOf, PoliceDepartment, PoliceOfficer, ReportedThrough, StatusUpdate, and Statute. The main query editor contains the following SQL:

```
1 DELETE
2 FROM Statute
3 WHERE CodeDesignation = 110;
```

A warning dialog box is displayed in the center, titled 'slyver.117.nu: Warning'. It contains a yellow warning icon and the text: 'Your query produced 135 warnings.' Below this, it lists the first 5 warnings:

- Warning: Truncated incorrect DOUBLE value: '110, 110'
- Warning: Truncated incorrect DOUBLE value: '111, 111'
- Warning: Truncated incorrect DOUBLE value: '121, 121'
- Warning: Truncated incorrect DOUBLE value: '122, 122'
- Warning: Truncated incorrect DOUBLE value: '210, 210'

The dialog also asks 'Show all warnings in a new query tab?' and provides information about the server variable @@max\_error\_count. At the bottom of the HeidiSQL window, the status bar shows the execution of the query, including the number of affected rows (2), found rows (0), warnings (135), and duration (0.109 sec.).



# Update

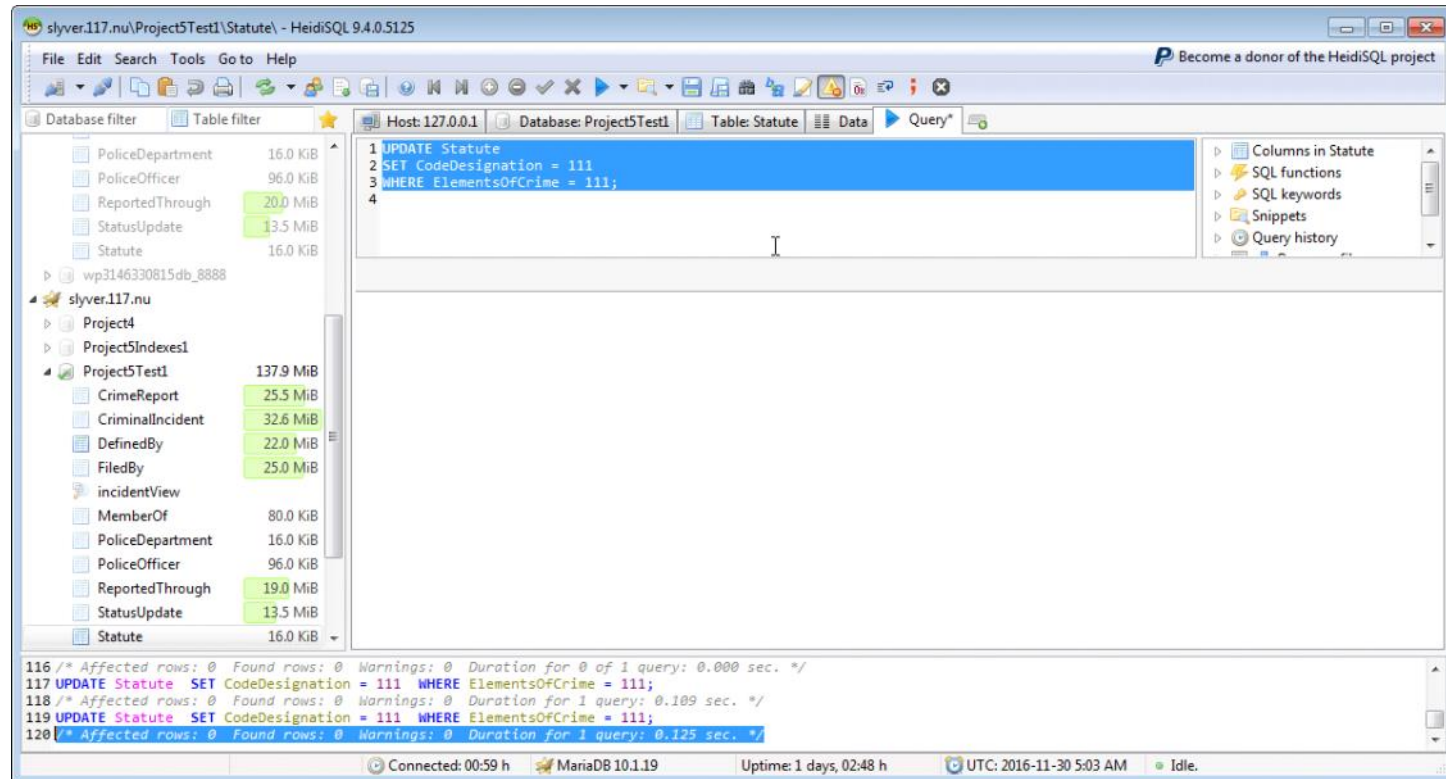
Tuesday, November 29, 2016 11:02 PM

UPDATE Statute

SET CodeDesignation = 111

WHERE ElementsOfCrime = 111;

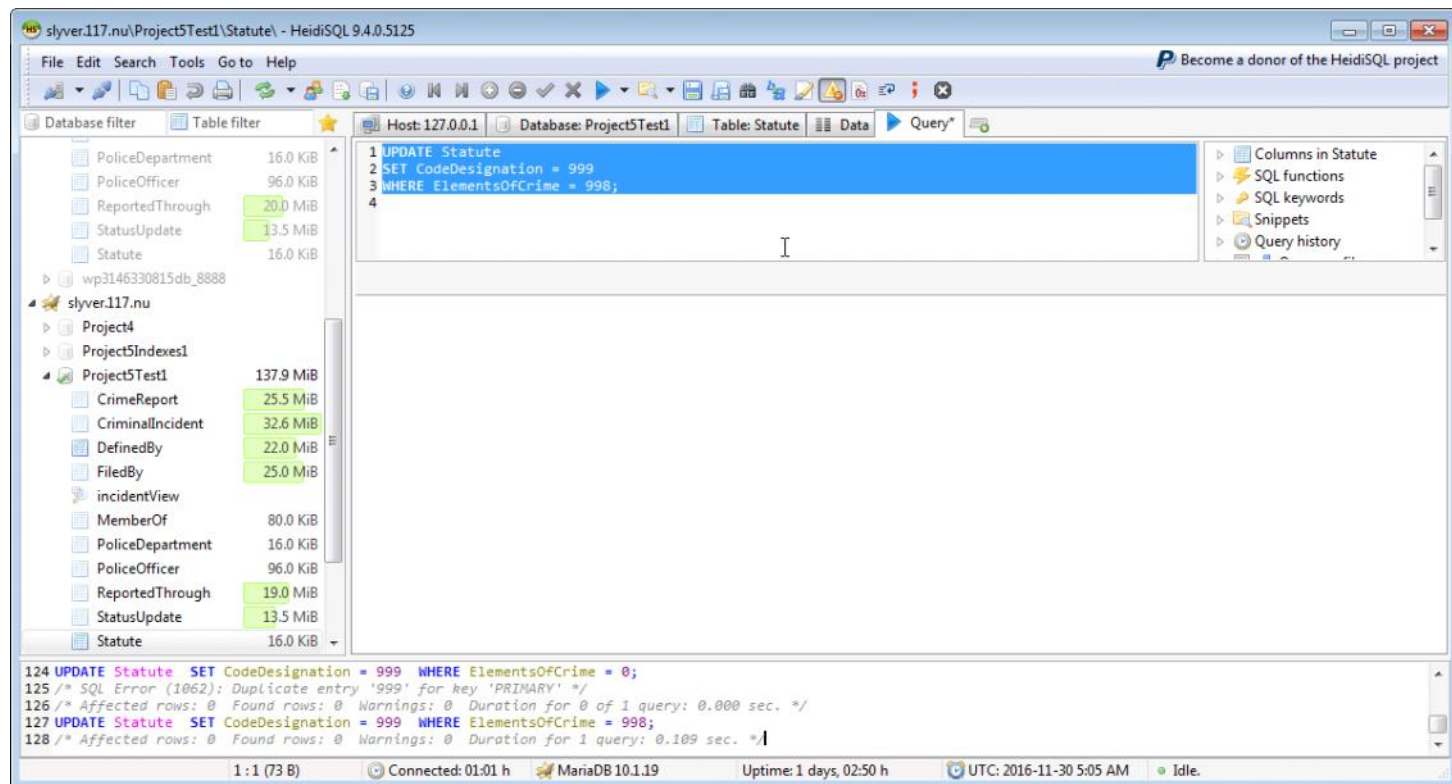
/\* Affected rows: 0 Found rows: 0 Warnings: 0 Duration for 1 query: 0.125 sec. \*/



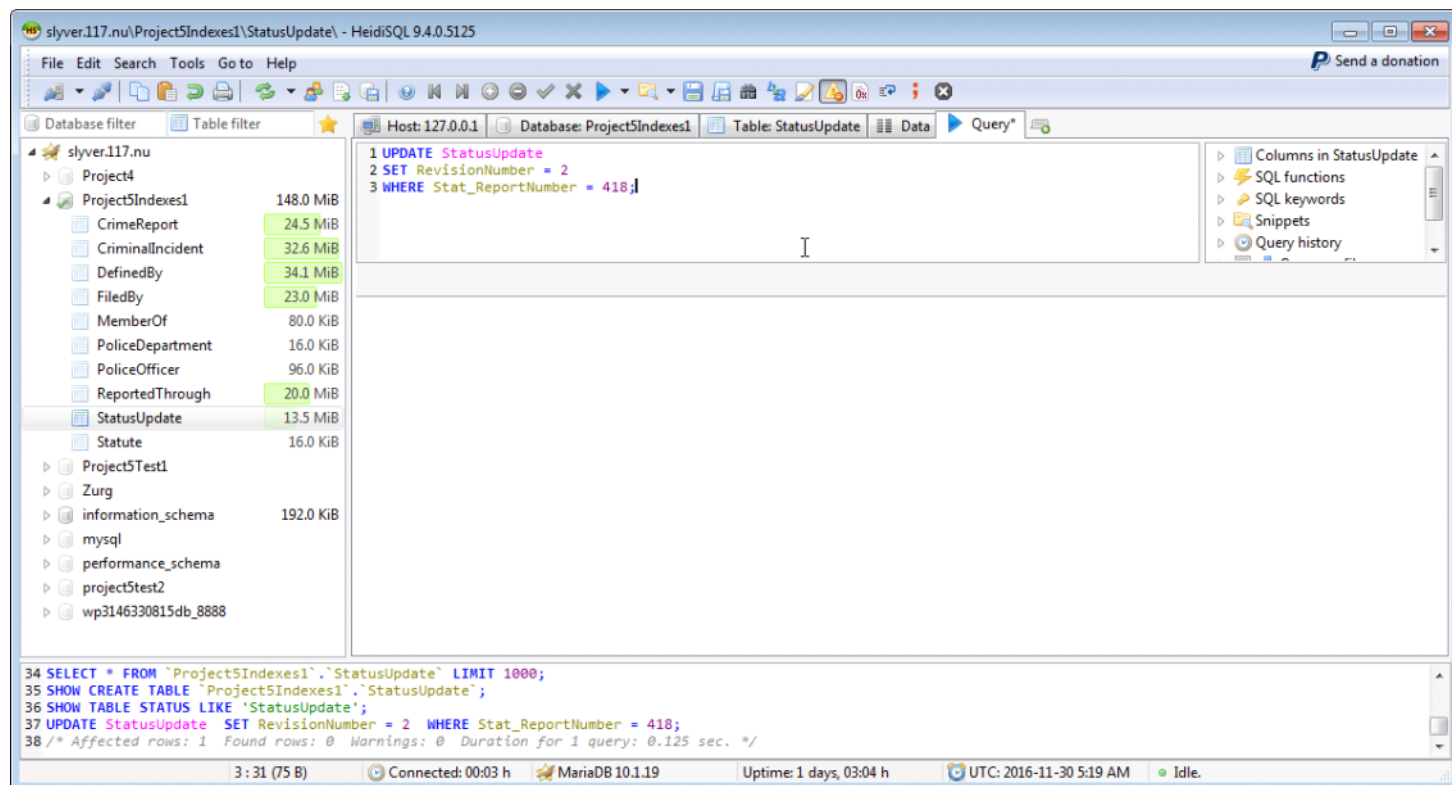
UPDATE Statute

SET CodeDesignation = 999

WHERE ElementsOfCrime = 998;



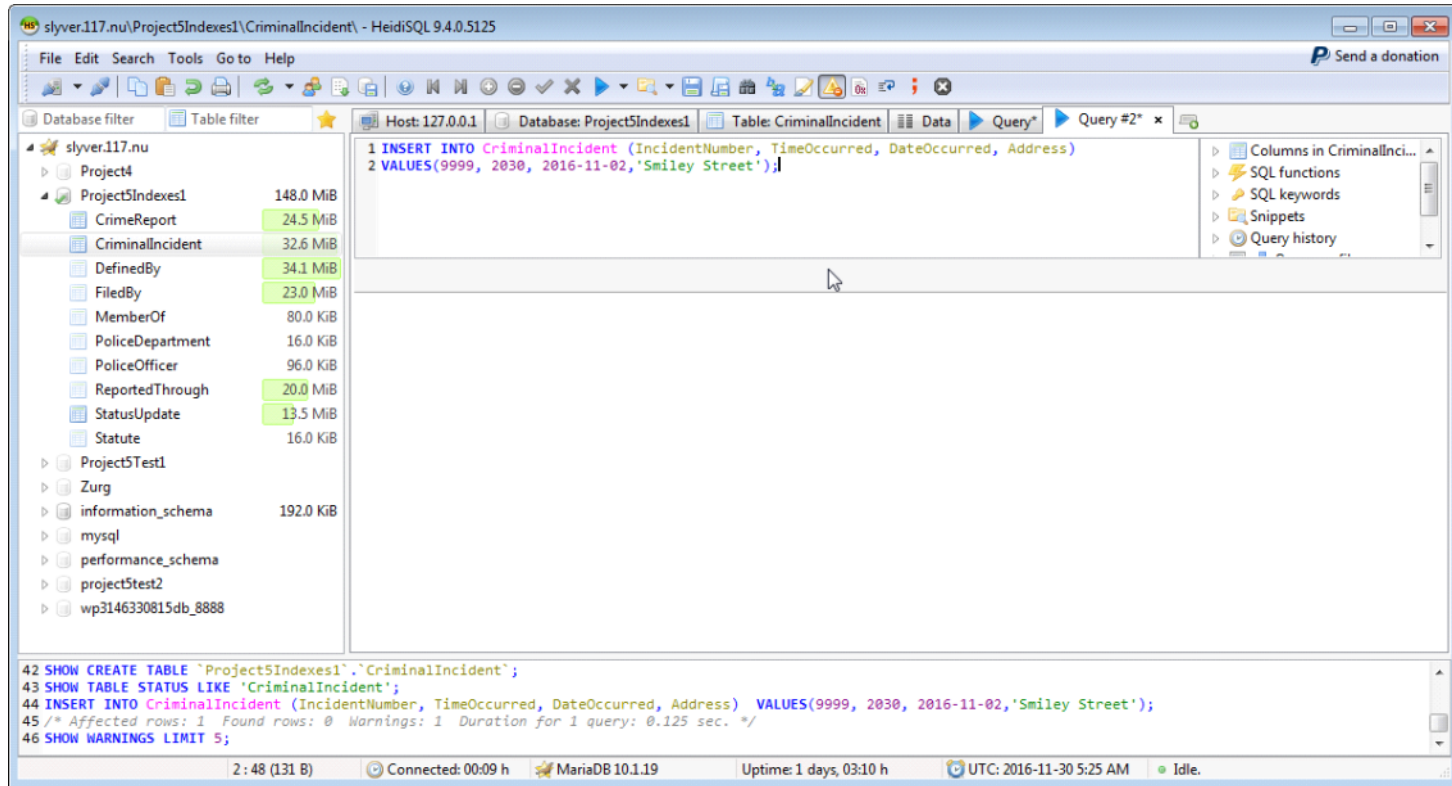
UPDATE StatusUpdate  
SET RevisionNumber = 2  
WHERE Stat\_ReportNumber = 418;  
/\* Affected rows: 1 Found rows: 0 Warnings: 0 Duration for 1 query: 0.125 sec. \*/



# Insert

Tuesday, November 29, 2016 11:24 PM

```
INSERT INTO CriminalIncident (IncidentNumber, TimeOccurred, DateOccurred, Address)
VALUES(9999, 2030, 2016-11-02,'Smiley Street');
```



# VIEW

Tuesday, November 29, 2016 11:27 PM

CREATE VIEW incidentView AS SELECT IncidentNumber FROM CriminalIncident WHERE IncidentNumber IS NOT NULL;

#works demonstrated by

SHOW FULL TABLES IN Project5Test1 WHERE TABLE\_TYPE LIKE 'VIEW';

```
slyver@slyver:/home/charles/cs434
MariaDB [(none)]> use Project5Test1
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MariaDB [Project5Test1]> CREATE VIEW incidentView AS SELECT IncidentNumber FROM
CriminalIncident WHERE IncidentNumber IS NOT NULL;CREATE VIEW incidentView AS SE
LECT IncidentNumber FROM CriminalIncident WHERE IncidentNumber IS NOT NULL;
Query OK, 0 rows affected (0.05 sec)

ERROR 1050 (42S01): Table 'incidentView' already exists
MariaDB [Project5Test1]>
MariaDB [Project5Test1]> SHOW FULL TABLES IN Project5Test1 WHERE TABLE_TYPE LIKE
'VIEW';
+-----+-----+
| Tables_in_Project5Test1 | Table_type |
+-----+-----+
| incidentView           | VIEW       |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [Project5Test1]> CREATE VIEW incidentView AS SELECT IncidentNumber FROM
CriminalIncident WHERE IncidentNumber IS NOT NULL; SHOW FULL TABLES IN Project5T
est1 WHERE TABLE_TYPE LIKE 'VIEW';#
```

```
slyver@slyver:/home/charles/cs434
| 152119415 |
| 152119418 |
| 152119422 |
| 152119430 |
| 152119434 |
| 152119435 |
| 152119436 |
| 152119440 |
| 152119449 |
| 152119451 |
| 152119452 |
| 152119454 |
| 152119458 |
| 152119460 |
| 152119461 |
| 152119462 |
| 152119470 |
| 152119480 |
| 152119490 |
| 152119492 |
| 152119493 |
| 152119498 |
| 152119505 |
| 152119510 |
| 152119511 |
| 152119519 |
| 152119521 |
| 152119523 |
| 152119528 |
| 152119530 |
| 152119531 |
| 152119539 |
| 152119541 |
| 152119542 |
| 152119543 |
| 152119545 |
| 152119547 |
| 152119551 |
| 152119557 |
| 152119559 |
| 152119561 |
| 152119564 |
+-----+
467308 rows in set (0.15 sec)
MariaDB [Project5Test1]> █
```



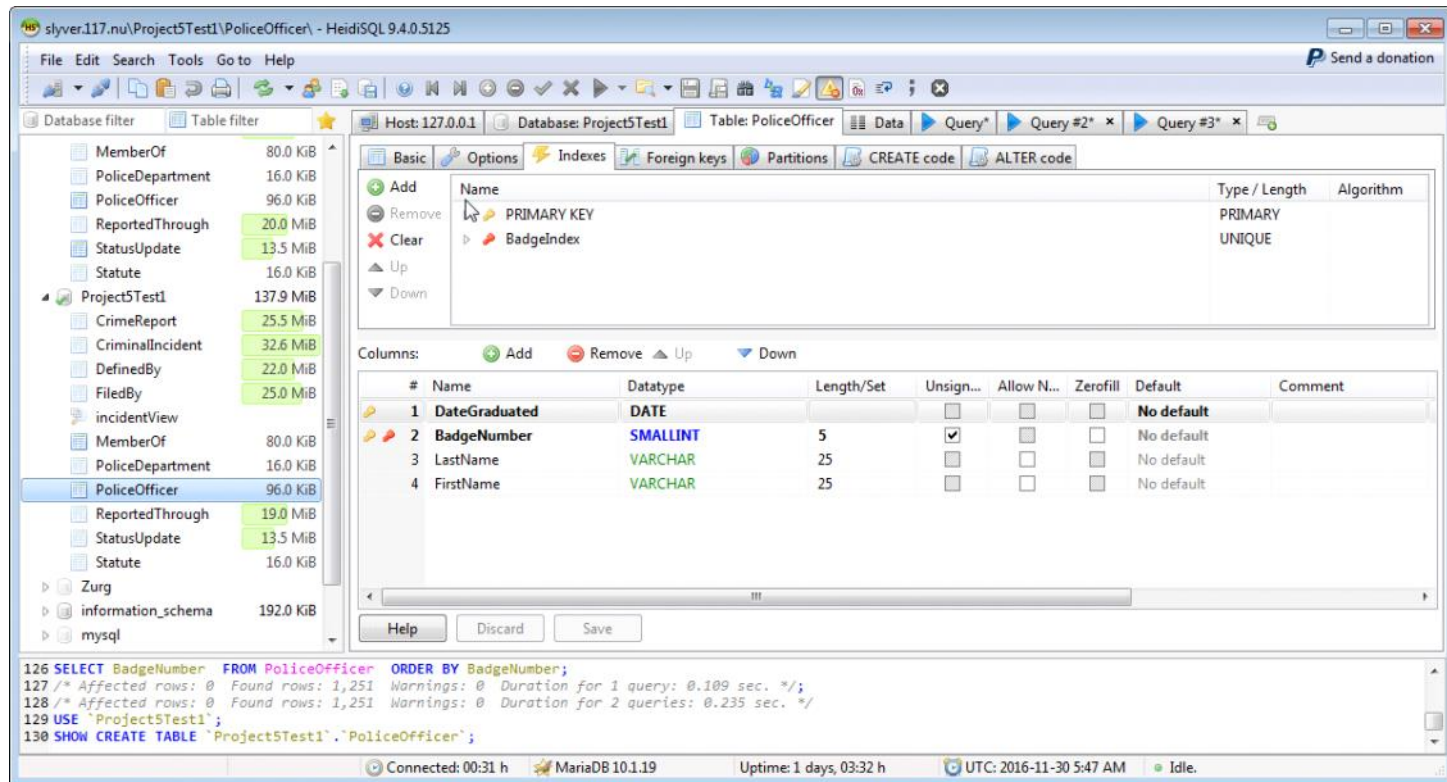
# Index

Tuesday, November 29, 2016 11:30 PM

CREATE UNIQUE INDEX BadgeIndex

ON PoliceOfficer (BadgeNumber);

/\* Affected rows: 0 Found rows: 0 Warnings: 0 Duration for 1 query: 0.281 sec. \*/



Without Index:

SELECT BadgeNumber

FROM PoliceOfficer

ORDER BY BadgeNumber;

/\* Affected rows: 0 Found rows: 1,251 Warnings: 0 Duration for 2 queries: 0.235 sec. \*/

With Index:

SELECT BadgeNumber

FROM PoliceOfficer

ORDER BY BadgeNumber;

/\* Affected rows: 0 Found rows: 1,251 Warnings: 0 Duration for 1 query: 0.109 sec. \*/

# ER DIAGRAM

Tuesday, November 29, 2016 11:54 PM

Refer to Email for higher resolution.

