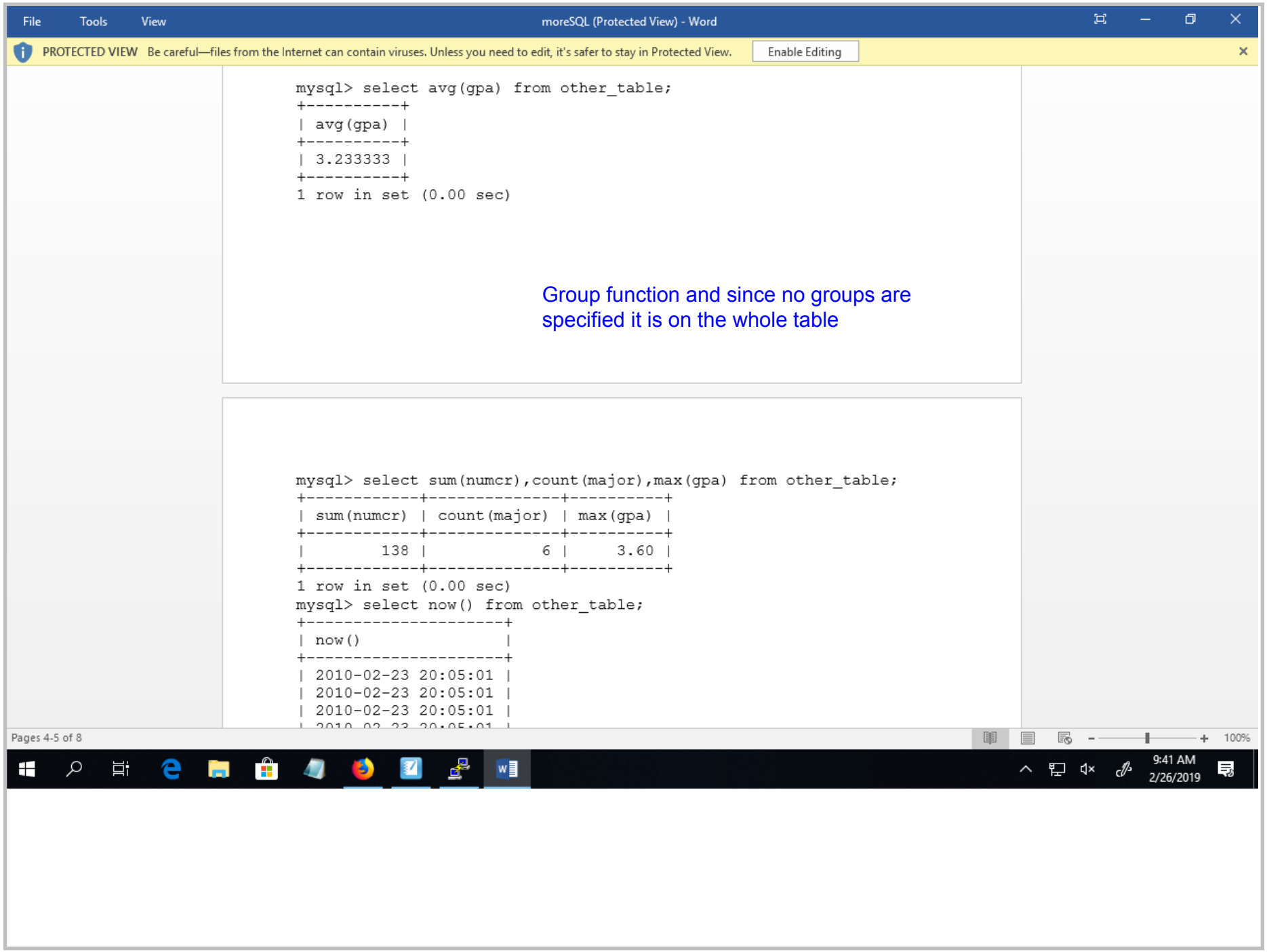
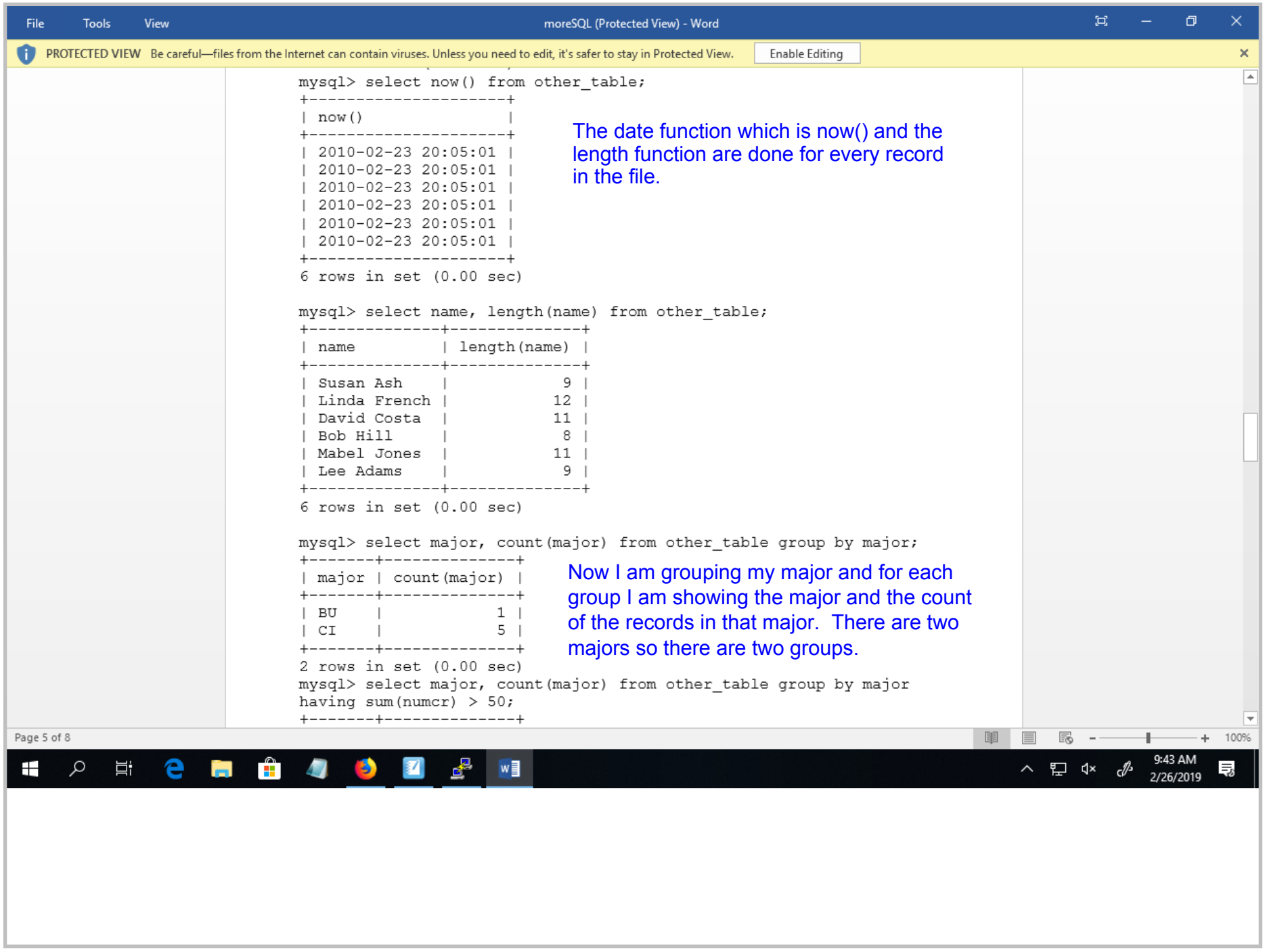

File
Tools
View
moreSQL (Protected View) - Word
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View.
Enable Editing
mysql> select avg(gpa) from other_table;
+----------+
| avg(gpa) |
+----------+
| 3.233333 |
+----------+
1 row in set (0.00 sec)
Group function and since no groups are specified it is on the whole table
mysql> select sum(numcr),count(major),max(gpa) from other_table;
+------------+--------------+----------+
| sum(numcr) | count(major) | max(gpa) |
+------------+--------------+----------+
| 138 | 6 | 3.60 |
+------------+--------------+----------+
1 row in set (0.00 sec)
mysql> select now() from other_table;
+---------------------+
| now() |
+---------------------+
| 2010-02-23 20:05:01 |
| 2010-02-23 20:05:01 |
| 2010-02-23 20:05:01 |
Pages 4-5 of 8
100%
9:41 AM
2/26/2019


File
Tools
View
moreSQL (Protected View) - Word
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View.
Enable Editing
mysql> select now() from other_table;
+---------------------+
| now() |
+---------------------+
| 2010-02-23 20:05:01 |
| 2010-02-23 20:05:01 |
| 2010-02-23 20:05:01 |
| 2010-02-23 20:05:01 |
| 2010-02-23 20:05:01 |
| 2010-02-23 20:05:01 |
+---------------------+
6 rows in set (0.00 sec)
mysql> select name, length(name) from other_table;
+--------------+--------------+
| name | length(name) |
+--------------+--------------+
Susan Ash	9
Linda French	12
David Costa	11
Bob Hill	8
Mabel Jones	11
Lee Adams	9
+--------------+--------------+
6 rows in set (0.00 sec)
mysql> select major, count(major) from other_table group by major;
+-------+--------------+
| major | count(major) |
+-------+--------------+
| BU | 1 |
| CI | 5 |
+-------+--------------+
2 rows in set (0.00 sec)
mysql> select major, count(major) from other_table group by major
having sum(numcr) > 50;
+-------+--------------+
The date function which is now() and the length function are done for every record in the file.
Now I am grouping my major and for each group I am showing the major and the count of the records in that major. There are two majors so there are two groups.
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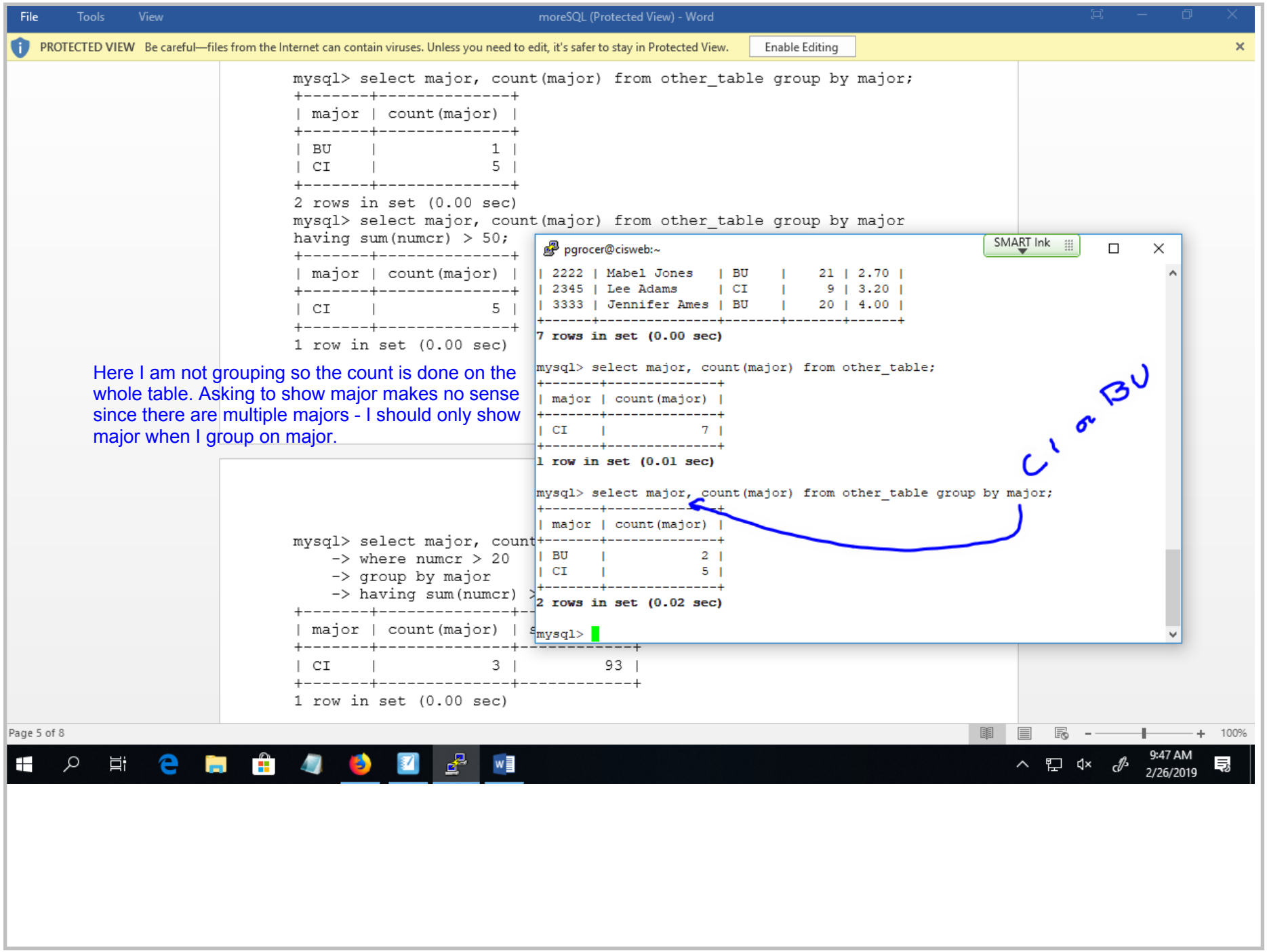
2/26/2019


File Tools View moreSQL (Protected View) - Word
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. Enable Editing
mysql> select major, count(major) from other_table group by major;
+-------+--------------+
| major | count(major) |
+-------+--------------+
| BU | 1 |
| CI | 5 |
+-------+--------------+
2 rows in set (0.00 sec)
mysql> select major, count(major) from other_table group by major
having sum(numcr) > 50;
+-------+--------------+
| major | count(major) |
+-------+--------------+
| CI | 5 |
+-------+--------------+
1 row in set (0.00 sec)
Here I am not grouping so the count is done on the whole table. Asking to show major makes no sense since there are multiple majors - I should only show major when I group on major.
mysql> select major, count
-> where numcr > 20
-> group by major
-> having sum(numcr) >
| major | count(major) | s
| CI | 3 | 93 |
1 row in set (0.00 sec)
pgrocer@cisweb:~
SMART Ink
2222	Mabel Jones	BU	21	2.70
2345	Lee Adams	CI	9	3.20
3333	Jennifer Ames	BU	20	4.00
7 rows in set (0.00 sec)
mysql> select major, count(major) from other_table;
major	count(major)
CI	7
1 row in set (0.01 sec)
mysql> select major, count(major) from other_table group by major;
major	count(major)
BU	2
CI	5
2 rows in set (0.02 sec)
mysql>
CI & BU
Page 5 of 8
100%
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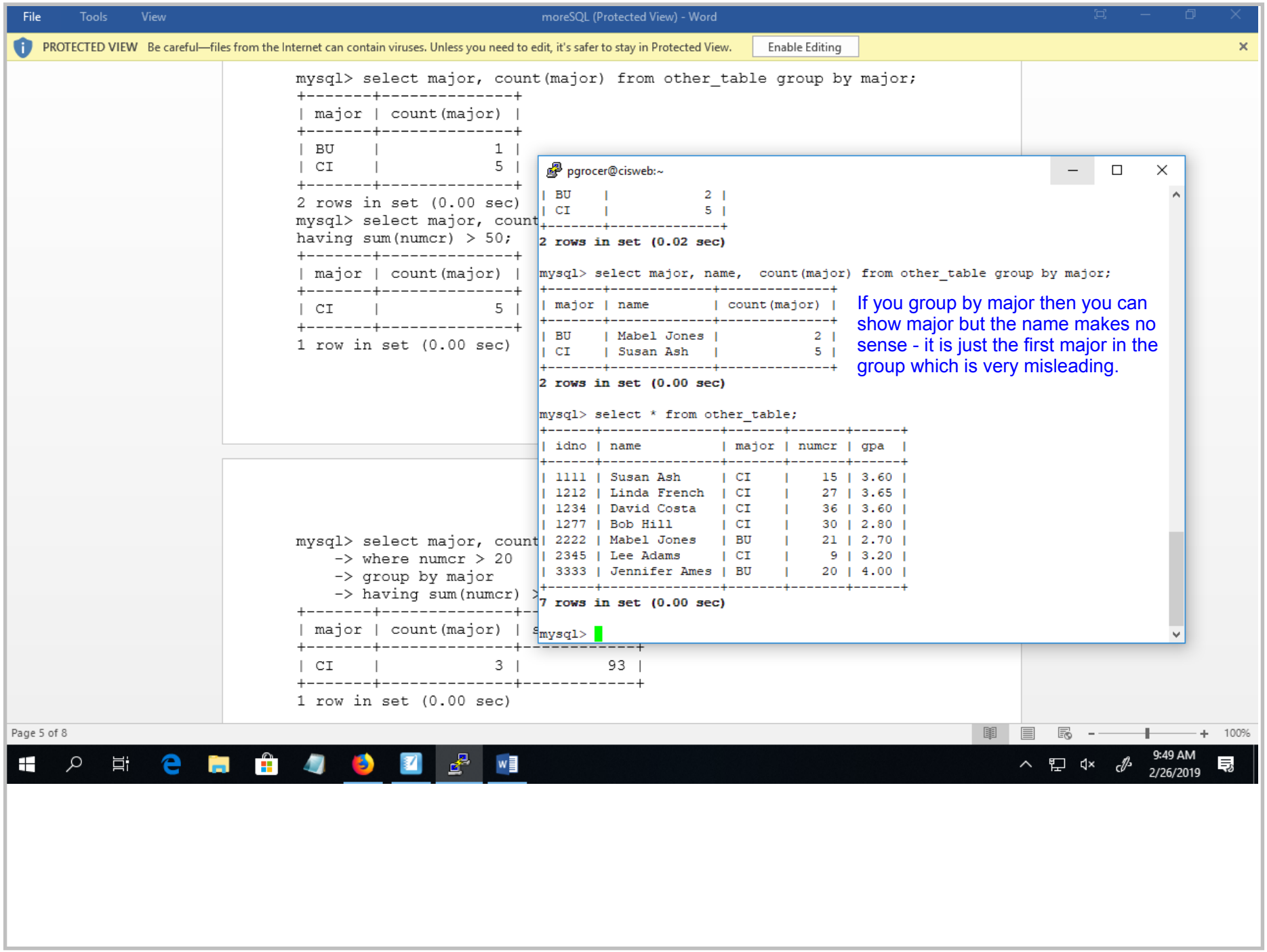
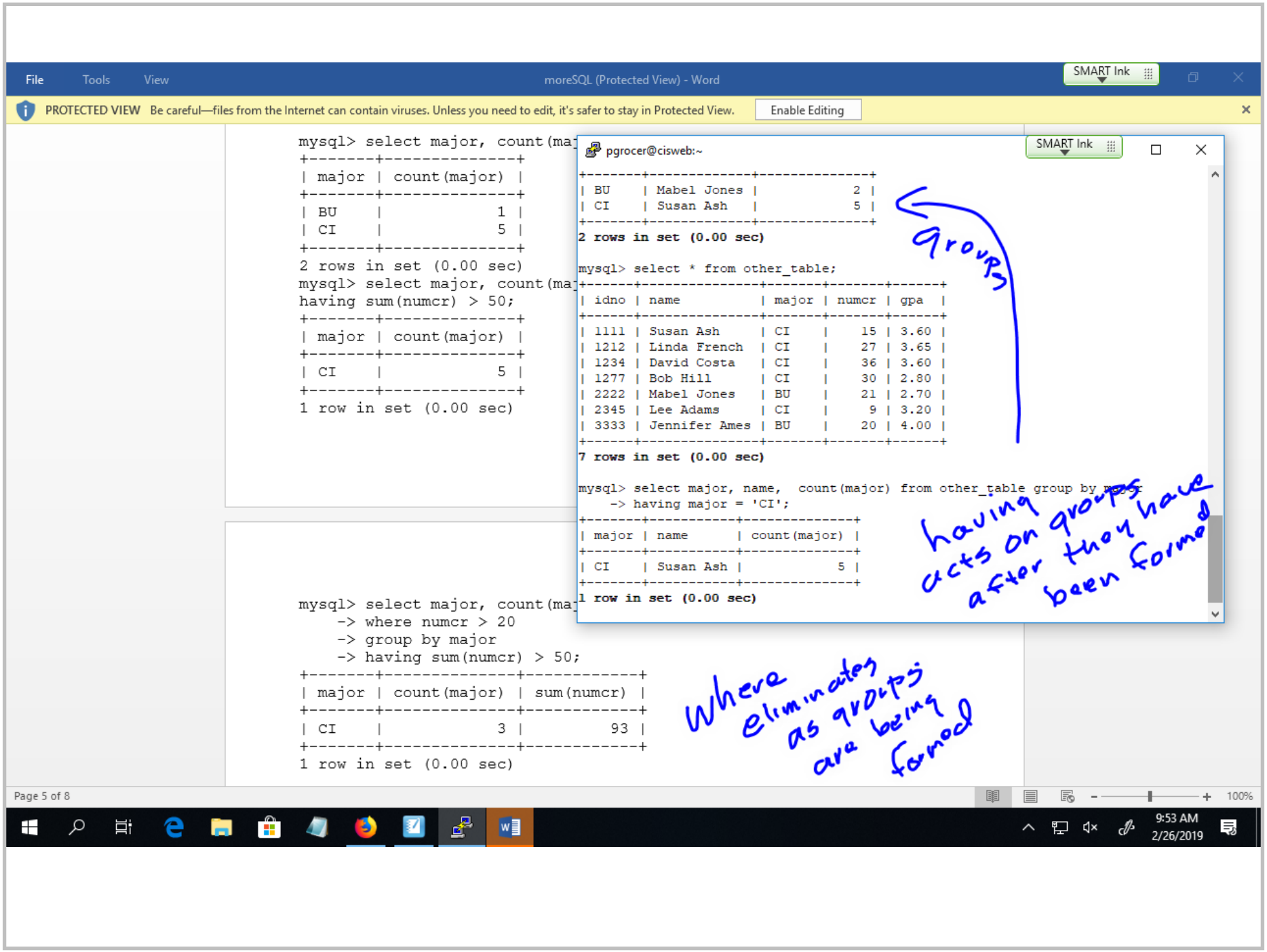
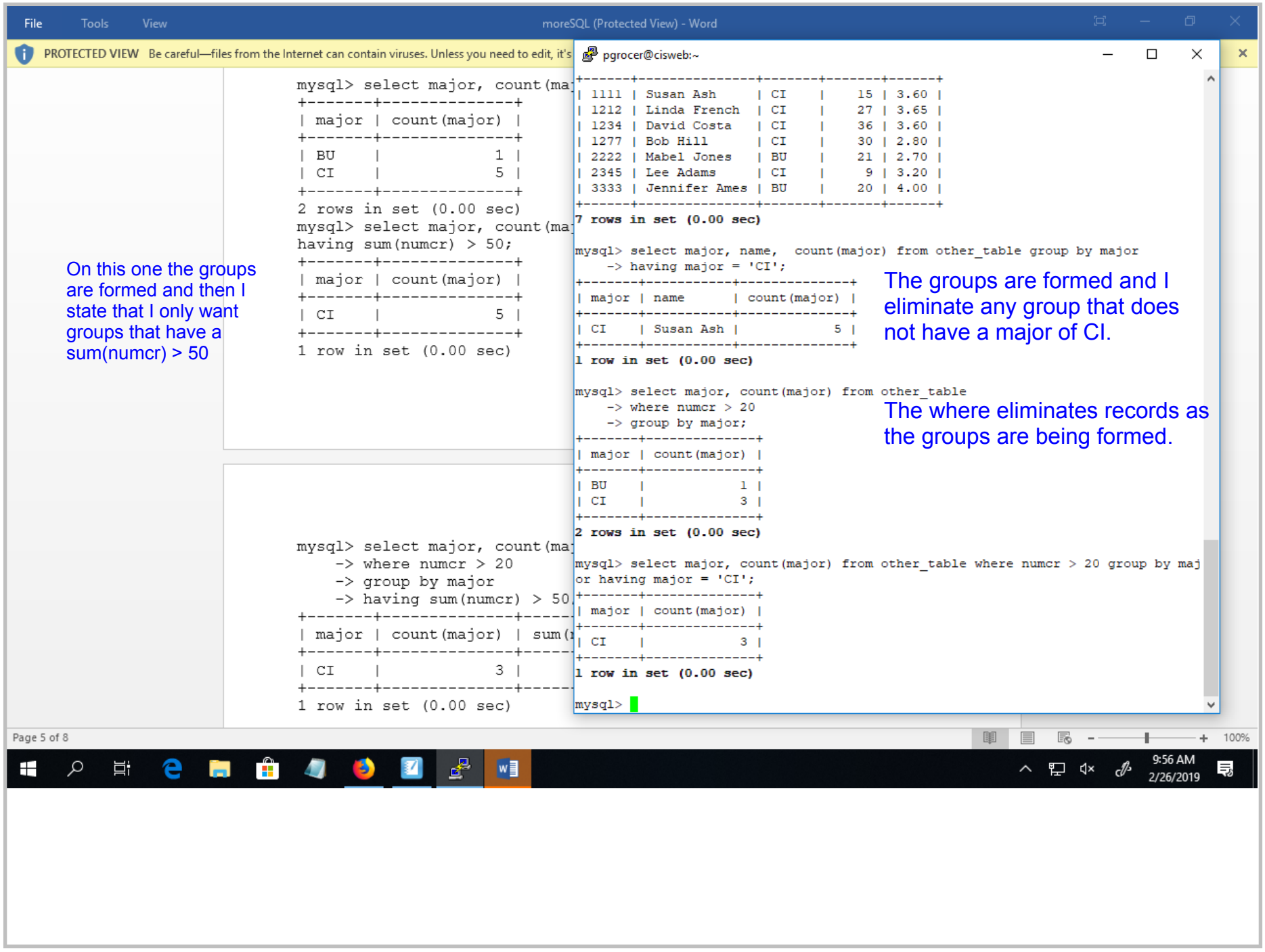
2/26/2019


File Tools View moreSQL (Protected View) - Word
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. Enable Editing
mysql> select major, count(major) from other_table group by major;
major	count(major)
BU	1
CI	5
2 rows in set (0.00 sec)
mysql> select major, count
having sum(numcr) > 50;
major	count(major)
CI	5
1 row in set (0.00 sec)
mysql> select major, count
-> where numcr > 20
-> group by major
-> having sum(numcr) >
| major | count(major) | s
| CI | 3 | 93 |
1 row in set (0.00 sec)
pgrocer@cisweb:~
| BU | 2 |
| CI | 5 |
2 rows in set (0.02 sec)
mysql> select major, name, count(major) from other_table group by major;
major	name	count(major)
BU	Mabel Jones	2
CI	Susan Ash	5
2 rows in set (0.00 sec)
If you group by major then you can show major but the name makes no sense - it is just the first major in the group which is very misleading.
mysql> select * from other_table;
idno	name	major	numcr	gpa
1111	Susan Ash	CI	15	3.60
1212	Linda French	CI	27	3.65
1234	David Costa	CI	36	3.60
1277	Bob Hill	CI	30	2.80
2222	Mabel Jones	BU	21	2.70
2345	Lee Adams	CI	9	3.20
3333	Jennifer Ames	BU	20	4.00
7 rows in set (0.00 sec)
mysql>
Page 5 of 8
100%
9:49 AM
2/26/2019

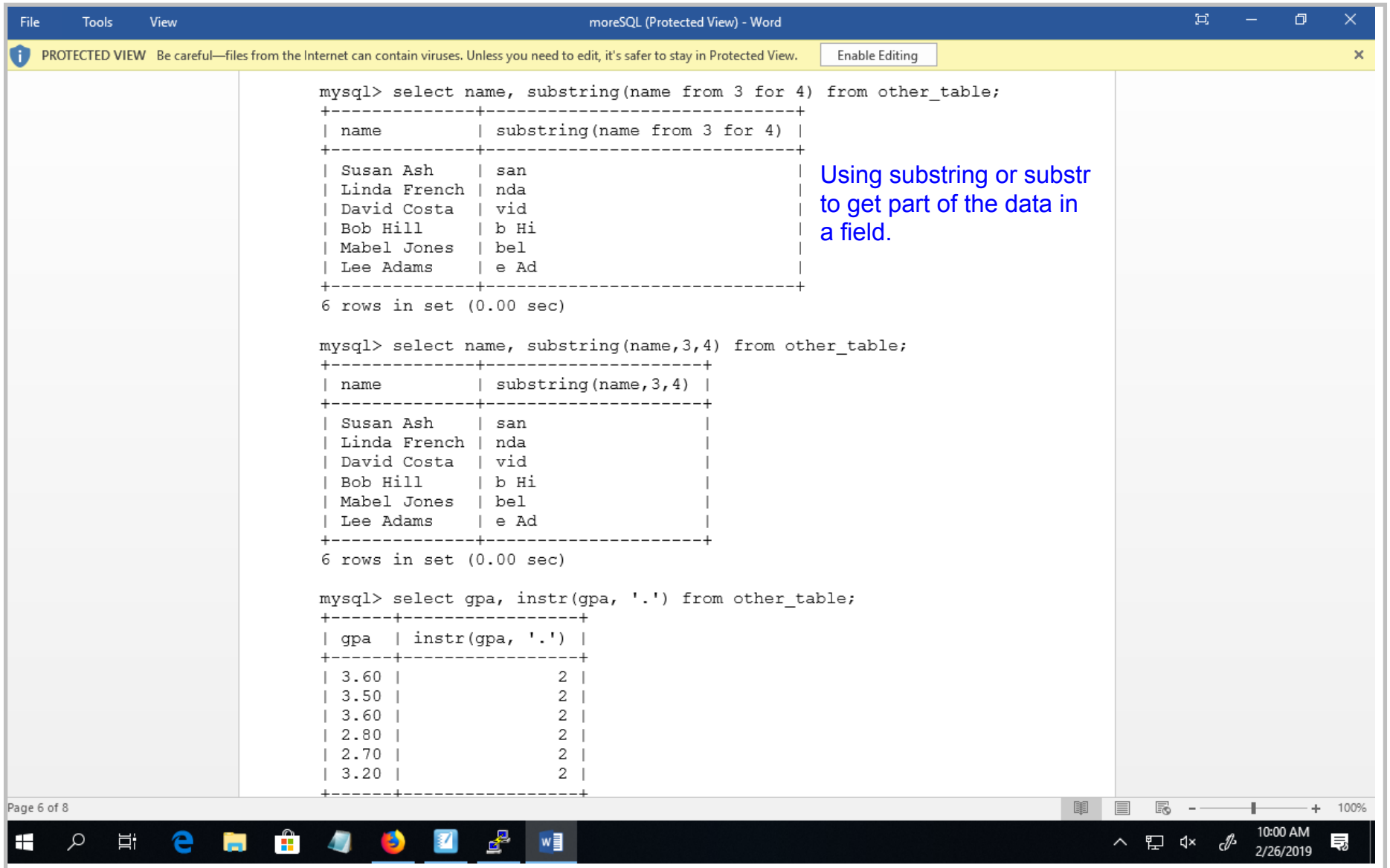

File Tools View moreSQL (Protected View) - Word
SMART Ink
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. Enable Editing
mysql> select major, count(ma
+-------+--------------+
| major | count(major) |
+-------+--------------+
| BU | 1 |
| CI | 5 |
+-------+--------------+
2 rows in set (0.00 sec)
mysql> select major, count(ma
having sum(numcr) > 50;
+-------+--------------+
| major | count(major) |
+-------+--------------+
| CI | 5 |
+-------+--------------+
1 row in set (0.00 sec)
pgrocer@cisweb:~
SMART Ink
+-------+-------------+--------------+
| BU | Mabel Jones | 2 |
| CI | Susan Ash | 5 |
+-------+-------------+--------------+
2 rows in set (0.00 sec)
mysql> select * from other_table;
+------+---------------+-------+-------+------+
| idno | name | major | numcr | gpa |
+------+---------------+-------+-------+------+
1111	Susan Ash	CI	15	3.60
1212	Linda French	CI	27	3.65
1234	David Costa	CI	36	3.60
1277	Bob Hill	CI	30	2.80
2222	Mabel Jones	BU	21	2.70
2345	Lee Adams	CI	9	3.20
3333	Jennifer Ames	BU	20	4.00
+------+---------------+-------+-------+------+
7 rows in set (0.00 sec)
mysql> select major, name, count(major) from other_table group by major
-> having major = 'CI';
+-------+-----------+--------------+
| major | name | count(major) |
+-------+-----------+--------------+
| CI | Susan Ash | 5 |
+-------+-----------+--------------+
1 row in set (0.00 sec)
groups
having acts on groups after they have been formed
mysql> select major, count(ma
-> where numcr > 20
-> group by major
-> having sum(numcr) > 50;
+-------+--------------+-------------+
| major | count(major) | sum(numcr) |
+-------+--------------+-------------+
| CI | 3 | 93 |
+-------+--------------+-------------+
1 row in set (0.00 sec)
Where eliminates as groups are being formed
Page 5 of 8
100%
9:53 AM
2/26/2019

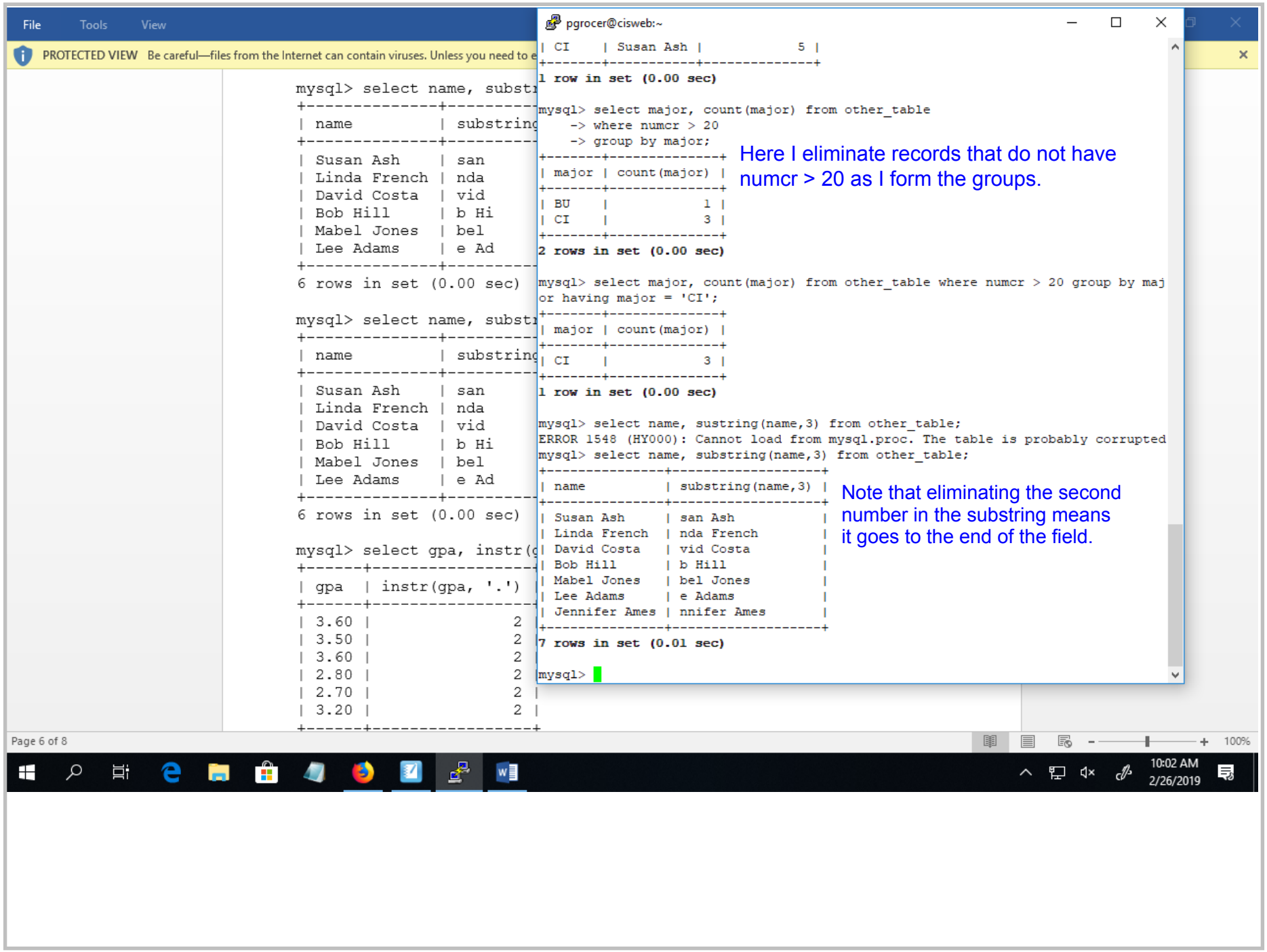



```
mysql> select major, count(maj
+-------+--------------+
| major | count(major) |
+-------+--------------+
| BU    |            1 |
| CI    |            5 |
+-------+--------------+
2 rows in set (0.00 sec)
mysql> select major, count(maj
having sum(numcr) > 50;
+-------+--------------+
| major | count(major) |
+-------+--------------+
| CI    |            5 |
+-------+--------------+
1 row in set (0.00 sec)
```

```
mysql> select major, count(maj
    -> where numcr > 20
    -> group by major
    -> having sum(numcr) > 50;
+-------+--------------+-----
| major | count(major) | sum(
+-------+--------------+-----
| CI    |            3 |
+-------+--------------+-----
1 row in set (0.00 sec)
```

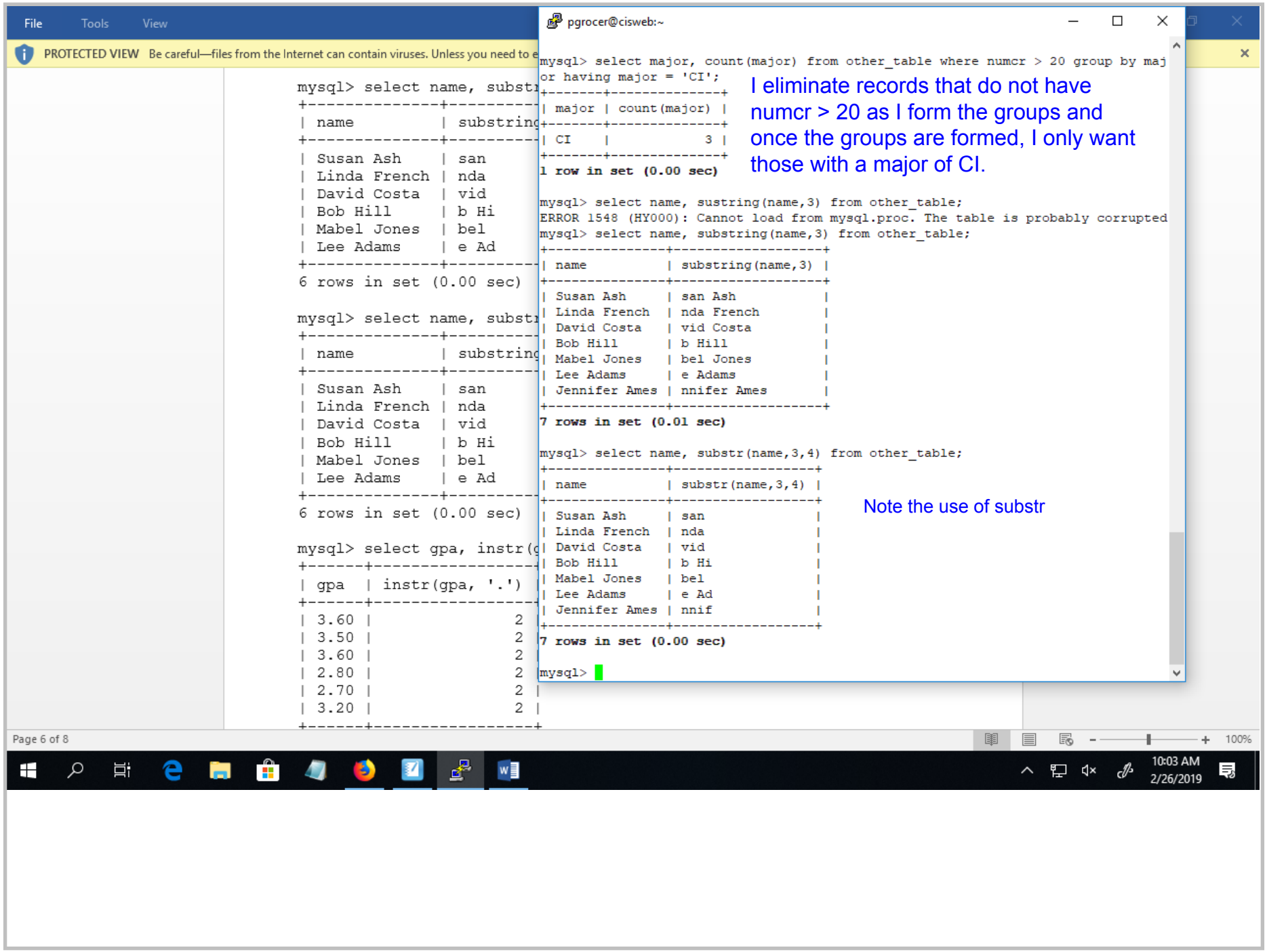
```
+------+---------------+-------+-------+------+
| 1111 | Susan Ash     | CI    |    15 | 3.60 |
| 1212 | Linda French  | CI    |    27 | 3.65 |
| 1234 | David Costa   | CI    |    36 | 3.60 |
| 1277 | Bob Hill      | CI    |    30 | 2.80 |
| 2222 | Mabel Jones   | BU    |    21 | 2.70 |
| 2345 | Lee Adams     | CI    |     9 | 3.20 |
| 3333 | Jennifer Ames | BU    |    20 | 4.00 |
+------+---------------+-------+-------+------+
7 rows in set (0.00 sec)

mysql> select major, name,  count(major) from other_table group by major
    -> having major = 'CI';
+-------+-----------+--------------+
| major | name      | count(major) |
+-------+-----------+--------------+
| CI    | Susan Ash |            5 |
+-------+-----------+--------------+
1 row in set (0.00 sec)

mysql> select major, count(major) from other_table
    -> where numcr > 20
    -> group by major;
+-------+--------------+
| major | count(major) |
+-------+--------------+
| BU    |            1 |
| CI    |            3 |
+-------+--------------+
2 rows in set (0.00 sec)

mysql> select major, count(major) from other_table where numcr > 20 group by maj
or having major = 'CI';
+-------+--------------+
| major | count(major) |
+-------+--------------+
| CI    |            3 |
+-------+--------------+
1 row in set (0.00 sec)

mysql>
```

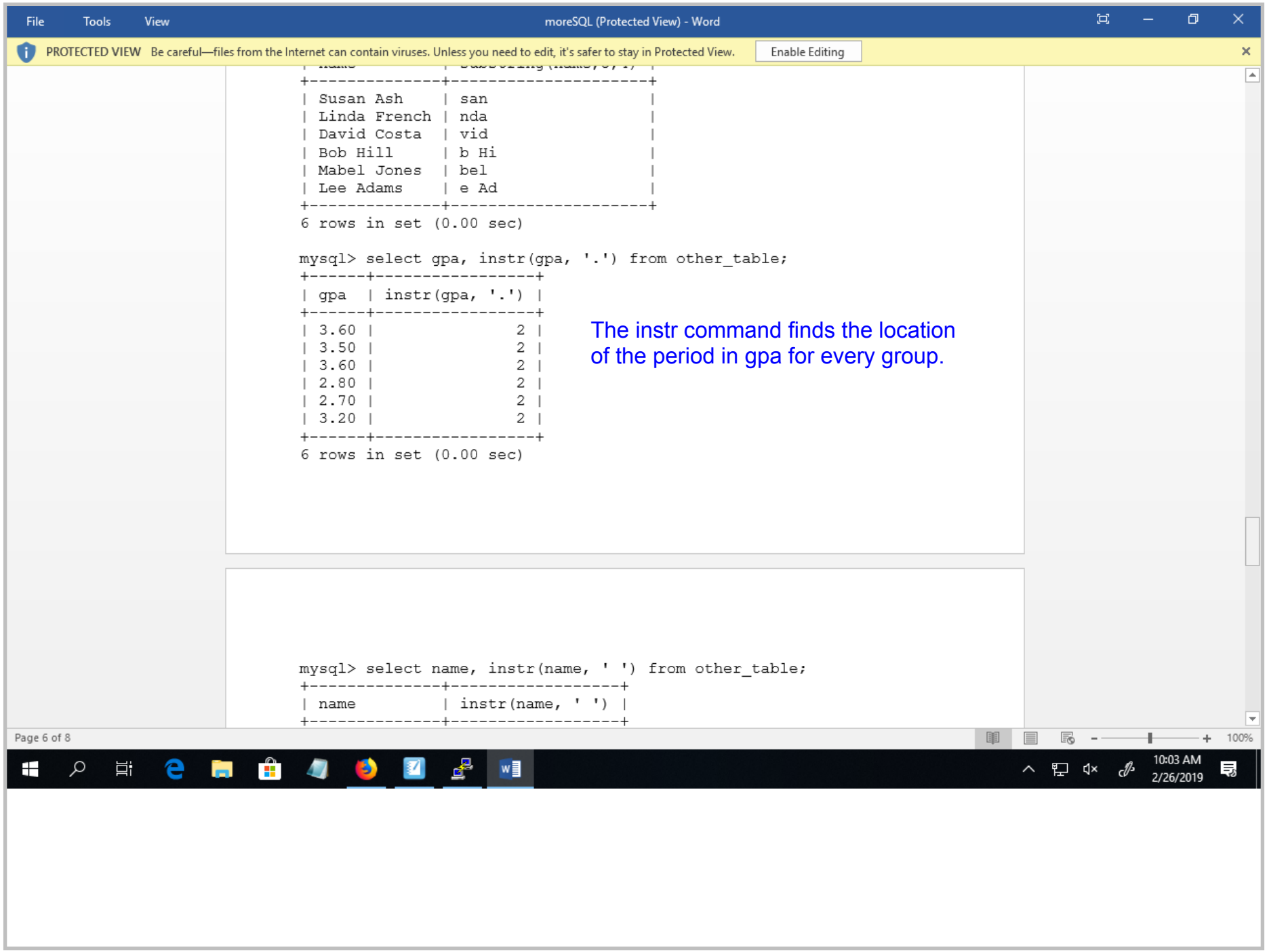

File
Tools
View
moreSQL (Protected View) - Word
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View.
Enable Editing
mysql> select name, substring(name from 3 for 4) from other_table;
+--------------+------------------------------+
| name | substring(name from 3 for 4) |
+--------------+------------------------------+
Susan Ash	san
Linda French	nda
David Costa	vid
Bob Hill	b Hi
Mabel Jones	bel
Lee Adams	e Ad
+--------------+------------------------------+
6 rows in set (0.00 sec)
mysql> select name, substring(name,3,4) from other_table;
+--------------+----------------------+
| name | substring(name,3,4) |
+--------------+----------------------+
Susan Ash	san
Linda French	nda
David Costa	vid
Bob Hill	b Hi
Mabel Jones	bel
Lee Adams	e Ad
+--------------+----------------------+
6 rows in set (0.00 sec)
mysql> select gpa, instr(gpa, '.') from other_table;
+------+-----------------+
| gpa | instr(gpa, '.') |
+------+-----------------+
3.60	2
3.50	2
3.60	2
2.80	2
2.70	2
3.20	2
+------+-----------------+
Using substring or substr to get part of the data in a field.
Page 6 of 8
100%
10:00 AM
2/26/2019




```
mysql> select name, substr
+--------------+----------
| name         | substring
+--------------+----------
| Susan Ash    | san
| Linda French | nda
| David Costa  | vid
| Bob Hill     | b Hi
| Mabel Jones  | bel
| Lee Adams    | e Ad
+--------------+----------
6 rows in set (0.00 sec)

mysql> select name, substr
+--------------+----------
| name         | substring
+--------------+----------
| Susan Ash    | san
| Linda French | nda
| David Costa  | vid
| Bob Hill     | b Hi
| Mabel Jones  | bel
| Lee Adams    | e Ad
+--------------+----------
6 rows in set (0.00 sec)

mysql> select gpa, instr(g
+------+------------------+
| gpa  | instr(gpa, '.') |
+------+------------------+
| 3.60 |                2 |
| 3.50 |                2 |
| 3.60 |                2 |
| 2.80 |                2 |
| 2.70 |                2 |
| 3.20 |                2 |
+------+------------------+
```

```
| CI     | Susan Ash |             5 |
+--------+-----------+---------------+
1 row in set (0.00 sec)

mysql> select major, count(major) from other_table
    -> where numcr > 20
    -> group by major;
+--------+--------------+
| major | count(major) |
+--------+--------------+
| BU     |            1 |
| CI     |            3 |
+--------+--------------+
2 rows in set (0.00 sec)

mysql> select major, count(major) from other_table where numcr > 20 group by maj
or having major = 'CI';
+--------+--------------+
| major | count(major) |
+--------+--------------+
| CI     |            3 |
+--------+--------------+
1 row in set (0.00 sec)

mysql> select name, sustring(name,3) from other_table;
ERROR 1548 (HY000): Cannot load from mysql.proc. The table is probably corrupted
mysql> select name, substring(name,3) from other_table;
+--------------+--------------------+
| name         | substring(name,3) |
+--------------+--------------------+
| Susan Ash    | san Ash            |
| Linda French | nda French         |
| David Costa  | vid Costa          |
| Bob Hill     | b Hill             |
| Mabel Jones  | bel Jones          |
| Lee Adams    | e Adams            |
| Jennifer Ames | nnifer Ames       |
+--------------+--------------------+
7 rows in set (0.01 sec)

mysql>
```


File
Tools
View
PROTECTED VIEW
Be careful—files from the Internet can contain viruses. Unless you need to e
mysql> select name, substr
+--------------+---------
| name | substring
+--------------+---------
| Susan Ash | san
| Linda French | nda
| David Costa | vid
| Bob Hill | b Hi
| Mabel Jones | bel
| Lee Adams | e Ad
+--------------+---------
6 rows in set (0.00 sec)
mysql> select name, substr
+--------------+---------
| name | substring
+--------------+---------
| Susan Ash | san
| Linda French | nda
| David Costa | vid
| Bob Hill | b Hi
| Mabel Jones | bel
| Lee Adams | e Ad
+--------------+---------
6 rows in set (0.00 sec)
mysql> select gpa, instr(
+------+------------------
| gpa | instr(gpa, '.')
+------+------------------
| 3.60 | 2
| 3.50 | 2
| 3.60 | 2
| 2.80 | 2
| 2.70 | 2
| 3.20 | 2
+------+------------------
pgrocer@cisweb:~
mysql> select major, count(major) from other_table where numcr > 20 group by maj
or having major = 'CI';
+-------+--------------+
| major | count(major) |
+-------+--------------+
| CI | 3 |
+-------+--------------+
1 row in set (0.00 sec)
I eliminate records that do not have numcr > 20 as I form the groups and once the groups are formed, I only want those with a major of CI.
mysql> select name, sustring(name,3) from other_table;
ERROR 1548 (HY000): Cannot load from mysql.proc. The table is probably corrupted
mysql> select name, substring(name,3) from other_table;
+---------------+--------------------+
| name | substring(name,3) |
+---------------+--------------------+
Susan Ash	san Ash
Linda French	nda French
David Costa	vid Costa
Bob Hill	b Hill
Mabel Jones	bel Jones
Lee Adams	e Adams
Jennifer Ames	nnifer Ames
+---------------+--------------------+
7 rows in set (0.01 sec)
mysql> select name, substr(name,3,4) from other_table;
+---------------+------------------+
| name | substr(name,3,4) |
+---------------+------------------+
Susan Ash	san
Linda French	nda
David Costa	vid
Bob Hill	b Hi
Mabel Jones	bel
Lee Adams	e Ad
Jennifer Ames	nnif
+---------------+------------------+
7 rows in set (0.00 sec)
Note the use of substr
mysql>
Page 6 of 8
100%
10:03 AM
2/26/2019


File
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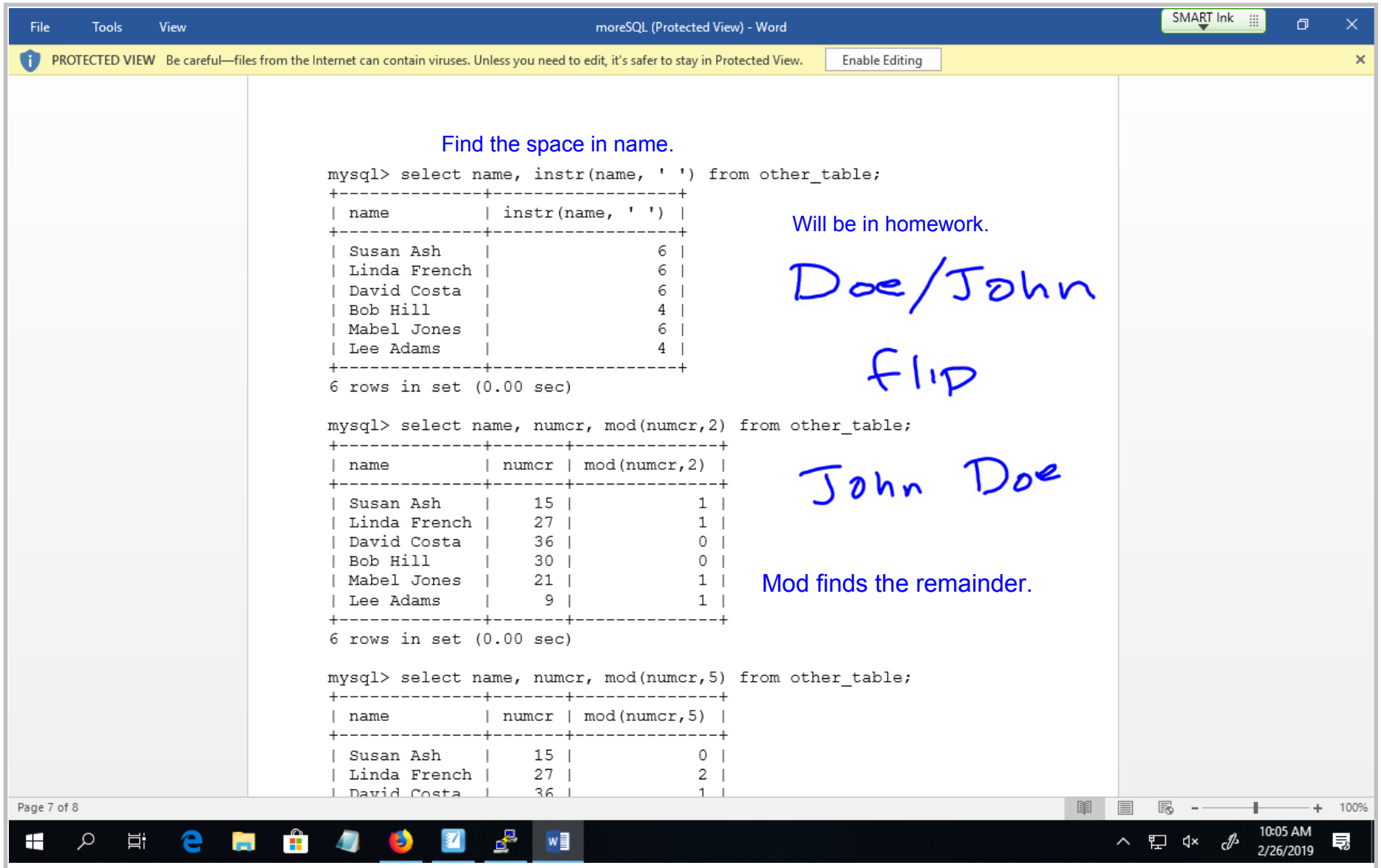
+--------------+----------------------+
Susan Ash	san
Linda French	nda
David Costa	vid
Bob Hill	b Hi
Mabel Jones	bel
Lee Adams	e Ad
+--------------+----------------------+
6 rows in set (0.00 sec)
mysql> select gpa, instr(gpa, '.') from other_table;
+------+------------------+
| gpa | instr(gpa, '.') |
+------+------------------+
3.60	2
3.50	2
3.60	2
2.80	2
2.70	2
3.20	2
+------+------------------+
6 rows in set (0.00 sec)
The instr command finds the location of the period in gpa for every group.
mysql> select name, instr(name, ' ') from other_table;
+--------------+-------------------+
| name | instr(name, ' ') |
+--------------+-------------------+
Page 6 of 8
100%
10:03 AM
2/26/2019


File
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SMART Ink
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View.
Enable Editing
Find the space in name.
mysql> select name, instr(name, ' ') from other_table;
+--------------+------------------+
| name | instr(name, ' ') |
+--------------+------------------+
Susan Ash	6
Linda French	6
David Costa	6
Bob Hill	4
Mabel Jones	6
Lee Adams	4
+--------------+------------------+
6 rows in set (0.00 sec)
Will be in homework.
Doe/John
flip
mysql> select name, numcr, mod(numcr,2) from other_table;
+--------------+-------+--------------+
| name | numcr | mod(numcr,2) |
+--------------+-------+--------------+
Susan Ash	15	1
Linda French	27	1
David Costa	36	0
Bob Hill	30	0
Mabel Jones	21	1
Lee Adams	9	1
+--------------+-------+--------------+
6 rows in set (0.00 sec)
John Doe
Mod finds the remainder.
mysql> select name, numcr, mod(numcr,5) from other_table;
+--------------+-------+--------------+
| name | numcr | mod(numcr,5) |
+--------------+-------+--------------+
| Susan Ash | 15 | 0 |
| Linda French | 27 | 2 |
Page 7 of 8
100%
10:05 AM
2/26/2019

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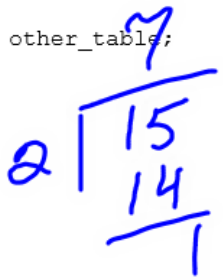
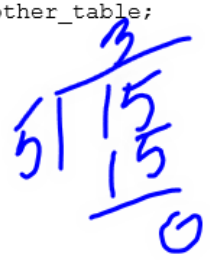
```
+--------------+------------------+
| Susan Ash    |                6 |
| Linda French |                6 |
| David Costa  |                6 |
| Bob Hill     |                4 |
| Mabel Jones  |                6 |
| Lee Adams    |                4 |
+--------------+------------------+
6 rows in set (0.00 sec)

mysql> select name, numcr, mod(numcr,2) from other_table;
+--------------+-------+--------------+
| name         | numcr | mod(numcr,2) |
+--------------+-------+--------------+
| Susan Ash    |    15 |            1 |
| Linda French |    27 |            1 |
| David Costa  |    36 |            0 |
| Bob Hill     |    30 |            0 |
| Mabel Jones  |    21 |            1 |
| Lee Adams    |     9 |            1 |
+--------------+-------+--------------+
6 rows in set (0.00 sec)

mysql> select name, numcr, mod(numcr,5) from other_table;
+--------------+-------+--------------+
| name         | numcr | mod(numcr,5) |
+--------------+-------+--------------+
| Susan Ash    |    15 |            0 |
| Linda French |    27 |            2 |
| David Costa  |    36 |            1 |
| Bob Hill     |    30 |            0 |
| Mabel Jones  |    21 |            1 |
| Lee Adams    |     9 |            4 |
+--------------+-------+--------------+
6 rows in set (0.00 sec)
```





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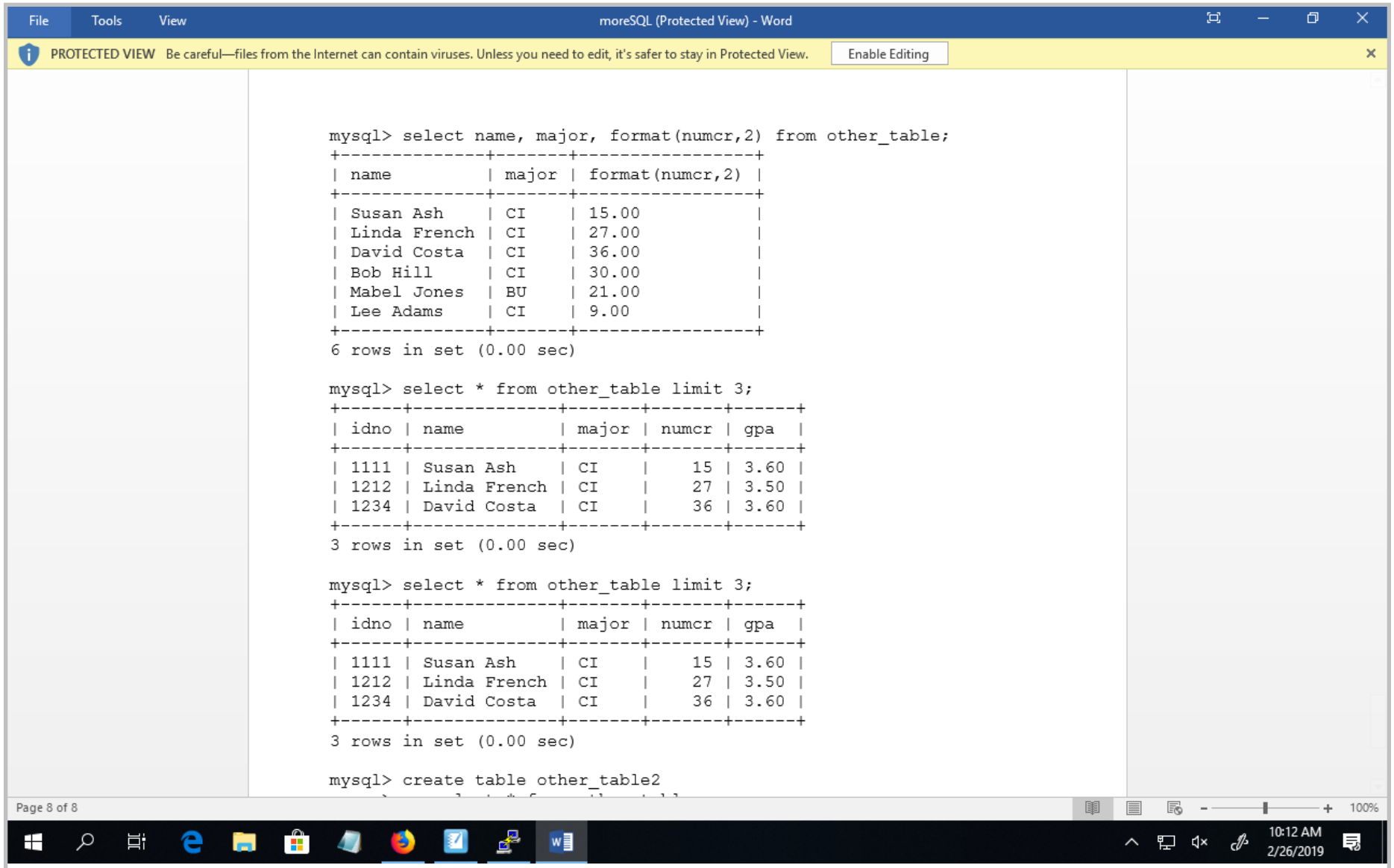
File
Tools
View
moreSQL (Protected View) - Word
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View.
Enable Editing
mysql> select name, major, format(numcr,2) from other_table;
+--------------+-------+-----------------+
| name | major | format(numcr,2) |
+--------------+-------+-----------------+
Susan Ash	CI	15.00
Linda French	CI	27.00
David Costa	CI	36.00
Bob Hill	CI	30.00
Mabel Jones	BU	21.00
Lee Adams	CI	9.00
+--------------+-------+-----------------+
6 rows in set (0.00 sec)
mysql> select * from other_table limit 3;
+------+--------------+-------+-------+------+
| idno | name | major | numcr | gpa |
+------+--------------+-------+-------+------+
1111	Susan Ash	CI	15	3.60
1212	Linda French	CI	27	3.50
1234	David Costa	CI	36	3.60
+------+--------------+-------+-------+------+
3 rows in set (0.00 sec)
mysql> select * from other_table limit 3;
+------+--------------+-------+-------+------+
| idno | name | major | numcr | gpa |
+------+--------------+-------+-------+------+
1111	Susan Ash	CI	15	3.60
1212	Linda French	CI	27	3.50
1234	David Costa	CI	36	3.60
+------+--------------+-------+-------+------+
3 rows in set (0.00 sec)
mysql> create table other_table2
Page 8 of 8
100%
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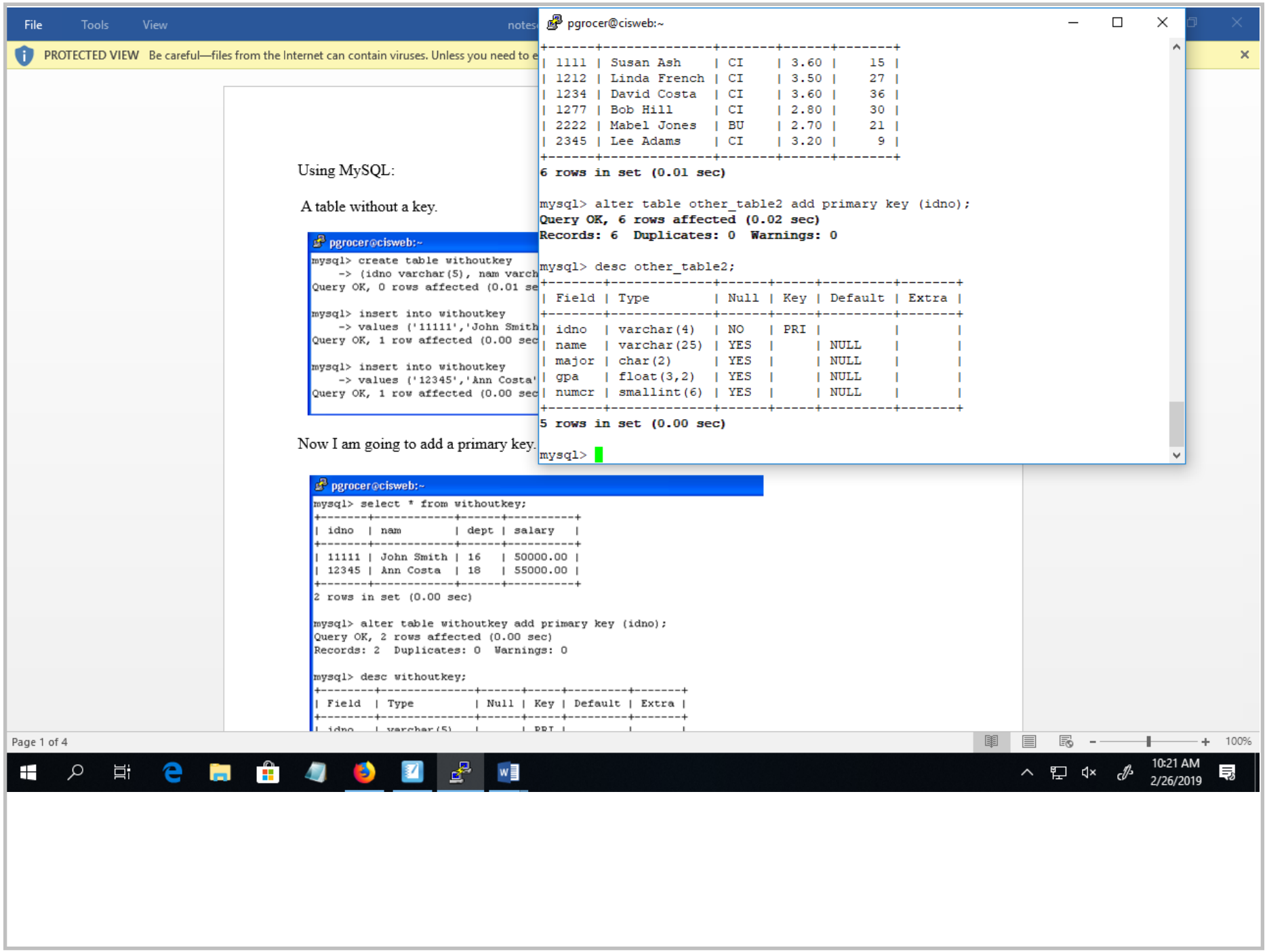
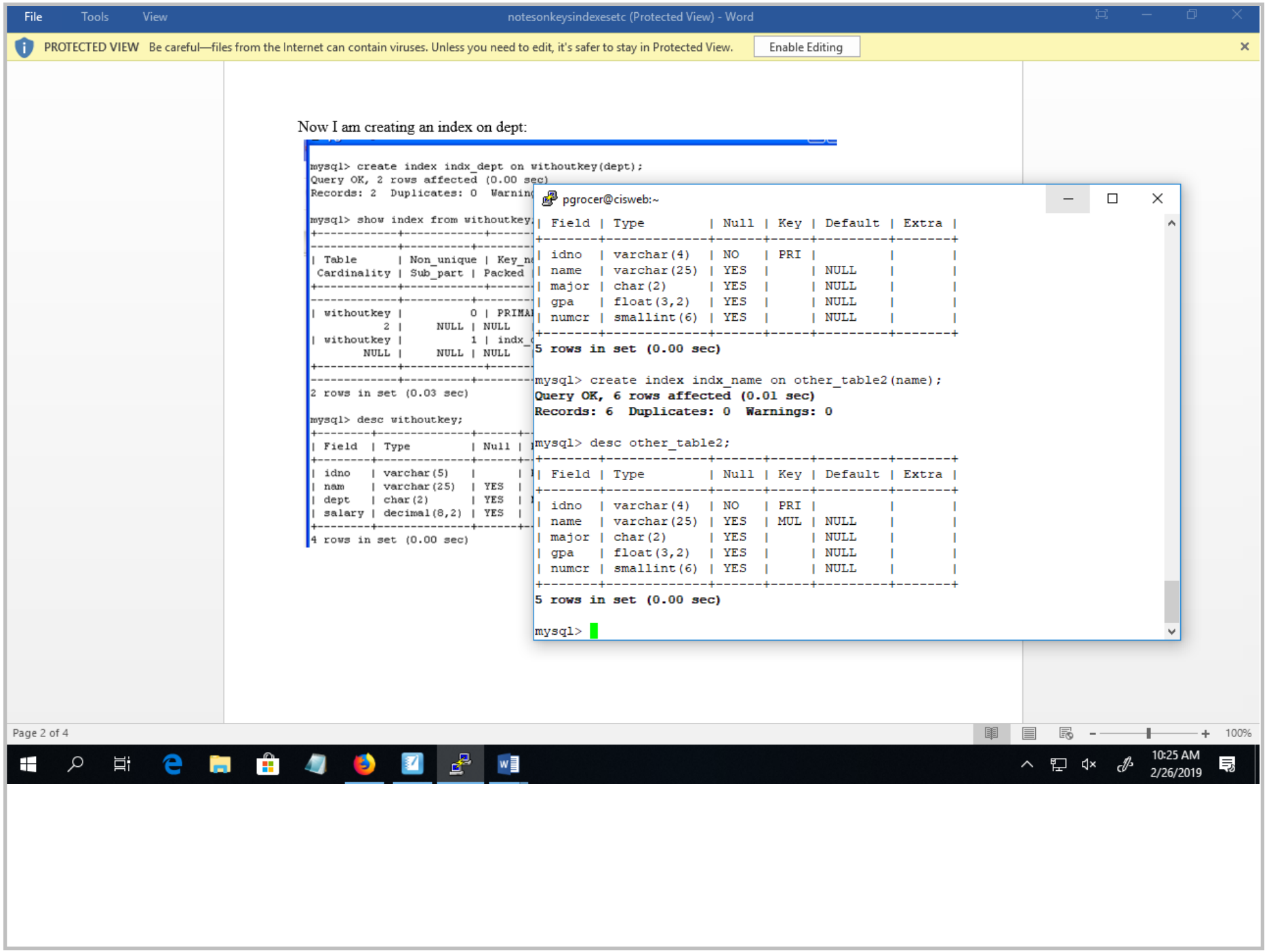
2/26/2019


File
Tools
View
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to e
Using MySQL:
A table without a key.
pgrocer@cisweb:~
mysql> create table withoutkey
-> (idno varchar(5), nam varch
Query OK, 0 rows affected (0.01 se
mysql> insert into withoutkey
-> values ('11111','John Smith
Query OK, 1 row affected (0.00 sec
mysql> insert into withoutkey
-> values ('12345','Ann Costa'
Query OK, 1 row affected (0.00 sec
Now I am going to add a primary key.
pgrocer@cisweb:~
mysql> select * from withoutkey;
+-------+------------+------+----------+
| idno | nam | dept | salary |
+-------+------------+------+----------+
| 11111 | John Smith | 16 | 50000.00 |
| 12345 | Ann Costa | 18 | 55000.00 |
+-------+------------+------+----------+
2 rows in set (0.00 sec)
mysql> alter table withoutkey add primary key (idno);
Query OK, 2 rows affected (0.00 sec)
Records: 2 Duplicates: 0 Warnings: 0
mysql> desc withoutkey;
+--------+-------------+------+-----+---------+-------+
| Field | Type | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
pgrocer@cisweb:~
+------+--------------+-------+------+--------+
1111	Susan Ash	CI	3.60	15
1212	Linda French	CI	3.50	27
1234	David Costa	CI	3.60	36
1277	Bob Hill	CI	2.80	30
2222	Mabel Jones	BU	2.70	21
2345	Lee Adams	CI	3.20	9
+------+--------------+-------+------+--------+
6 rows in set (0.01 sec)
mysql> alter table other_table2 add primary key (idno);
Query OK, 6 rows affected (0.02 sec)
Records: 6 Duplicates: 0 Warnings: 0
mysql> desc other_table2;
+--------+-------------+------+-----+---------+-------+
| Field | Type | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
idno	varchar(4)	NO	PRI		
name	varchar(25)	YES		NULL	
major	char(2)	YES		NULL	
gpa	float(3,2)	YES		NULL	
numcr	smallint(6)	YES		NULL	
+--------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
mysql>
Page 1 of 4
100%
10:21 AM
2/26/2019


File Tools View
notesonkeysindexesetc (Protected View) - Word
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Enable Editing
Now I am creating an index on dept:
mysql> create index indx_dept on withoutkey(dept);
Query OK, 2 rows affected (0.00 sec)
Records: 2 Duplicates: 0 Warnin
mysql> show index from withoutkey
2 rows in set (0.03 sec)
mysql> desc withoutkey;
Field	Type	Null
idno	varchar(5)	
nam	varchar(25)	YES
dept	char(2)	YES
salary	decimal(8,2)	YES
4 rows in set (0.00 sec)
pgrocer@cisweb:~
Field	Type	Null	Key	Default	Extra
idno	varchar(4)	NO	PRI		
name	varchar(25)	YES		NULL	
major	char(2)	YES		NULL	
gpa	float(3,2)	YES		NULL	
numcr	smallint(6)	YES		NULL	
5 rows in set (0.00 sec)
mysql> create index indx_name on other_table2(name);
Query OK, 6 rows affected (0.01 sec)
Records: 6 Duplicates: 0 Warnings: 0
mysql> desc other_table2;
Field	Type	Null	Key	Default	Extra
idno	varchar(4)	NO	PRI		
name	varchar(25)	YES	MUL	NULL	
major	char(2)	YES		NULL	
gpa	float(3,2)	YES		NULL	
numcr	smallint(6)	YES		NULL	
5 rows in set (0.00 sec)
mysql>
Page 2 of 4
100%
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Now I am going to drop the index and then drop the primary key.

```
mysql> alter table withoutkey
    -> drop index indx_dept;
Query OK, 2 rows affected (0.00 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> show index from withoutkey;
+------------+------------+----------+--------------+-------------+-----------+
----------+----------+--------+------+------------+---------+
| Table      | Non_unique | Key_name | Seq_in_index | Column_name | Collation |
ardinality | Sub_part | Packed | Null | Index_type | Comment |
+------------+------------+----------+--------------+-------------+-----------+
----------+----------+--------+------+------------+---------+
| withoutkey |          0 | PRIMARY  |            1 | idno        | A         |
         2 |     NULL | NULL   |      | BTREE      |         |
+------------+------------+----------+--------------+-------------+-----------+
----------+----------+--------+------+------------+---------+
1 row in set (0.00 sec)

mysql> desc withoutkey;
+--------+--------------+------+-----+---------+-------+
| Field  | Type         | Null | Key | Default | Extra |
+--------+--------------+------+-----+---------+-------+
| idno   | varchar(5)   |      | PRI |         |       |
| nam    | varchar(25)  | YES  |     | NULL    |       |
| dept   | char(2)      | YES  |     | NULL    |       |
| salary | decimal(8,2) | YES  |     | NULL    |       |
+--------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> alter table withoutkey
    -> drop primary key;
Query OK, 2 rows affected (0.01 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> desc withoutkey;
+--------+--------------+------+-----+---------+-------+
| Field  | Type         | Null | Key | Default | Extra |
+--------+--------------+------+-----+---------+-------+
| idno   | varchar(5)   |      |     |         |       |
| nam    | varchar(25)  | YES  |     | NULL    |       |
| dept   | char(2)      | YES  |     | NULL    |       |
| salary | decimal(8,2) | YES  |     | NULL    |       |
```


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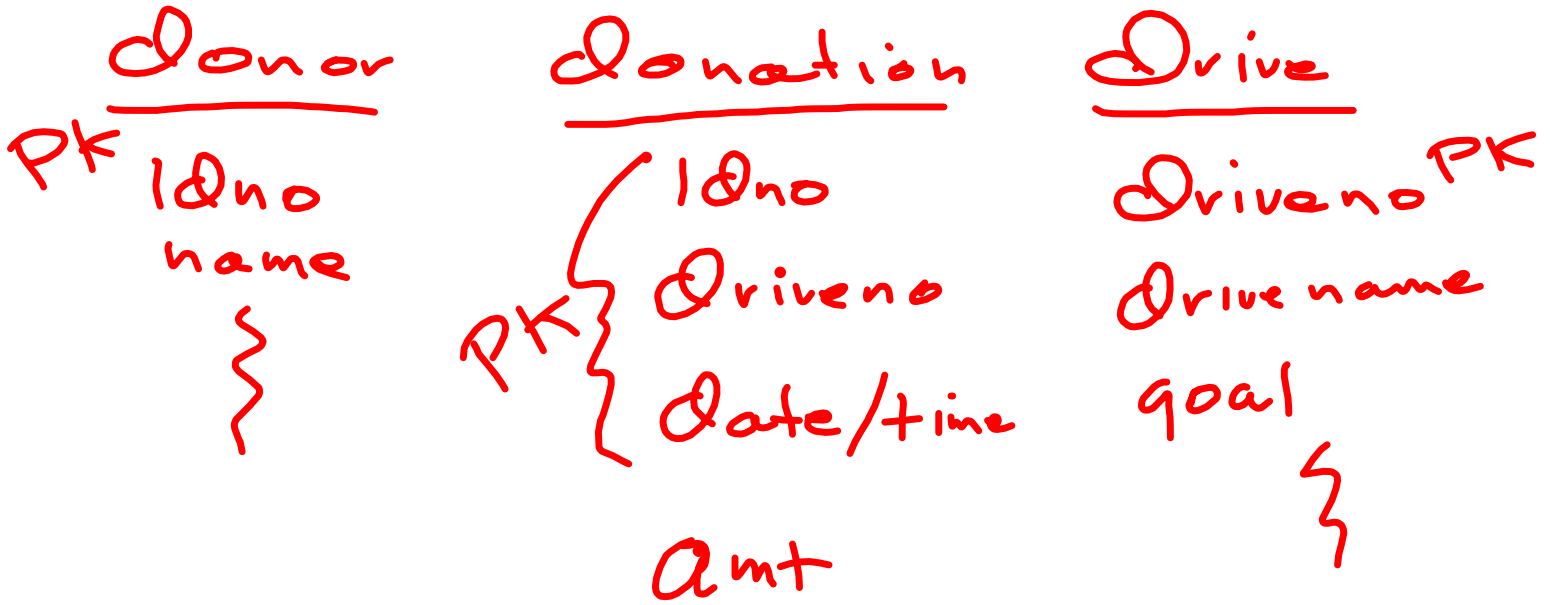
Remember the primary key uniquely defines one record and cannot be null.



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Making a three part primary key on an existing table.

```
pgrocer@cisweb:~
+---------+--------------+------+-----+---------+-------+
| Field   | Type         | Null | Key | Default | Extra |
+---------+--------------+------+-----+---------+-------+
| idno    | varchar(5)   |      |     |         |       |
| driveno | varchar(3)   |      |     |         |       |
| condate | date         | YES  |     | NULL    |       |
| conamt  | decimal(6,2) | YES  |     | NULL    |       |
+---------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> select * from threepartkey;
Empty set (0.00 sec)

mysql> alter table threepartkey add primary key (idno, driveno, condate);
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc threepartkey;
+---------+--------------+------+-----+------------+-------+
| Field   | Type         | Null | Key | Default    | Extra |
+---------+--------------+------+-----+------------+-------+
| idno    | varchar(5)   |      | PRI |            |       |
| driveno | varchar(3)   |      | PRI |            |       |
| condate | date         |      | PRI | 0000-00-00 |       |
| conamt  | decimal(6,2) | YES  |     | NULL       |       |
+---------+--------------+------+-----+------------+-------+
4 rows in set (0.00 sec)
```

File Tools View subqueries (Protected View) - Word

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Subqueries in MySQL:

A simple subquery using two tables: In this example I want all the donations for Animal Home. Let's say, I do not know the driveno for Animal Home. I can do a inner select to get the driveno and then do the outer select to get all the donations with that driveno. Below the example, I will do the selects individually.

```
mysql> select * from donation where driveno in
    -> (select driveno from drive where drivename = 'Animal Home');
+-------+---------+------------+---------+
| idno  | driveno | condate    | contamt |
+-------+---------+------------+---------+
| 12121 | 200     | 2005-12-30 |   40.00 |
| 23456 | 200     | 2005-12-29 |  100.00 |
+-------+---------+------------+---------+
2 rows in set (0.00 sec)

mysql> select * from donation;
+-------+---------+------------+---------+
| idno  | driveno | condate    | contamt |
+-------+---------+------------+---------+
| 11111 | 100     | 2005-12-28 |   25.00 |
| 12121 | 200     | 2005-12-30 |   40.00 |
| 23456 | 100     | 2005-11-20 |   20.00 |
| 33333 | 300     | 2005-11-30 |   10.00 |
| 12121 | 300     | 2005-12-31 |   50.00 |
| 23456 | 200     | 2005-12-29 |  100.00 |
+-------+---------+------------+---------+
6 rows in set (0.00 sec)

mysql> select * from drive;
+---------+--------------+-------------+----------+----------+
| driveno | drivename    | drivechair  | lastyear | thisyear |
+---------+--------------+-------------+----------+----------+
| 100     | Kids Shelter | Ann Smith   | 10000.00 |     0.00 |
| 200     | Animal Home  | Linda Grant |  5000.00 |     0.00 |
| 300     | Health Aid   | David Ross  |  7000.00 |     0.00 |
+---------+--------------+-------------+----------+----------+
```

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File Tools View subqueries (Protected View) - Word

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```
mysql> select * from drive;
+---------+--------------+-------------+----------+----------+
| driveno | drivename    | drivechair  | lastyear | thisyear |
+---------+--------------+-------------+----------+----------+
| 100     | Kids Shelter | Ann Smith   | 10000.00 |     0.00 |
| 200     | Animal Home  | Linda Grant |  5000.00 |     0.00 |
| 300     | Health Aid   | David Ross  |  7000.00 |     0.00 |
+---------+--------------+-------------+----------+----------+
```

This example uses the same table for the outer query and the inner query:

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```
mysql> select * from drive where drivename = 'Animal Home';
+---------+-------------+-------------+----------+----------+
| driveno | drivename   | drivechair  | lastyear | thisyear |
+---------+-------------+-------------+----------+----------+
| 200     | Animal Home | Linda Grant |  5000.00 |     0.00 |
+---------+-------------+-------------+----------+----------+
1 row in set (0.00 sec)

mysql> select * from donation where driveno = '200';
+-------+---------+------------+---------+
| idno  | driveno | condate    | contamt |
+-------+---------+------------+---------+
| 12121 | 200     | 2005-12-30 |   40.00 |
| 23456 | 200     | 2005-12-29 |  100.00 |
+-------+---------+------------+---------+
2 rows in set (0.00 sec)

mysql>
```

pgrocer@cisweb:~

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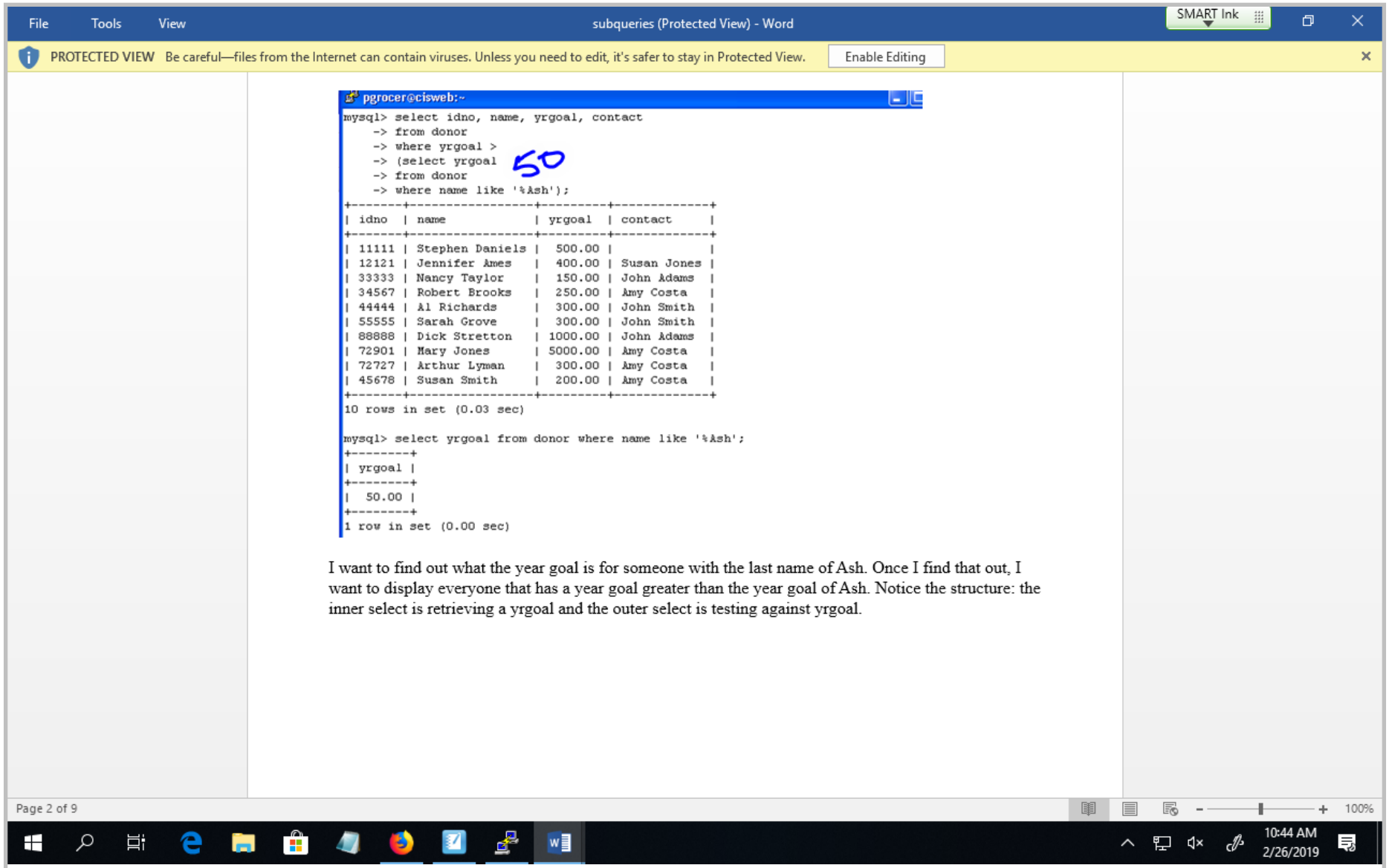
File
Tools
View
subqueries (Protected View) - Word
SMART Ink
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View.
Enable Editing
pgrocer@cisweb:~
mysql> select idno, name, yrgoal, contact
-> from donor
-> where yrgoal >
-> (select yrgoal
-> from donor
-> where name like '%Ash');
50
+-------+-----------------+---------+-------------+
| idno | name | yrgoal | contact |
+-------+-----------------+---------+-------------+
11111	Stephen Daniels	500.00	
12121	Jennifer Ames	400.00	Susan Jones
33333	Nancy Taylor	150.00	John Adams
34567	Robert Brooks	250.00	Amy Costa
44444	Al Richards	300.00	John Smith
55555	Sarah Grove	300.00	John Smith
88888	Dick Stretton	1000.00	John Adams
72901	Mary Jones	5000.00	Amy Costa
72727	Arthur Lyman	300.00	Amy Costa
45678	Susan Smith	200.00	Amy Costa
+-------+-----------------+---------+-------------+
10 rows in set (0.03 sec)
mysql> select yrgoal from donor where name like '%Ash';
+---------+
| yrgoal |
+---------+
| 50.00 |
+---------+
1 row in set (0.00 sec)
I want to find out what the year goal is for someone with the last name of Ash. Once I find that out, I want to display everyone that has a year goal greater than the year goal of Ash. Notice the structure: the inner select is retrieving a yrgoal and the outer select is testing against yrgoal.
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100%
10:44 AM
2/26/2019