

ICSI311: Өгөгдлийн сангийн систем
Лабораторийн ажил 2: User privileges

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1) Удиртгал

Хэрхэн хэрэглэгч шинээр байгуулж GRANT-ийг ашиглан хэрэглэгчдэд хэрхэн эрх үүсгэж өгөх талаар судлах болно

2) Зорилго

Дараах 3 төрлийн хэрэглэгчийг үүсгээд хэрэглэгч болгон дээр зөвшөөрөгдөөгүй үйлдлүүдийг хийх

1. User A
 - a. Access: all tables
 - b. Commands: all
 - c. Created by admin
2. User B
 - a. Access: only some tables
 - b. Commands: all
 - c. Created by admin with grant privileges
3. User C
 - a. Access: only some tables
 - b. Commands: select, insert, delete
 - c. Created by user B

Үүний дараа revoke command ашиглан User C аль нэг хүснэгтэн дээр delete эрхийг хасна.

3.1) UserA-г root үүсгэх

```
35 • CREATE USER 'UserA' IDENTIFIED BY 'DatabaseSystems123!' ;
36
37 • GRANT ALL PRIVILEGES ON *.* TO 'UserA' ;
38
39
40 • SELECT * FROM mysql.user
41 |
42
43
44
```

#	Host	User	Select_priv	Insert_priv	Update_priv	Delete_priv	Create_priv	Drop_priv	Reload_priv	Shutdown_priv	Process_priv	File_priv	Grant_priv	References_priv	Index_priv	Alter_priv	Show_db_priv	Super_priv	Create
%		UserA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
localhost		mysql.infoschema	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
localhost		mysql.session	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	N
localhost		mysql.sys	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
localhost		root	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

user 5 x

#	Time	Action	Message	Duration / Fetch
18	14:32:32	GRANT ALL PRIVILEGES ON northwind.* TO 'UserA'	0 row(s) affected	0.0026 sec
19	14:32:37	SELECT * FROM mysql.user LIMIT 0, 1000	5 row(s) returned	0.00041 sec / 0.00...
20	14:32:57	GRANT ALL PRIVILEGES ON *.* TO 'UserA'	0 row(s) affected	0.0050 sec
21	14:33:00	SELECT * FROM mysql.user LIMIT 0, 1000	5 row(s) returned	0.00048 sec / 0.00...

UserA-г бүх database-ийн бүх эрхтэй байхаар privilege үүдийг өгсөн.

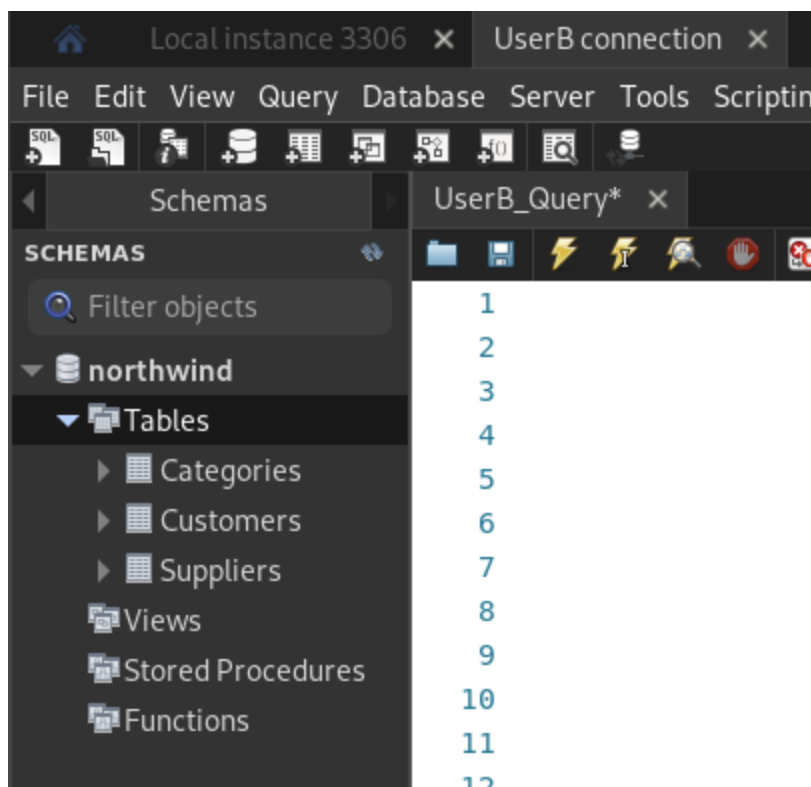
SELECT * FROM mysql.user query-гээр UserA-ийн бүх privilege үүдийг харуулав

3.2) UserB-г root үүсгэх

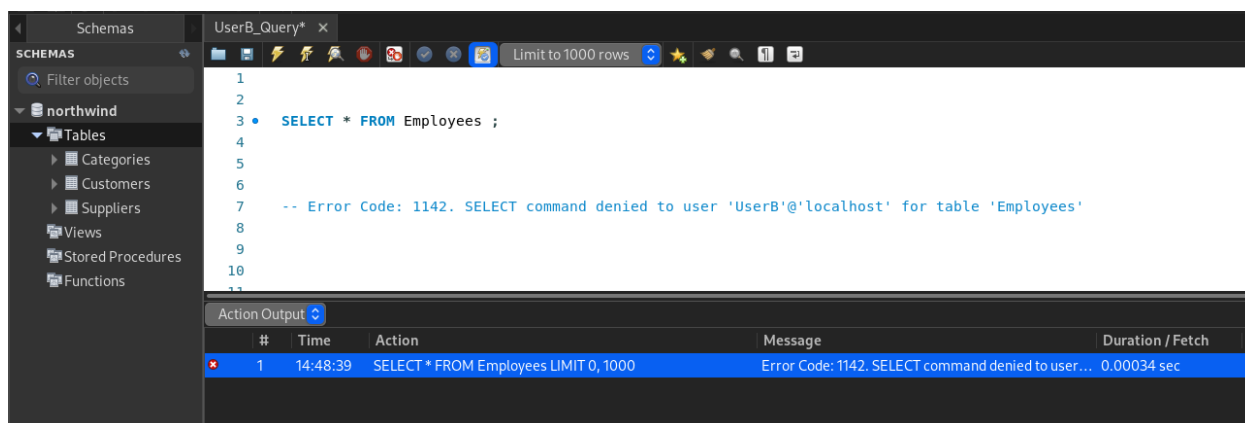
```
40 • SELECT *, User FROM mysql.user ;
41
42 • SHOW GRANTS FOR 'UserB' ;
43
44 • CREATE USER 'UserB' IDENTIFIED BY 'DatabaseSystems321!' ;
45
46 • GRANT ALL PRIVILEGES ON northwind.Categories TO 'UserB' WITH GRANT OPTION ;
47 • GRANT ALL PRIVILEGES ON northwind.Customers TO 'UserB' WITH GRANT OPTION;
48 • GRANT ALL PRIVILEGES ON northwind.Suppliers TO 'UserB' WITH GRANT OPTION;
49
50
51
52
53
```

#	Time	Action	Message	Duration / Fetch
28	14:44:15	SHOW GRANTS FOR 'UserB'	4 row(s) returned	0.00022 sec / 0.00...
29	14:44:48	SELECT * FROM mysql.user LIMIT 0, 1000	6 row(s) returned	0.00064 sec / 0.00...
30	14:45:03	SELECT *, User FROM mysql.user LIMIT 0, 1000	6 row(s) returned	0.00050 sec / 0.00...
31	14:45:57	SHOW GRANTS FOR 'UserB'	4 row(s) returned	0.00023 sec / 0.00...

UserB-д northwind database ийн categories, customers, suppliers гэсэн 3 хүснэгтэд grant option тойгоор бүх privilege-ийг өгсөн.



UserB зөвхөн эдгээр гурван хүснэгт рүү хандах эрхтэй болохоор өөр хүснэгт рүү хандвал энэ нь хориотой үйлдэл болно.



Мөн UserB-д бүх database-ийн бүх хүснэгтэд хэрэглэгч үүсгэх эрхийг grant option-гүйгээр өгсөн.

GRANT CREATE USER ON *.* TO 'UserB' ;

3.3) UserC-г UserB үүсгэх нь

```
UserB_Query* x
Limit to 1000 rows
1
2
3 • SELECT * FROM Categories ;
4
5 • CREATE USER 'UserC' IDENTIFIED BY 'SaruulSystems123!' ;
6
7 • GRANT SELECT, INSERT, DELETE ON northwind.Customers TO 'UserC' ;
8 • GRANT SELECT, INSERT, DELETE ON northwind.Categories TO 'UserC';
9
```

UserB-ээр UserC-г үүсгэсэн.

```
51
52 • SHOW GRANTS FOR 'UserC' ;
53
54
55
56
57
```

Result Grid Filter Rows: Export:

#	Grants for UserC@%
1	GRANT USAGE ON *.* TO `UserC`...
2	GRANT SELECT, INSERT, DELET...
3	GRANT SELECT, INSERT, DELET...

Result 12 x

Action Output

#	Time	Action
✓ 1	15:00:14	SHOW GRANTS FOR 'UserC'

UserC-д UPDATE эрх байхгүй болохоор энэ нь хориотой үйлдэл болно.

```
Query1 x
1 • USE northwind ;
2
3 • SELECT * FROM Categories ;
4
5 • UPDATE Categories SET CategoryName = 'Sengur'
6   WHERE CategoryID = 1 ;
7
8 -- Error Code: 1142. UPDATE command denied to user 'UserC'@'localhost' for table 'Categories'
9
```

Action Output					
#	Time	Action	Message	Duration / Fetch	
✗ 1	15:05:05	SELECT * FROM Categories LIMIT 0, 1000	Error Code: 1046. No database selected Select the default DB to be used by double-clicking ...	0.00054 sec	
✓ 2	15:05:19	USE northwind	0 row(s) affected	0.00018 sec	
✓ 3	15:05:22	SELECT * FROM Categories LIMIT 0, 1000	8 row(s) returned	0.00070 sec / 0.00...	
✗ 4	15:06:40	UPDATE Categories SET CategoryName = 'Sengur' WHER...	Error Code: 1142. UPDATE command denied to use...	0.00037 sec	

UserB дээрээс UserC-ийн Categories хүснэгт дээр DELETE үйлдлийн эрхийг хураав.

UserB:

```
--
11 • REVOKE DELETE ON Categories FROM 'UserC' ;
```

Action Output					
#	Time	Action	Message	Duration / Fetch	
✓ 1	15:08:38	REVOKE DELETE ON Categories FROM 'UserC'	0 row(s) affected	0.0029 sec	

UserC:

```
9
10 • DELETE FROM Categories WHERE CustomerID = 1 ;
11
12 -- Error Code: 1142. DELETE command denied to user 'UserC'@'localhost' for table 'Categories'
13
```

Action Output					
#	Time	Action	Message	Duration / Fetch	
✗ 1	15:11:03	DELETE FROM Categories WHERE CustomerID = 1	Error Code: 1142. DELETE command denied to use...	0.0	

