

BẢO MẬT CƠ SỞ DỮ LIỆU

Lab02 – Phân quyền các đối tượng truy cập CSDL

Sinh viên:

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Vũ Trọng Nghĩa – 18120478

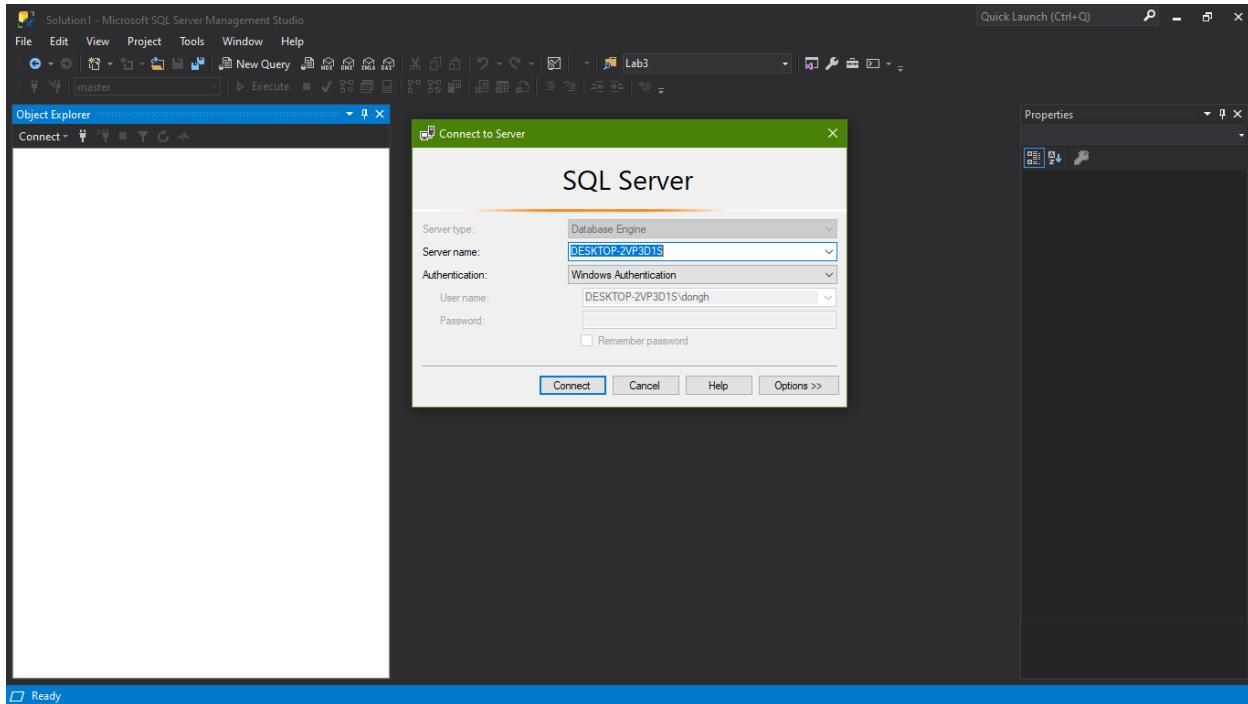
Lê Danh Lưu – 18120460



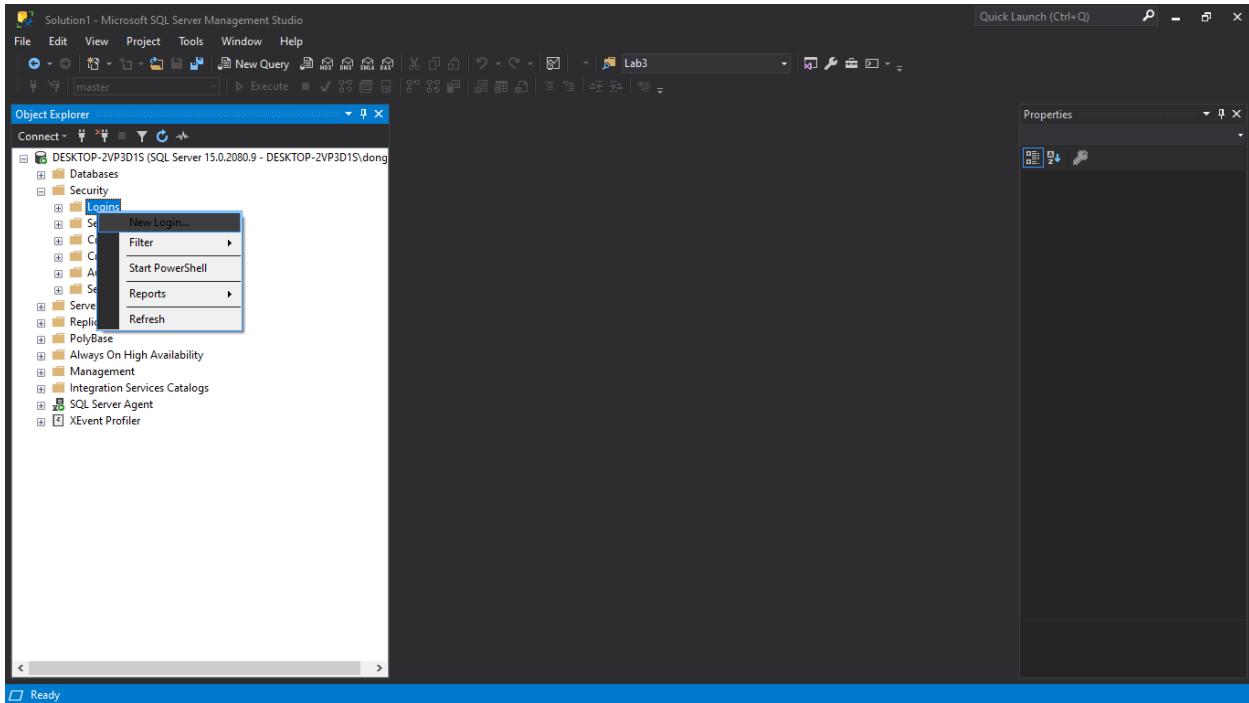
Khoa Công nghệ Thông tin
Đại học Khoa học Tự nhiên TP HCM

I. Tạo user phân quyền cho các đối tượng

Trước hết, cần Login bằng tài khoản Windows Authentications hoặc SQL Server Authentication (nhưng phải có toàn quyền như Windows Authentication)



Vào Security => Logins => New users để bắt đầu thêm các user mới

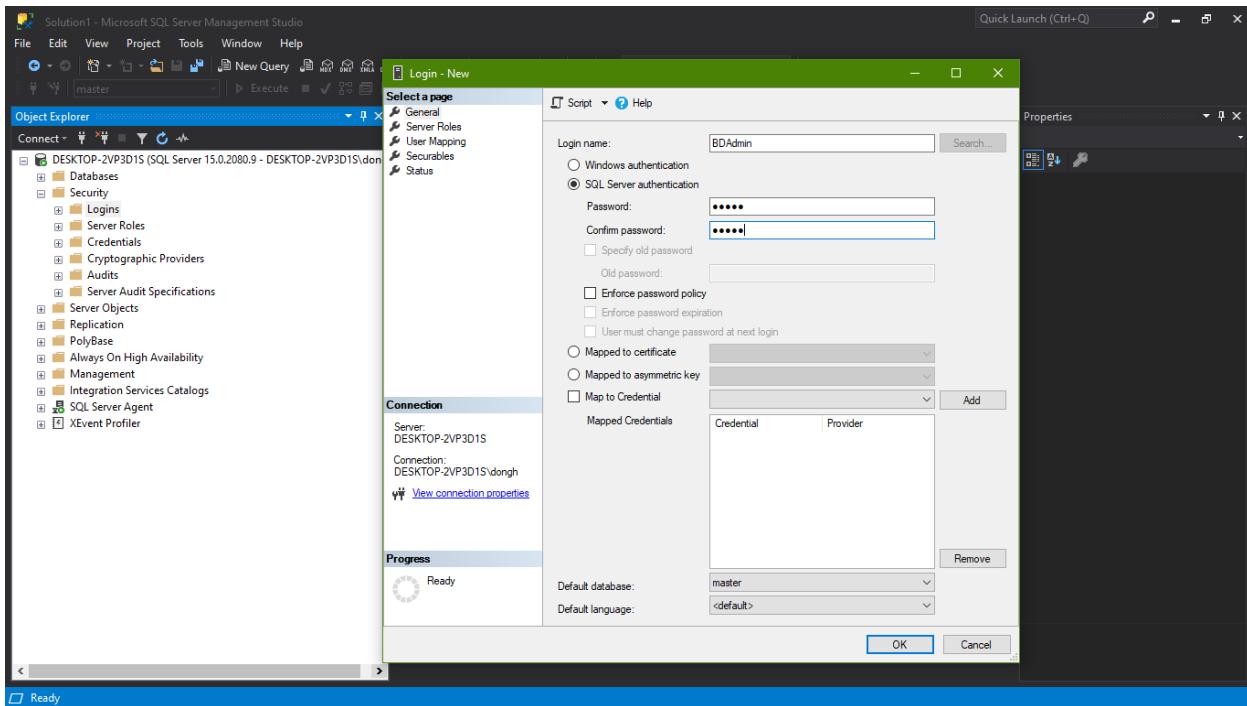


Chi tiết từng user

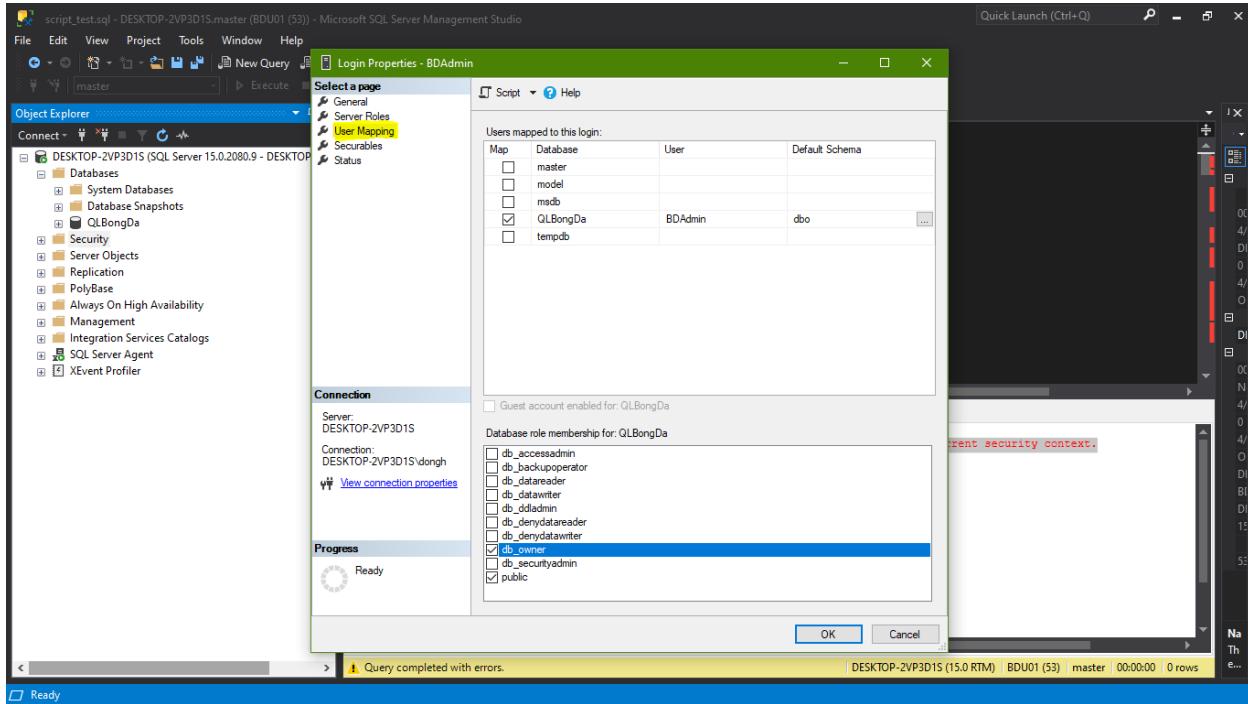
A. BDAdmin

1. Cài đặt

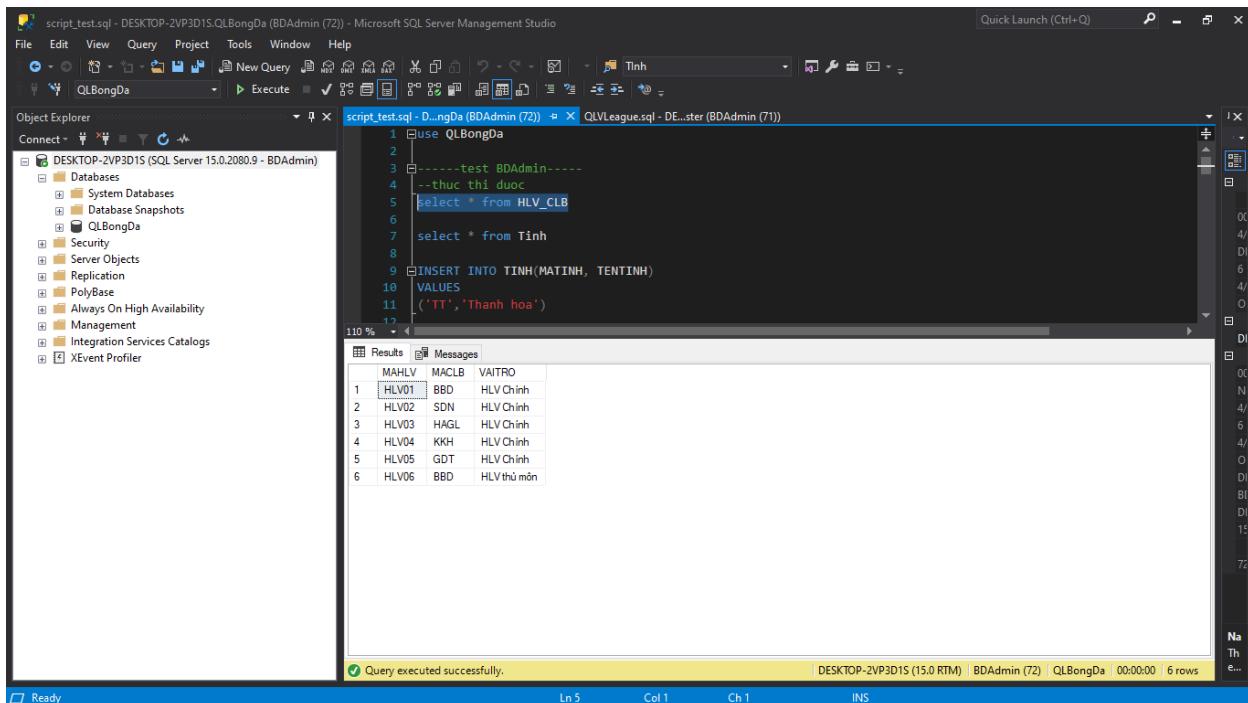
Bước 1: Tạo user mới với loại ủy quyền là SQL Server Authentication

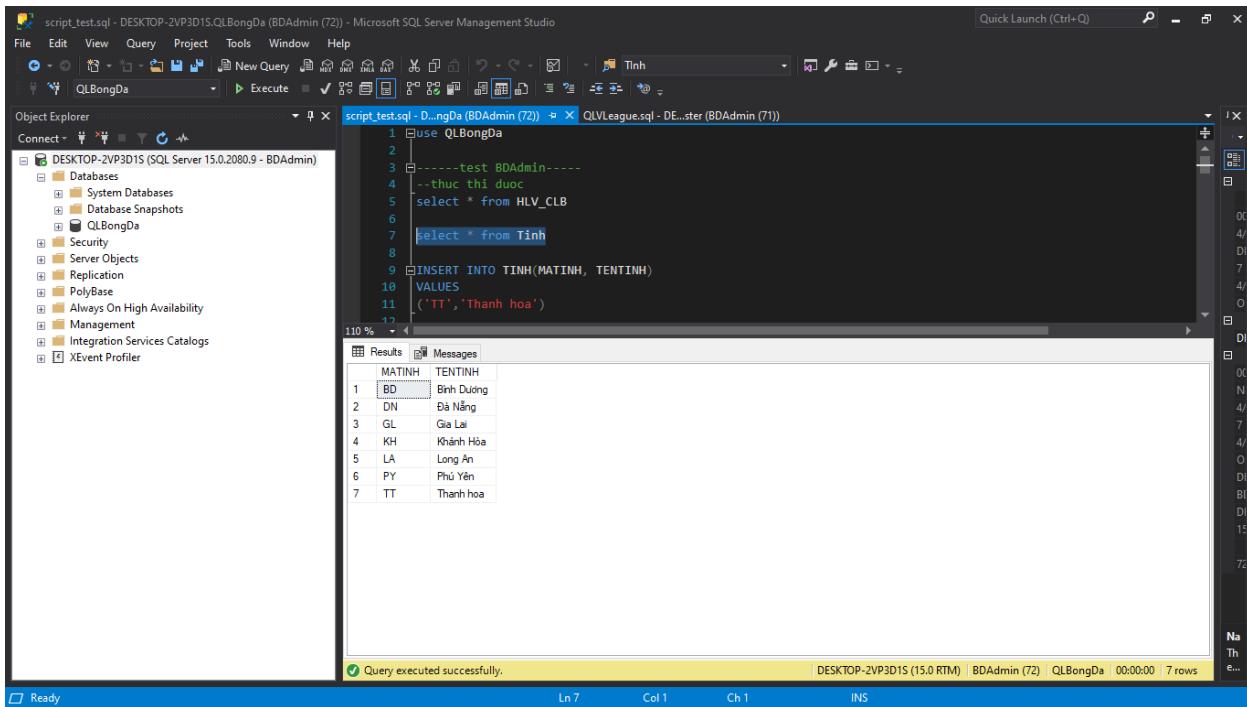


Bước 2: Ở phần Logins Properties => User Mapping map với database QLBongDa với role db_owner và public



2. Kiểm tra





script_test.sql - DESKTOP-2VP3D1S.QLBongDa (BDAdmin (72)) - Microsoft SQL Server Management Studio

```

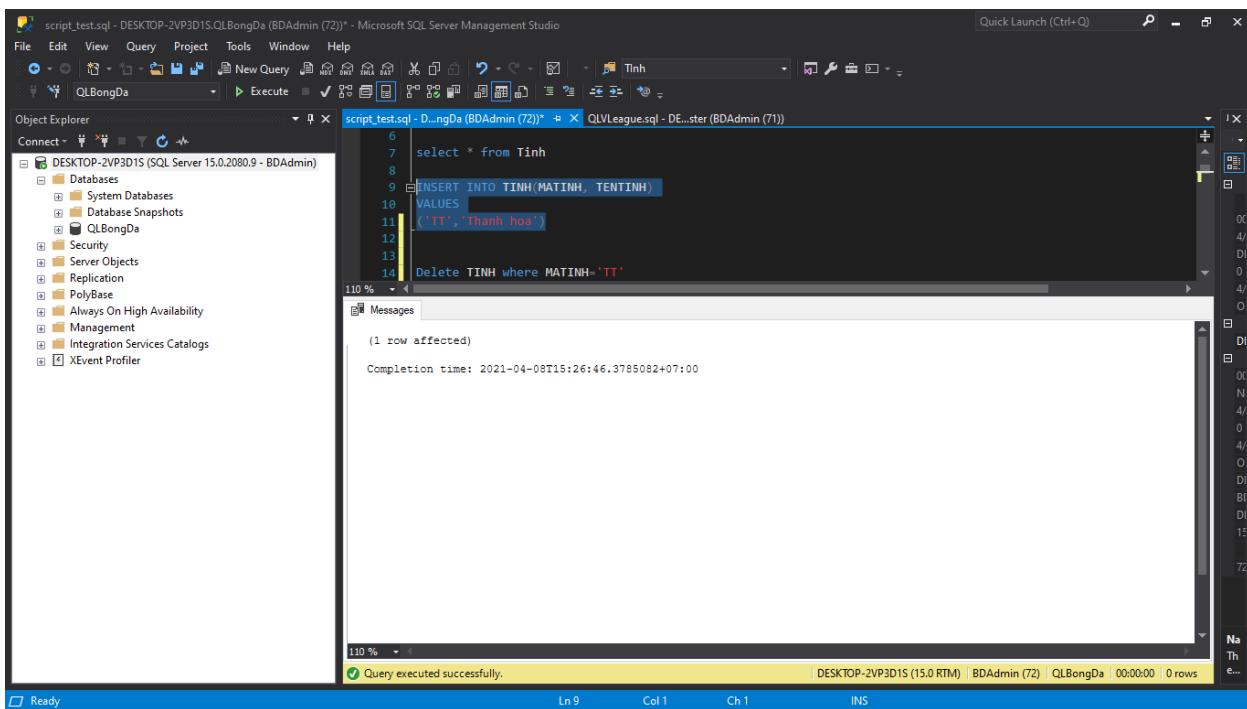
use QLBongDa
-----test BDAdmin-----
--thuc thi duoc
select * from HLV_CLB
select * from Tinh
INSERT INTO TINH(MATINH, TENTINH)
VALUES
('TT', 'Thanh hoa')

```

Results

MATINH	TENTINH
BD	Bình Dương
DN	Đà Nẵng
GL	Gia Lai
KH	Khánh Hòa
LA	Long An
PY	Phú Yên
TT	Thanh hoa

Query executed successfully.



script_test.sql - DESKTOP-2VP3D1S.QLBongDa (BDAdmin (72)) - Microsoft SQL Server Management Studio

```

select * from Tinh
INSERT INTO TINH(MATINH, TENTINH)
VALUES
('TT', 'Thanh hoa')
Delete TINH where MATINH='TT'

```

Messages

(1 row affected)

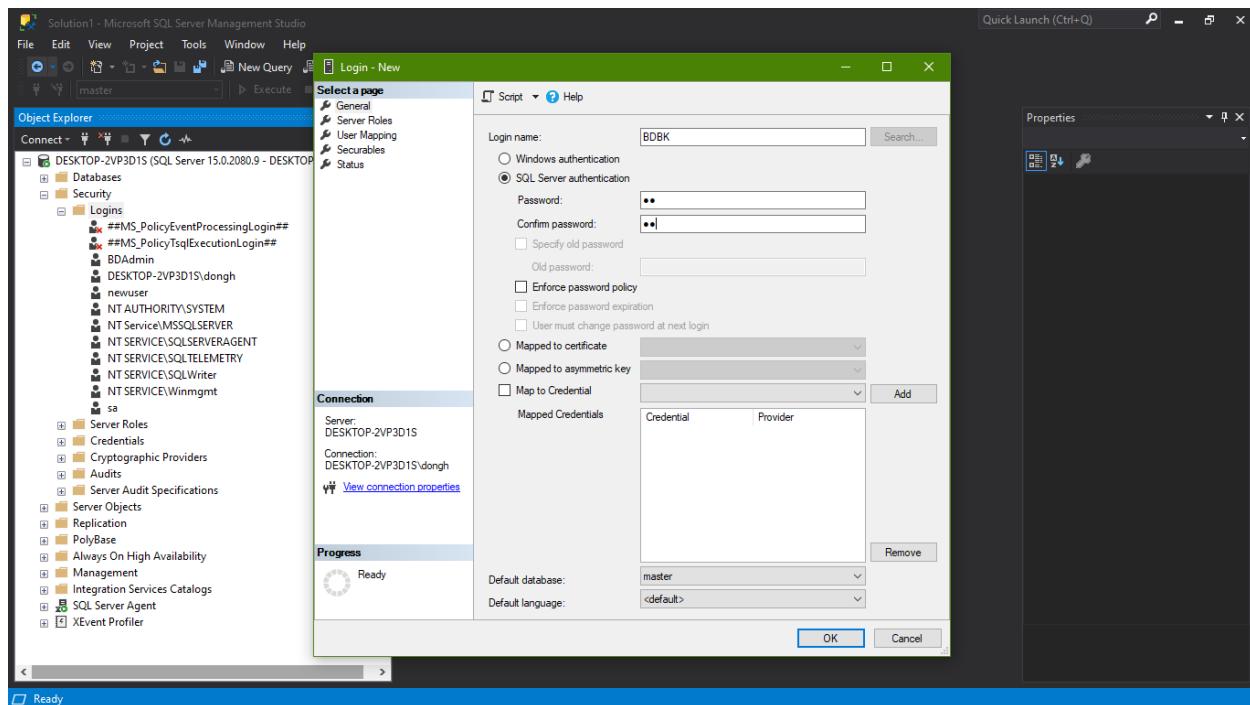
Completion time: 2021-04-08T15:26:46.3785082+07:00

Query executed successfully.

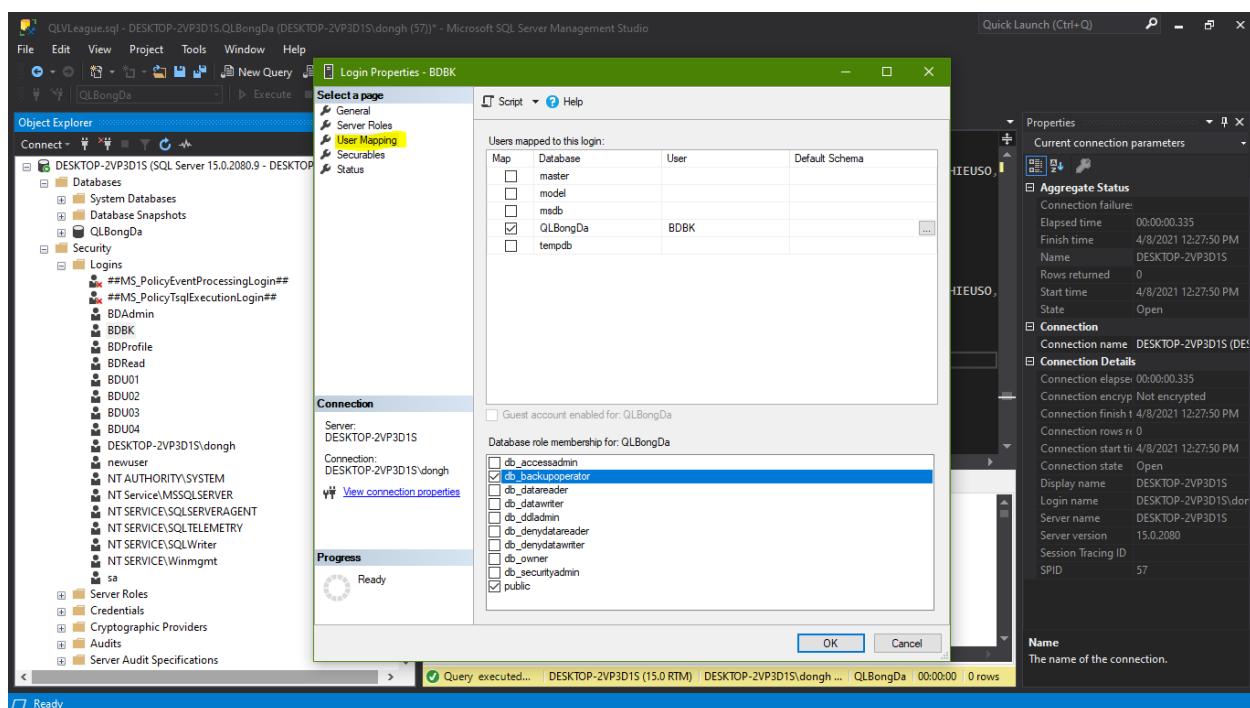
B. BDBK

1. Cài đặt

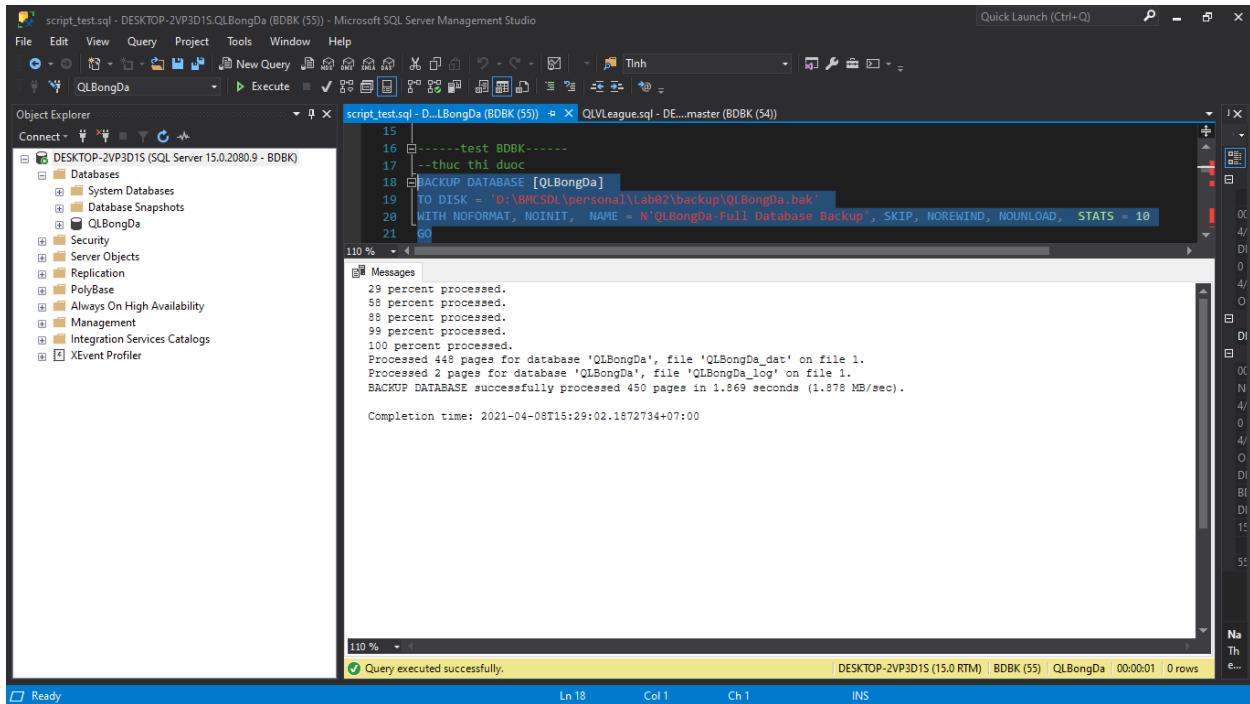
Bước 1: Tạo user mới với loại ủy quyền là SQL Server Authentication



Bước 2: Ở phần Logins Properties => User Mapping map với database QLBongDa với role db_backupoperator và public



2. Kiểm tra



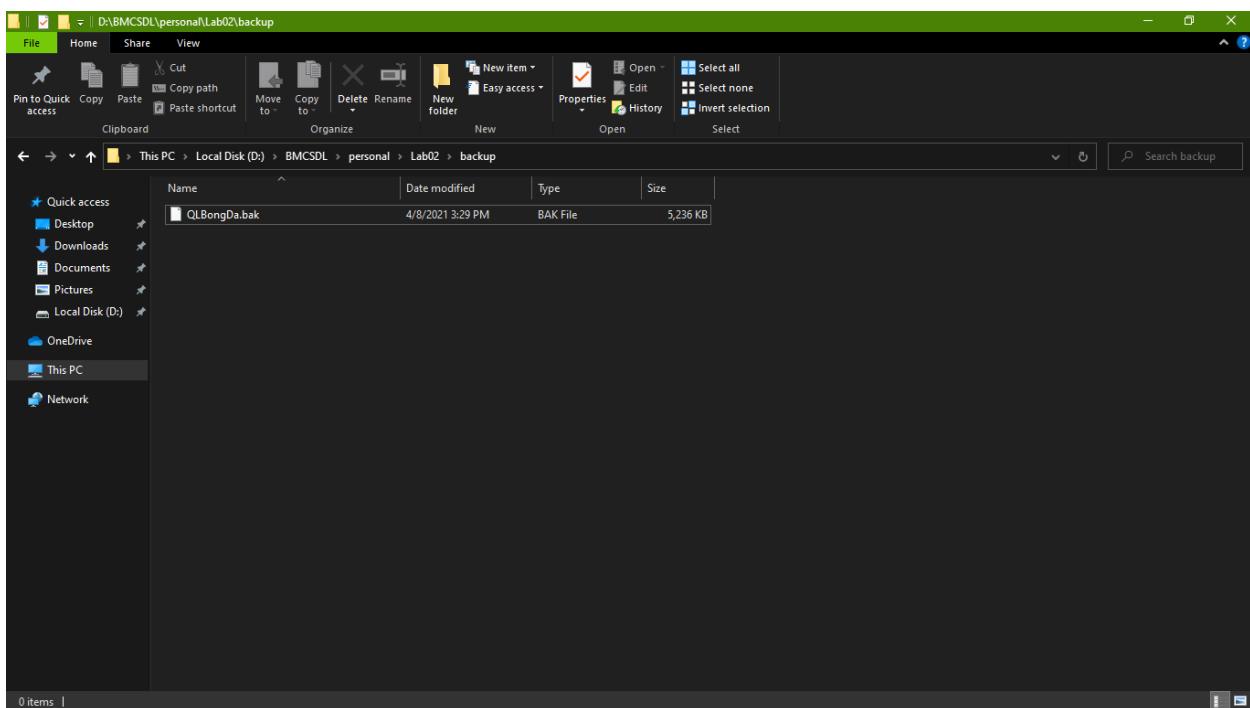
The screenshot shows the Microsoft SQL Server Management Studio (SSMS) interface. In the Object Explorer, the database 'QLBongDa' is selected under 'DESKTOP-ZVP3D1S (SQL Server 15.0.2080.9 - BDBK)'. In the center pane, a query window titled 'script_test.sql' contains the following T-SQL script:

```
15 -----  
16 -----test BDBK-----  
17 --thuc thi duoc  
18 BACKUP DATABASE [QLBongDa]  
19 TO DISK = 'D:\BMCSDL\personal\Lab02\backup\QLBongDa.bak'  
20 WITH NOFORMAT, NOINIT, NAME = 'QLBongDa-Full Database Backup', SKIP, NOREWIND, NOUNLOAD, STATS = 10  
21 GO
```

The 'Messages' pane shows the execution progress and results:

```
29 percent processed.  
51 percent processed.  
88 percent processed.  
99 percent processed.  
100 percent processed.  
Processed 448 pages for database 'QLBongDa', file 'QLBongDa_dat' on file 1.  
Processed 2 pages for database 'QLBongDa', file 'QLBongDa_log' on file 1.  
BACKUP DATABASE successfully processed 450 pages in 1.869 seconds (1.878 MB/sec).  
Completion time: 2021-04-08T15:29:02.1872734+07:00
```

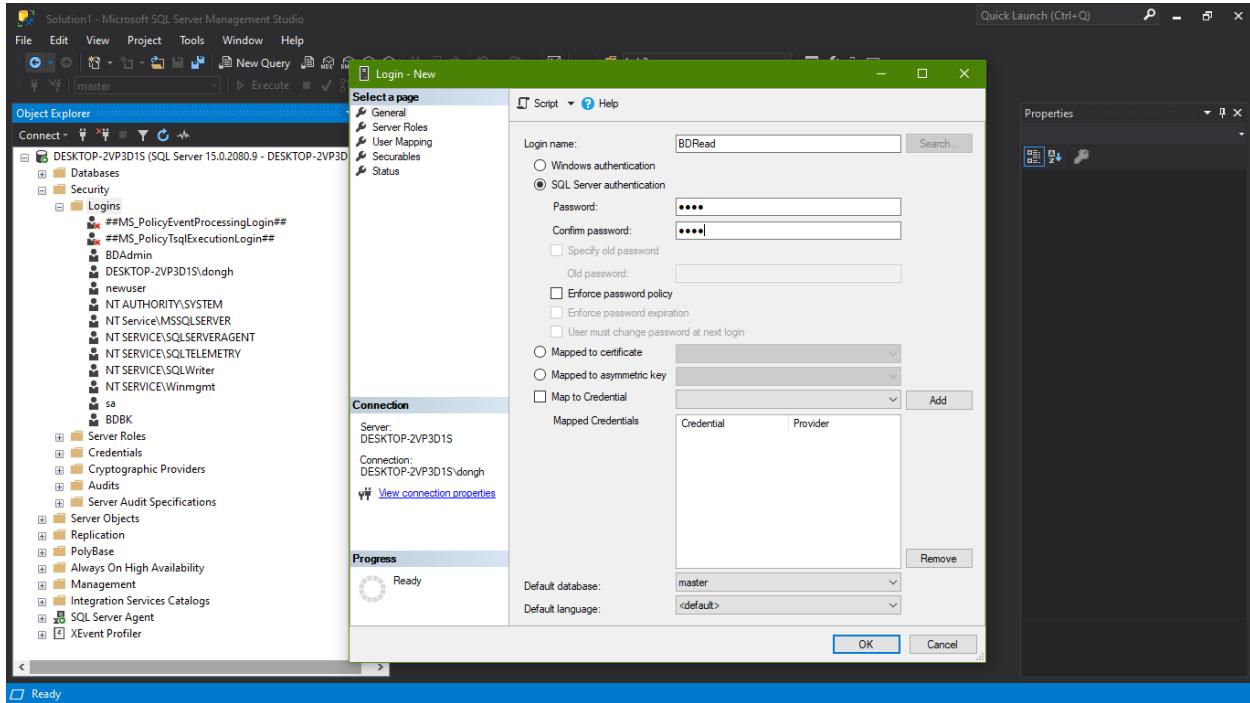
A yellow status bar at the bottom indicates 'Query executed successfully.'



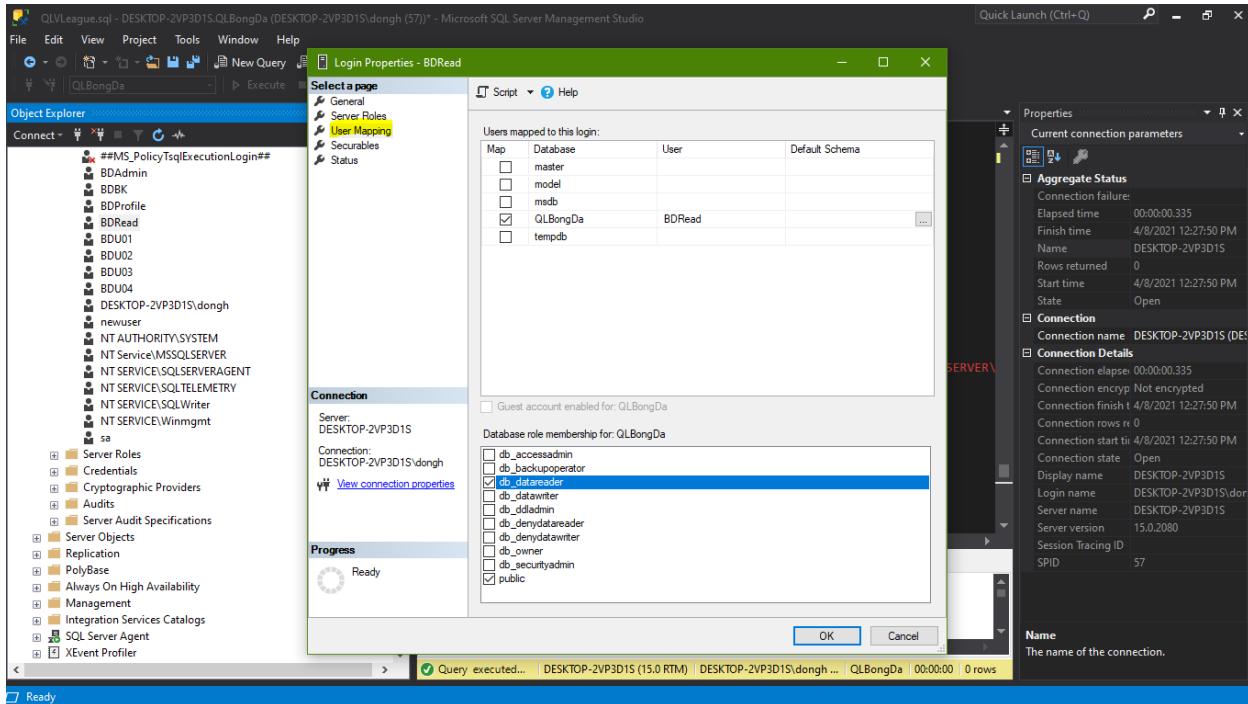
C. BDRead

1. Cài đặt

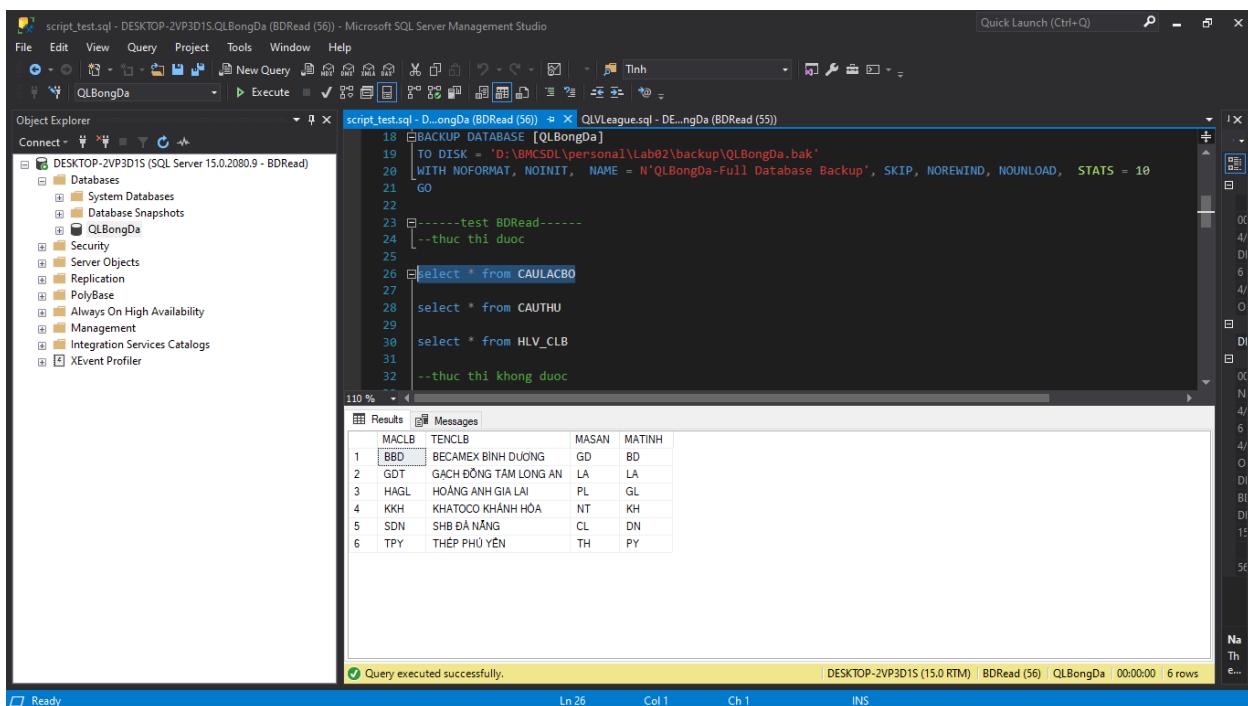
Bước 1: Tạo user mới với loại ủy quyền là **SQL Server Authentication**



Bước 2: Ở phần Logins Properties => User Mapping map với database QLBongDa với role db_datareader và public



2. Kiểm tra



```

script_test.sql - DESKTOP-2VP3D1S.QLBongDa (BDRead (56)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
QLBongDa Execute
Object Explorer
Connect - DESKTOP-2VP3D1S (SQL Server 15.0.2080.9 - BDRead)
  Databases
    System Databases
    Database Snapshots
    QLBongDa
    Security
    Server Objects
    Replication
    PolyBase
    Always On High Availability
    Management
    Integration Services Catalogs
    XEvent Profiler
script_test.sql - D...ongDa (BDRead (56)) + QLVLeague.sql - DE...ngDa (BDRead (55))
18 BACKUP DATABASE [QLBongDa]
19 TO DISK = 'D:\BMCSDL\personal\Lab02\backup\QLBongDa.bak'
20 WITH NOFORMAT, NOINIT, NAME = N'QLBongDa-Full Database Backup', SKIP, NOREWIND, NOUNLOAD,  STATS = 10
21 GO
22
23 -----test BDRead-----
24 --thuc thi duoc
25
26 select * from CAULACBO
27
28 select * from CAUTHU
29
30 select * from HLV_CLB
31
32 --thuc thi khong duoc
Results Messages
MACT HOTEN VITRI NGAYSINH DIACHI MACLB MAGQ SO
1 1 Nguyễn Vũ Phong Tiên về 1990-02-20 00:00:00.000 NULL BBD VN 17
2 2 Nguyễn Công Vinh Tiên đàو 1992-03-10 00:00:00.000 NULL HAGL VN 9
3 4 Trần Tân Tài Tiên về 1983-11-12 00:00:00.000 NULL BBD VN 8
4 5 Phan Hồng Sơn Thủ môn 1991-06-10 00:00:00.000 NULL HAGL VN 1
5 6 Ronaldinho Tiên về 1989-12-12 00:00:00.000 NULL SDN BRA 7
6 7 Robinho Tiên về 1989-10-12 00:00:00.000 NULL SDN BRA 8
7 8 Vidic Hậu vệ 1987-10-15 00:00:00.000 NULL HAGL ANH 3
8 9 Trần Văn Santos Thủ môn 1990-10-21 00:00:00.000 NULL BBD BRA 1
9 10 Nguyễn Trường Sơn Hậu vệ 1993-08-26 00:00:00.000 NULL BBD VN 4
Query executed successfully.
DESKTOP-2VP3D1S (15.0 RTM) | BDRead (56) | QLBongDa | 00:00:00 | 9 rows
Ready Ln 28 Col 1 Ch 1 INS

```

```

script_test.sql - DESKTOP-2VP3D1S.QLBongDa (BDRead (56)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
QLBongDa Execute
Object Explorer
Connect - DESKTOP-2VP3D1S (SQL Server 15.0.2080.9 - BDRead)
  Databases
    System Databases
    Database Snapshots
    QLBongDa
    Security
    Server Objects
    Replication
    PolyBase
    Always On High Availability
    Management
    Integration Services Catalogs
    XEvent Profiler
script_test.sql - D...ongDa (BDRead (56)) + QLVLeague.sql - DE...ngDa (BDRead (55))
18 BACKUP DATABASE [QLBongDa]
19 TO DISK = 'D:\BMCSDL\personal\Lab02\backup\QLBongDa.bak'
20 WITH NOFORMAT, NOINIT, NAME = N'QLBongDa-Full Database Backup', SKIP, NOREWIND, NOUNLOAD,  STATS = 10
21 GO
22
23 -----test BDRead-----
24 --thuc thi duoc
25
26 select * from CAULACBO
27
28 select * from CAUTHU
29
30 select * from HLV_CLB
31
32 --thuc thi khong duoc
Results Messages
MAHLV MACLB VAITRO
1 HLV01 BBD HLV Chính
2 HLV02 SDN HLV Chính
3 HLV03 HAGL HLV Chính
4 HLV04 KKH HLV Chính
5 HLV05 GDT HLV Chính
6 HLV06 BBD HLV thủ môn
Query executed successfully.
DESKTOP-2VP3D1S (15.0 RTM) | BDRead (56) | QLBongDa | 00:00:00 | 6 rows
Ready Ln 30 Col 1 Ch 1 INS

```

```

27 select * from CAUTHU
28
29 select * from HLV_CLB
30
31 --thuc thi khong duoc
32
33 INSERT INTO TINH(MATINH, TENTINH)
34 VALUES
35 ('CT',N'Cần Thơ');
36
37 UPDATE CAULACBO Set MACLB = 'HAGL'
38 where MASAN= 'PL' and MATINH = 'GL'
39
40
41 -----test BDU01-----

```

Messages

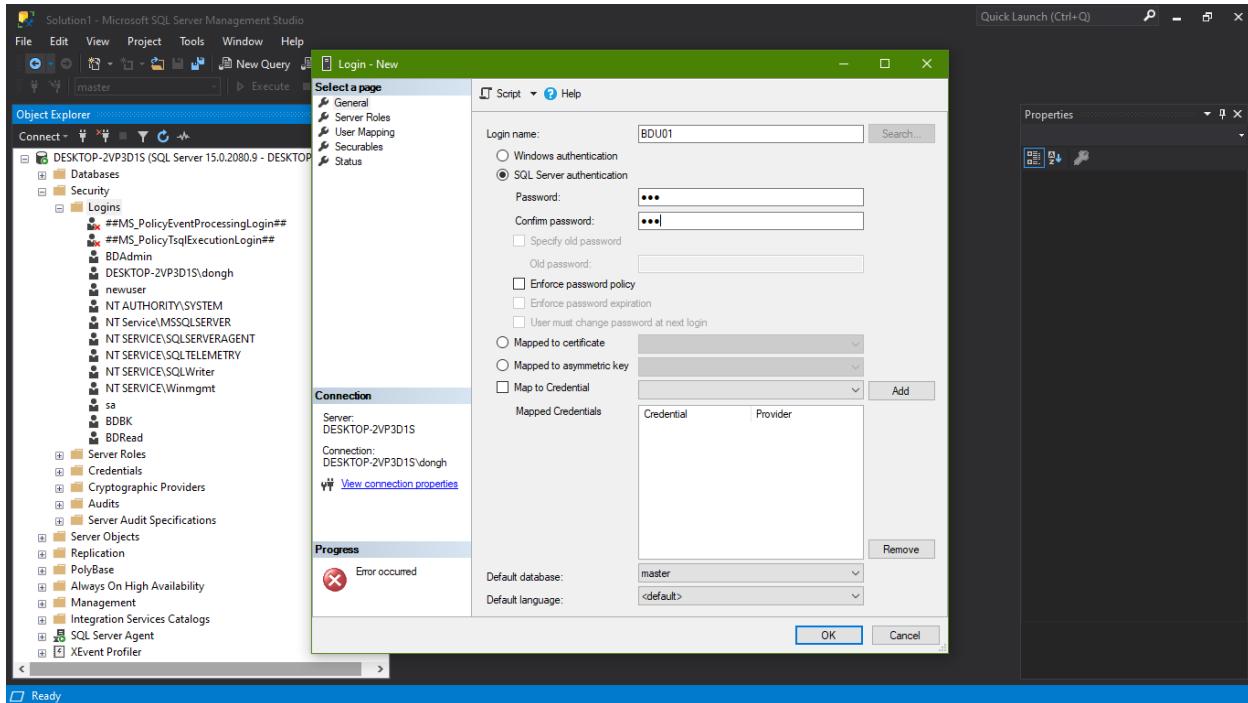
Mag 229, Level 14, State 5, Line 34
The INSERT permission was denied on the object 'TINH', database 'QLBongDa', schema 'dbo'.
Completion time: 2021-04-08T15:32:25.4131112+07:00

Query completed with errors.

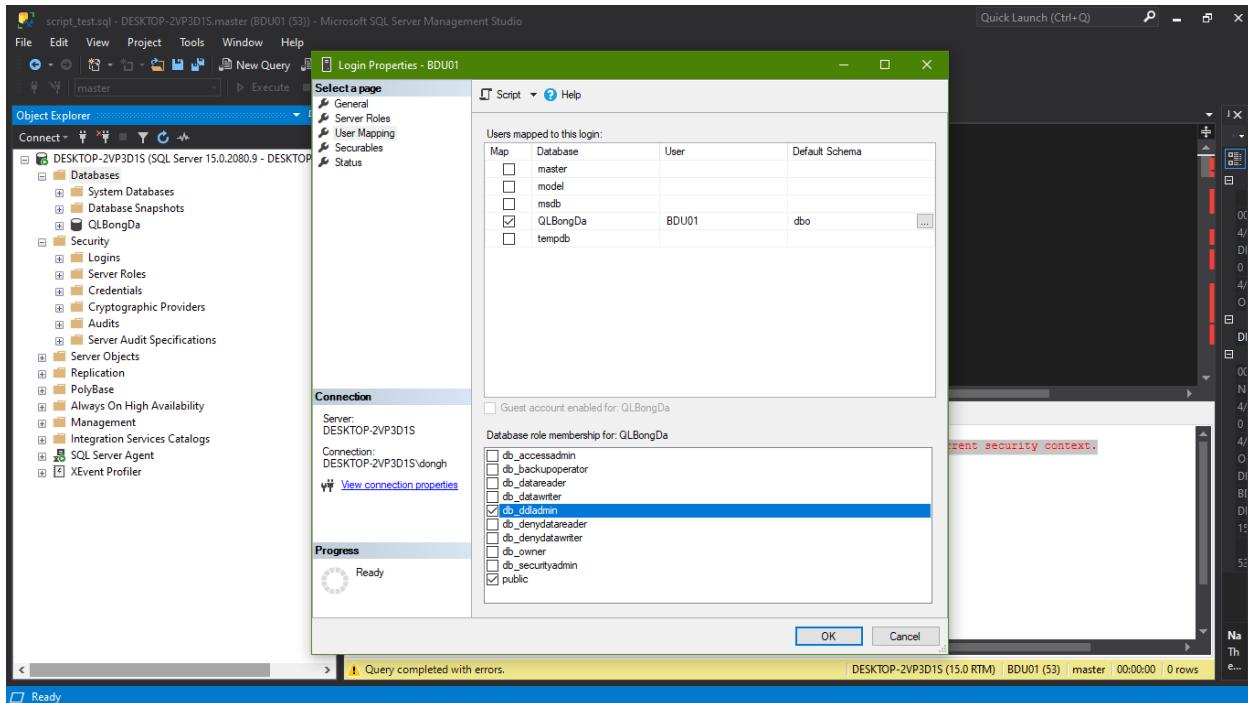
D. BDU01

1. Cài đặt

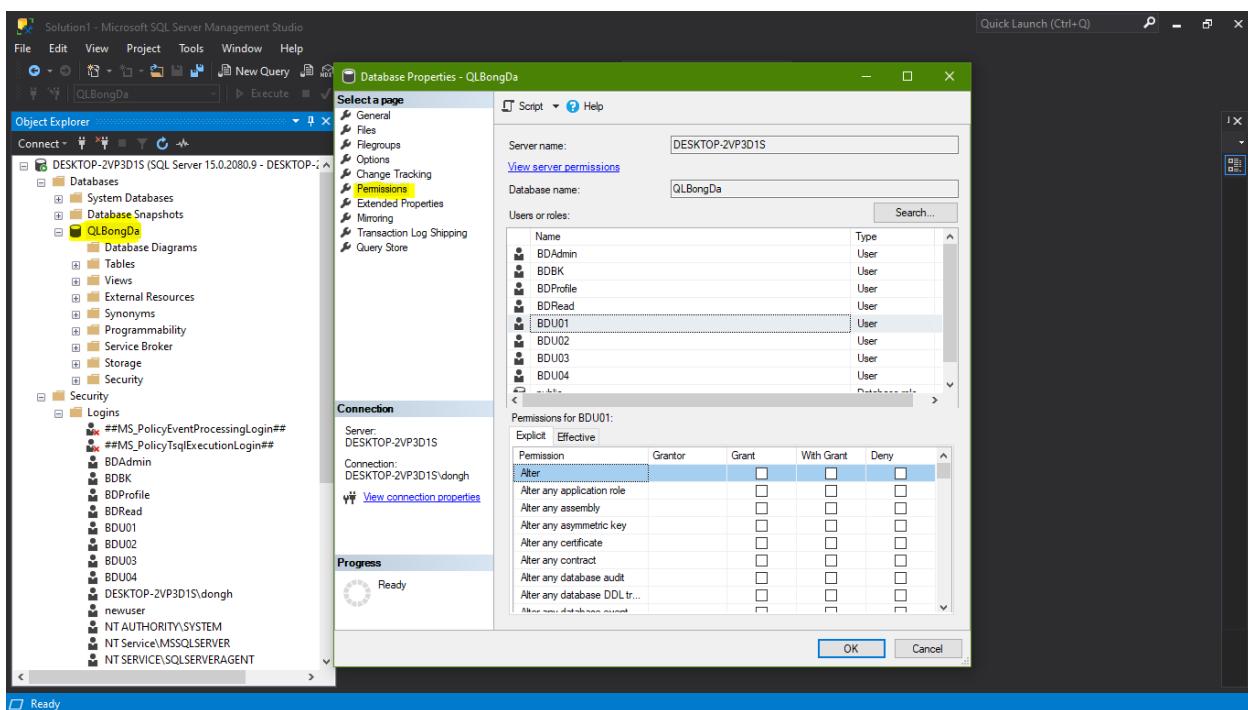
Bước 1: Tạo user mới với loại ủy quyền là SQL Server Authentication



Bước 2: Ở phần Logins Properties => User Mapping map với database QLBongDa với role db_ddladmin và public



Bước 3: Ở phần Database chọn QLBongDa => Properties => Permission



Bước 4: Bảng các quyền của db_ddladmin



Từ bảng trên, ta deny các quyền của db_ddladmin (trừ create table và connect)

Permission	Grant	With Grant	Deny
Alter	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any application role	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any assembly	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any asymmetric key	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any certificate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any contract	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any database audit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any database DDL trigger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any database event notification	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any dataspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any external data source	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any external file format	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

OK Cancel

Permission	Grant	With Grant	Deny
Alter any external file format	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any fulltext catalog	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any mask	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any message type	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any remote service binding	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any role	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any route	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any schema	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any security policy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any sensitivity classification	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any service	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any synonym	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

OK Cancel

Permissions for BDU01:

Permission	Grantor	Grant	With Grant	Deny
Alter any service		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any symmetric key		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alter any user		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Authenticate		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Backup database		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Backup log		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checkpoint		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Connect	dbo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connect replication		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Create asymmetric key		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create certificate		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create contract		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create database DDL event notification		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create default		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create fulltext catalog		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create function		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create message type		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create procedure		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create queue		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create remote service binding		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create role		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create route		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create rule		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create schema		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create service		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel

Permissions for BDU01:

Permission	Grantor	Grant	With Grant	Deny
Connect	dbo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create aggregate		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create assembly		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create asymmetric key		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create certificate		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create contract		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create database DDL event notification		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create default		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create fulltext catalog		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create function		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create message type		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create procedure		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create queue		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create remote service binding		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create role		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create route		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create rule		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create schema		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create service		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel

Permissions for BDU01:

Permission	Grantor	Grant	With Grant	Deny
Create fulltext catalog		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create function		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create message type		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create procedure		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create queue		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create remote service binding		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create role		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create route		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create rule		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create schema		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create service		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel

Permissions for BDU01:

Permission	Grantor	Grant	With Grant	Deny
Create rule		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create schema		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create service		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create symmetric key		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create synonym		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create table	dbo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create type		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create view		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create XML schema collection		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Delete		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Execute		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel

Permissions for BDU01:

Permission	Grantor	Grant	With Grant	Deny
Create XML schema collection		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Delete		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Execute		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insert		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
References		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Select		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Show plan		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subscribe query notifications		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take ownership		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unmask		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Update		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Permissions for BDU01:

Permission	Grantor	Grant	With Grant	Deny
Show plan		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subscribe query notifications		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take ownership		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unmask		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Update		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
View any column encryption key definition		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
View any column master key definition		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
View any sensitivity classification		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
View database state		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
View definition		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Kiểm tra

```

script_test.sql - DESKTOP-2VP3D15.QLBongDa (BDU01 (55)) - Microsoft SQL Server Management Studio
File Edit View Project Tools Window Help
File Edit View Project Tools Window Help
New Query Execute
Object Explorer
Connect + TQLBongDa Tinh
DESKTOP-2VP3D15 (SQL Server 15.0.2080.9 - BDU01)
Databases System Databases Database Snapshots
QLBongDa Database Diagrams Tables
System Tables FileTables External Tables Graph Tables
dbo.BANGKH dbo.CAULACBO dbo.CAUTHU dbo.DoiHoiTro
dbo.HLV_CLB dbo.HUANLUYENVIEN dbo.QUOCGIA dbo.SANVD
dbo.TINH dbo.TRANDAU Views External Resources Synonyms Programmability Service Broker Storage Security
Security Server Objects Replication PolyBase

```

```

script_test.sql - DESKTOP-2VP3D15.QLBongDa (BDU01 (55)) - Microsoft SQL Server Management Studio
File Edit View Project Tools Window Help
File Edit View Project Tools Window Help
New Query Execute
Object Explorer
Connect + TQLBongDa Tinh
DESKTOP-2VP3D15 (SQL Server 15.0 RTM) BDU01 (55) QLBongDa 00:00:00 0 rows
Messages
Commands completed successfully.
Completion time: 2021-04-08T15:42:42.1707555+07:00

```

```

38 UPDATE CAULACBO Set MACLB = 'HAGL'
39 where MASAN= 'PL' and MATINH = 'GL'
40
41 -----test BDU01-----
42 --Thuc thi duoc--
43 create table DoiHoiTro
44 (
45     TenHT nvarchar(20),
46     MaHT char(4),
47     primary key (MaHT)
48 )
49 go
50
51 --Thuc thi khong duoc--
52

```

```

43 Create table DoiHoiTro
44 (
45     TenHT nvarchar(20),
46     MaHT char(4)
47     primary key (MaHT)
48 )
49 go
50
51 --Thuc thi khong duoc--
52
53 UPDATE CAULACBO Set MACLB = 'HAGL'
54 where MASAN= 'PL' and MATINH = 'GL'
55
56 delete QUOCGIA where MAQG='THA'
57 -----test BDU03-----

```

Messages

Msg 229, Level 14, State 5, Line 53
The SELECT permission was denied on the object 'CAULACBO', database 'QLBongDa', schema 'dbo'.
Msg 229, Level 14, State 5, Line 53
The UPDATE permission was denied on the object 'CAULACBO', database 'QLBongDa', schema 'dbo'.
Completion time: 2021-04-08T15:43:31.4816684+07:00

Query completed with errors.

```

43 Create table DoiHoiTro
44 (
45     TenHT nvarchar(20),
46     MaHT char(4)
47     primary key (MaHT)
48 )
49 go
50
51 --Thuc thi khong duoc--
52
53 UPDATE CAULACBO Set MACLB = 'HAGL'
54 where MASAN= 'PL' and MATINH = 'GL'
55
56 delete QUOCGIA where MAQG='THA'
57 -----test BDU03-----

```

Messages

Msg 229, Level 14, State 5, Line 56
The SELECT permission was denied on the object 'QUOCGIA', database 'QLBongDa', schema 'dbo'.
Msg 229, Level 14, State 5, Line 56
The DELETE permission was denied on the object 'QUOCGIA', database 'QLBongDa', schema 'dbo'.
Completion time: 2021-04-08T15:44:00.4744730+07:00

Query completed with errors.

```

49 go
50
51 --Thuc thi khong duoc--
52
53 select * from TINH
54
55 UPDATE CAULACBO Set MACLB = 'HAGL'
56 where MASAN= 'PL' and MATINH = 'GL'
57
58 delete QUOCGIA where MAQG='THA'
59
60 drop table DoiHoiTro
61
62
63

```

Msg 3701, Level 14, State 20, Line 60
Cannot drop the table 'DoiHoiTro', because it does not exist or you do not have permission.

Completion time: 2021-04-08T22:50:53.2075687+07:00

```

49 go
50
51 --Thuc thi khong duoc--
52
53 select * from TINH
54
55 UPDATE CAULACBO Set MACLB = 'HAGL'
56 where MASAN= 'PL' and MATINH = 'GL'
57
58 delete QUOCGIA where MAQG='THA'
59
60 drop table DoiHoiTro
61
62
63

```

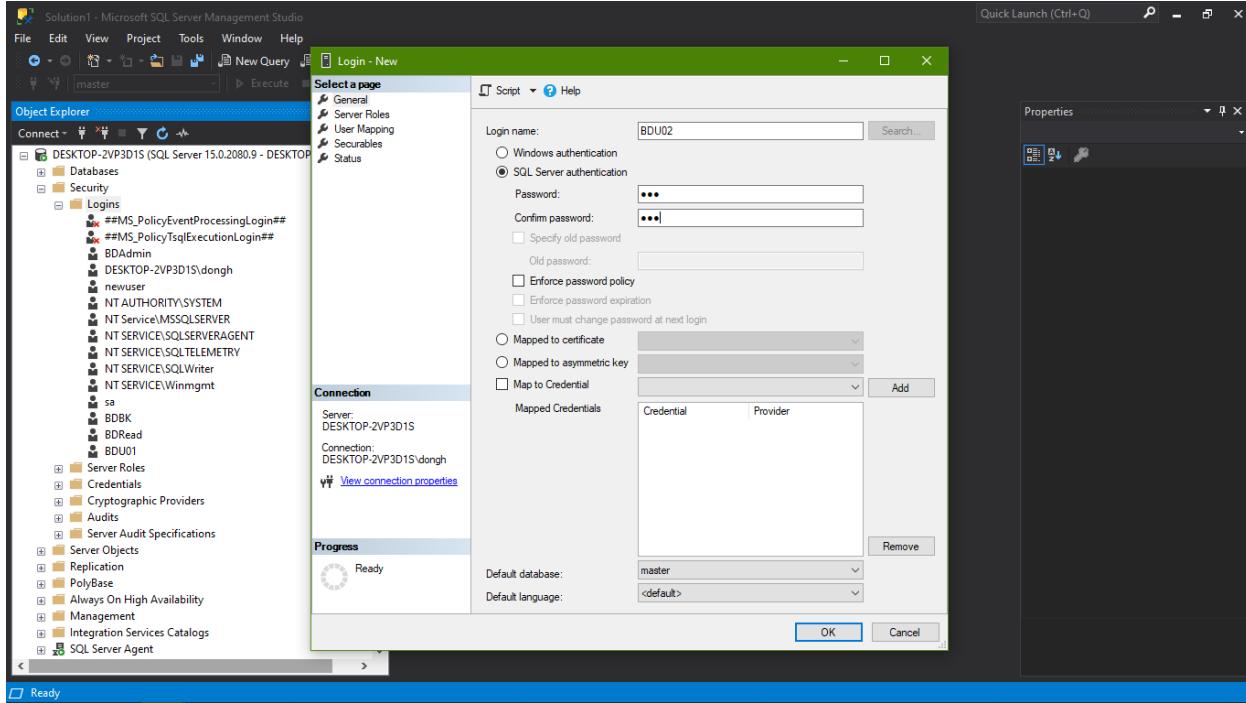
Msg 229, Level 14, State 5, Line 53
The SELECT permission was denied on the object 'TINH', database 'QLBongDa', schema 'dbo'.

Completion time: 2021-04-08T23:13:26.0866695+07:00

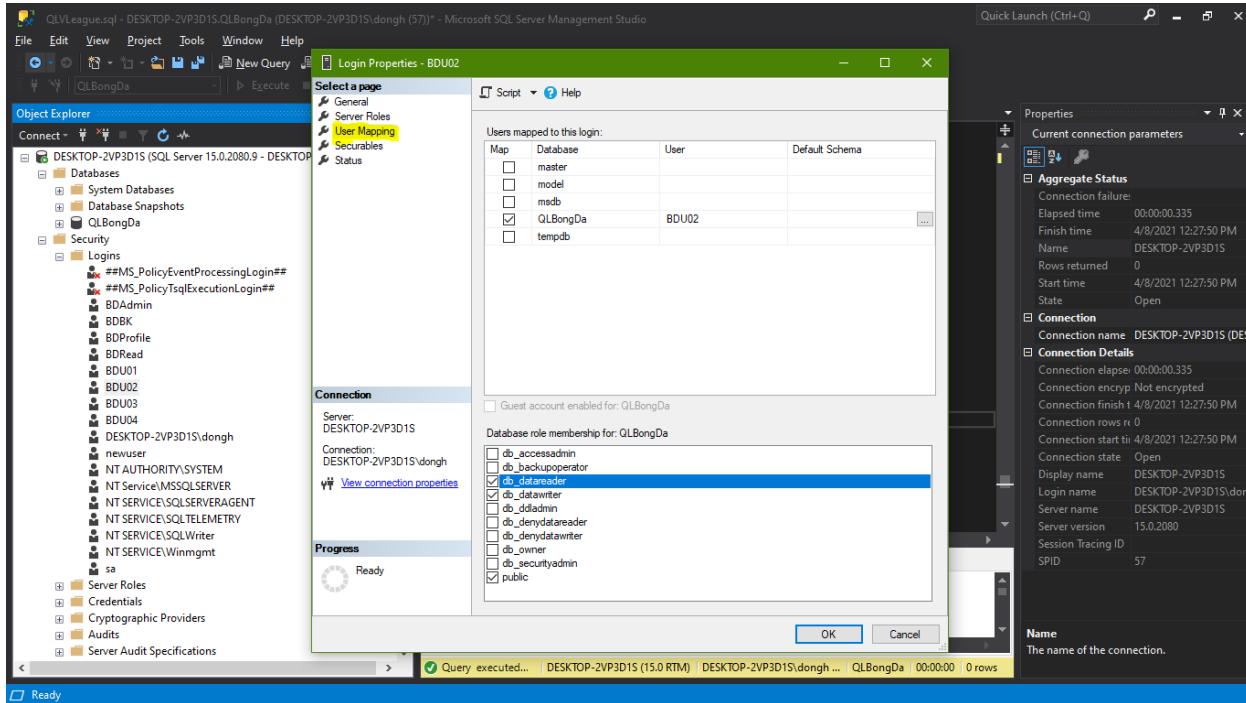
E. BDU02

1. Cài đặt

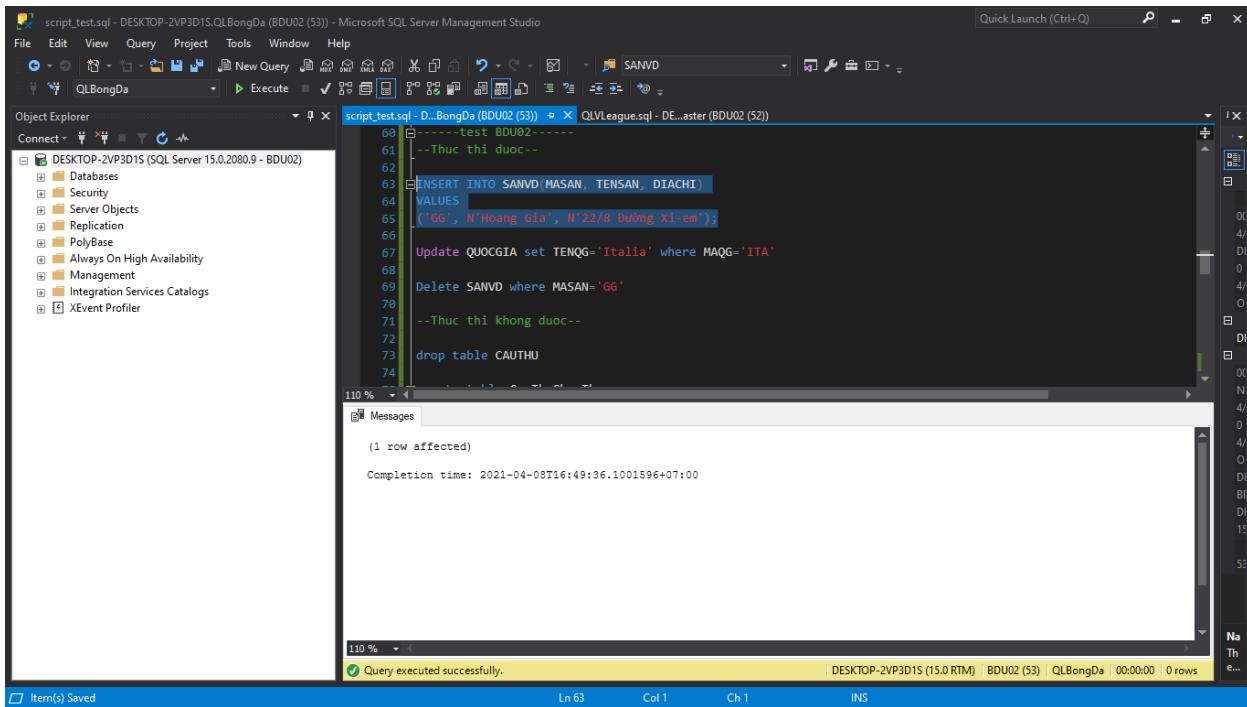
Bước 1: Tạo user mới với loại ủy quyền là **SQL Server Authentication**



Bước 2: Ở phần Logins Properties => User Mapping map với database QLBongDa với role db_datareader, db_datawriter và public



2. Kiểm tra



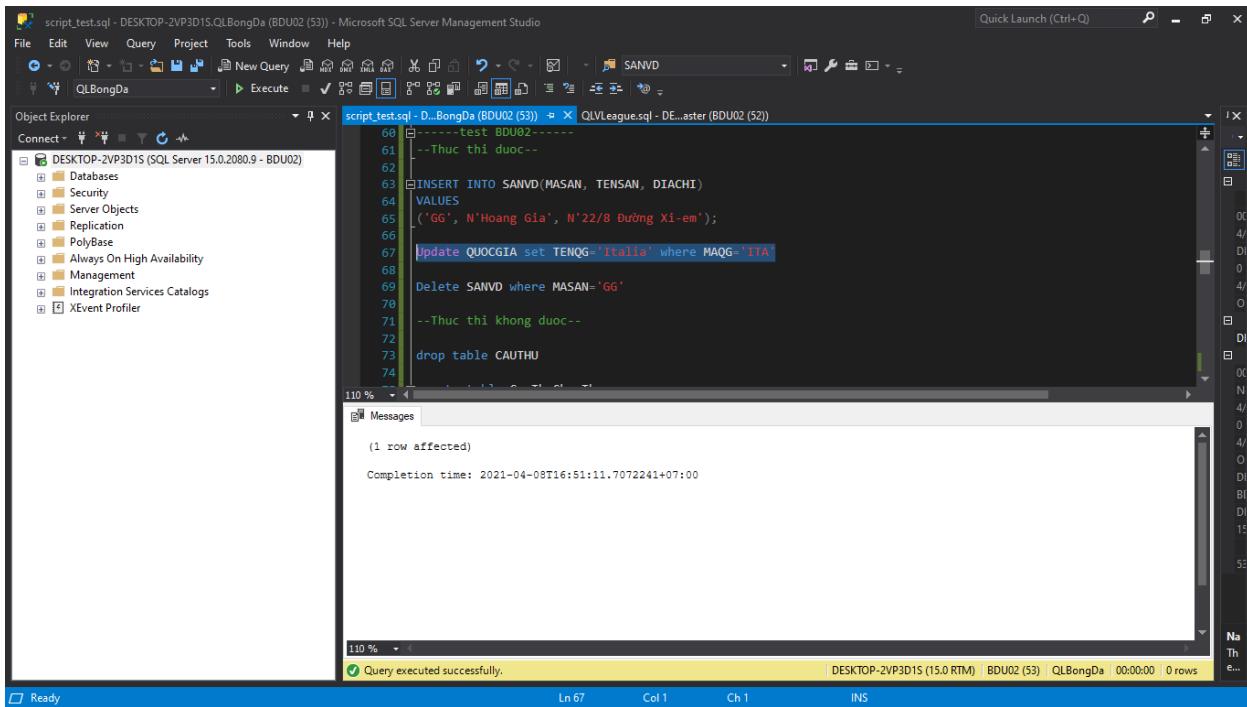
The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left shows a connection to 'DESKTOP-2VP3D15 (SQL Server 15.0.2080.9 - BDU02)' with databases like SANVD, Security, and Server Objects. The central pane displays a script named 'script_test.sql' with the following content:

```

60 -----test BDU02-----
61 --Thuc thi duoc--
62
63 INSERT INTO SANVD(MASAN, TENSAN, DIACHI)
64 VALUES
65 ('GG', N'Hoàng Gia', N'22/8 Đường Xí-em');
66
67 Update QUOCGIA set TENQG='Italia' where MAQG='ITA'
68
69 Delete SANVD where MASAN='GG'
70
71 --Thuc thi khong duoc--
72
73 drop table CAUTHU
74

```

The 'Messages' pane at the bottom shows the output: '(1 row affected)' and 'Completion time: 2021-04-08T16:49:36.1001596+07:00'. A yellow bar at the bottom indicates 'Query executed successfully.'



This screenshot is identical to the one above, showing the same SQL script execution in Microsoft SQL Server Management Studio. The output in the 'Messages' pane shows '(1 row affected)' and 'Completion time: 2021-04-08T16:51:11.7072241+07:00'. A yellow bar at the bottom indicates 'Query executed successfully.'

The screenshot shows the Microsoft SQL Server Management Studio interface. The title bar reads "script_test.sql - DESKTOP-2VP3D15.QLBongDa (BDU02 (53)) - Microsoft SQL Server Management Studio". The Object Explorer pane on the left shows a connection to "DESKTOP-2VP3D15 (SQL Server 15.0.2080.9 - BDU02)" with nodes for Databases, Security, Server Objects, Replication, PolyBase, Always On High Availability, Management, and Integration Services Catalogs. The main query editor window contains the following SQL script:

```

60 -----test BDU02-----
61 --Thuc thi duoc--
62
63 INSERT INTO SANVD(MASAN, TENSAN, DIACHI)
64 VALUES
65 ('GG', N'Hoang Gia', N'22/8 Đường Xi-em');
66
67 Update QUOCGIA set TENQG='Italia' where MAQG='ITA'
68
69 Delete SANVD where MASAN='GG'
70
71 --Thuc thi khong duoc--
72
73 drop table CAUTHU
74

```

The "Messages" pane at the bottom shows the output:

```

(1 row affected)

Completion time: 2021-04-08T16:51:48.0502612+07:00

110 %
[green checkmark] Query executed successfully.

```

The screenshot shows the Microsoft SQL Server Management Studio interface, identical to the one above but with a different outcome. The title bar is the same. The Object Explorer pane shows the same connection details. The main query editor window contains the same SQL script. The "Messages" pane at the bottom shows the output:

```

110 %
[red exclamation mark] Query completed with errors.

Msg 3701, Level 14, State 20, Line 73
Cannot drop the table 'CAUTHU', because it does not exist or you do not have permission.

Completion time: 2021-04-08T16:52:17.5995920+07:00

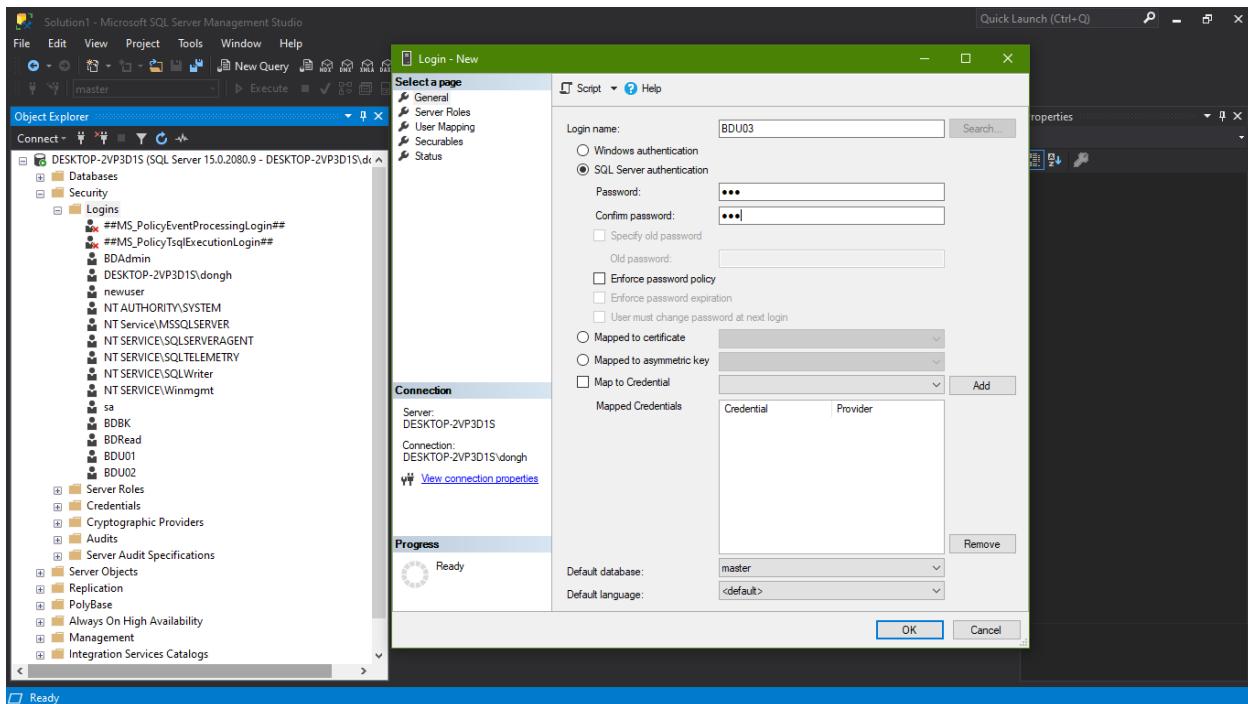
```

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, a connection to 'DESKTOP-2VP3D1S (SQL Server 15.0.2080.9 - BDU02)' is selected. In the center pane, a script named 'script_test.sql' is being run. The script contains SQL code to delete a table and create another, followed by a comment '-----test BDU03-----'. The 'Messages' tab at the bottom shows an error message: 'Msg 262, Level 14, State 1, Line 75 CREATE TABLE permission denied in database 'QLBongDa''. Below the messages, it says 'Completion time: 2021-04-08T16:53:02.0744462+07:00'.

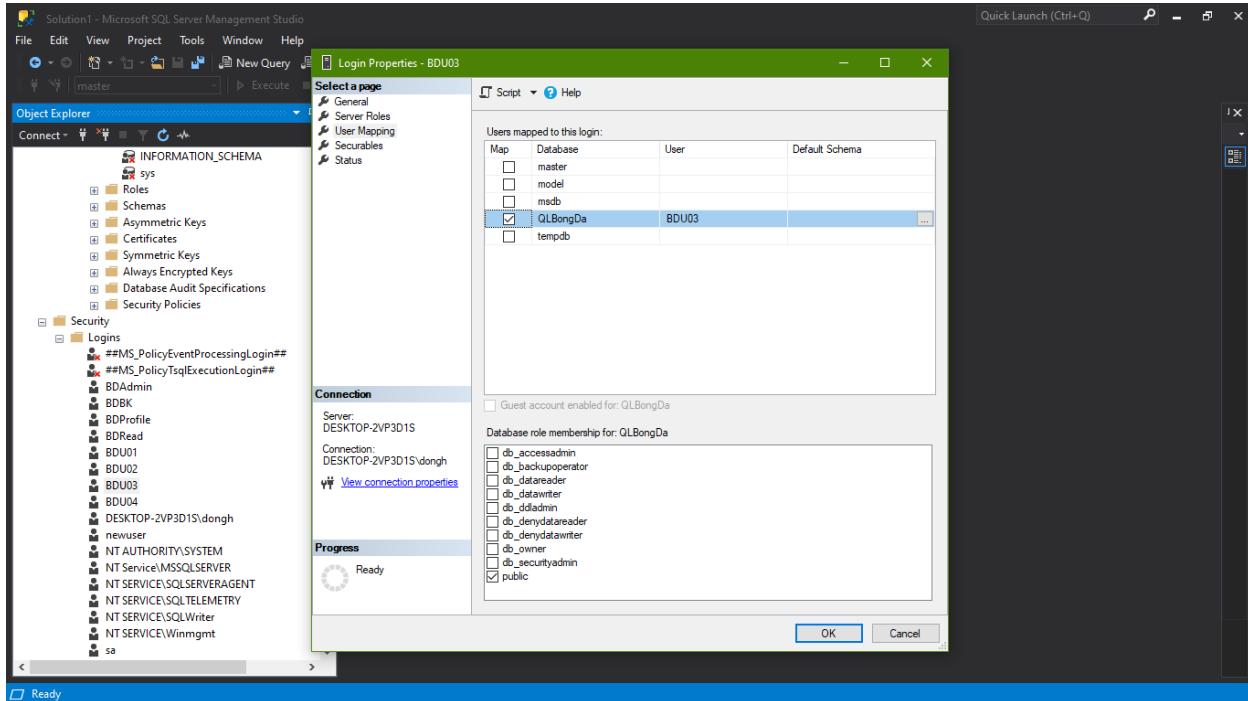
F. BDU03

1. Cài đặt

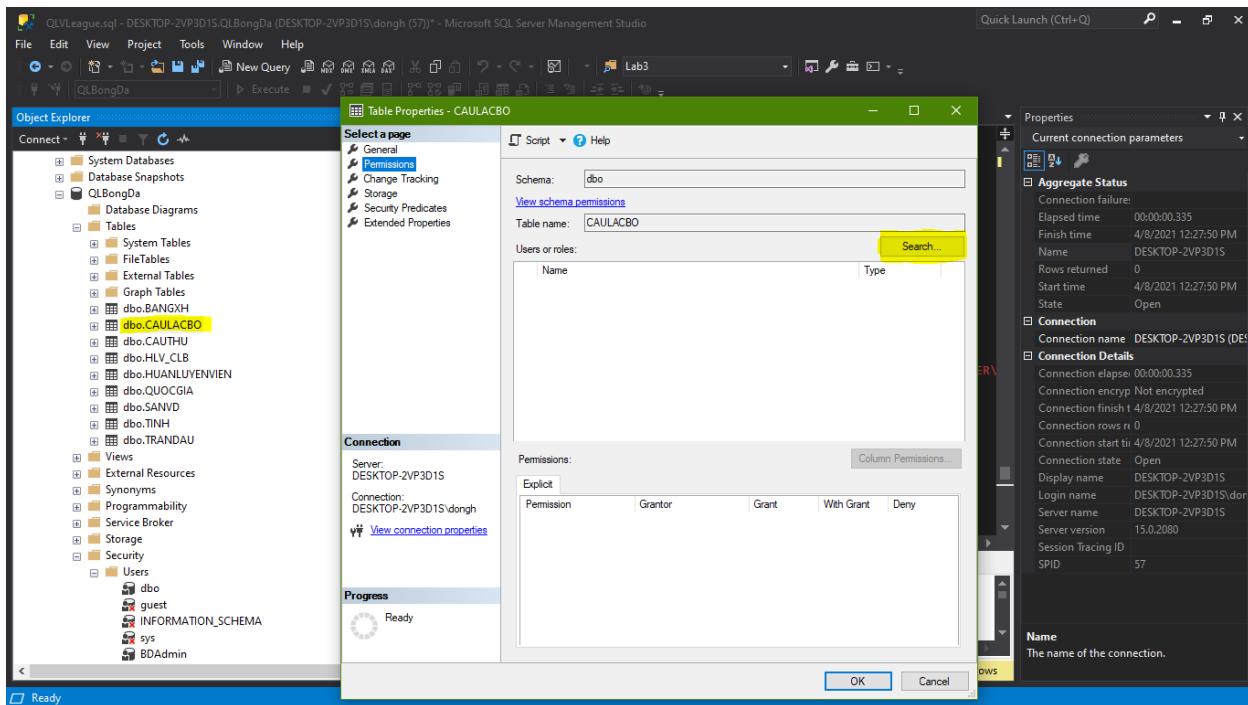
Bước 1: Tạo user mới với loại ủy quyền là SQL Server Authentication



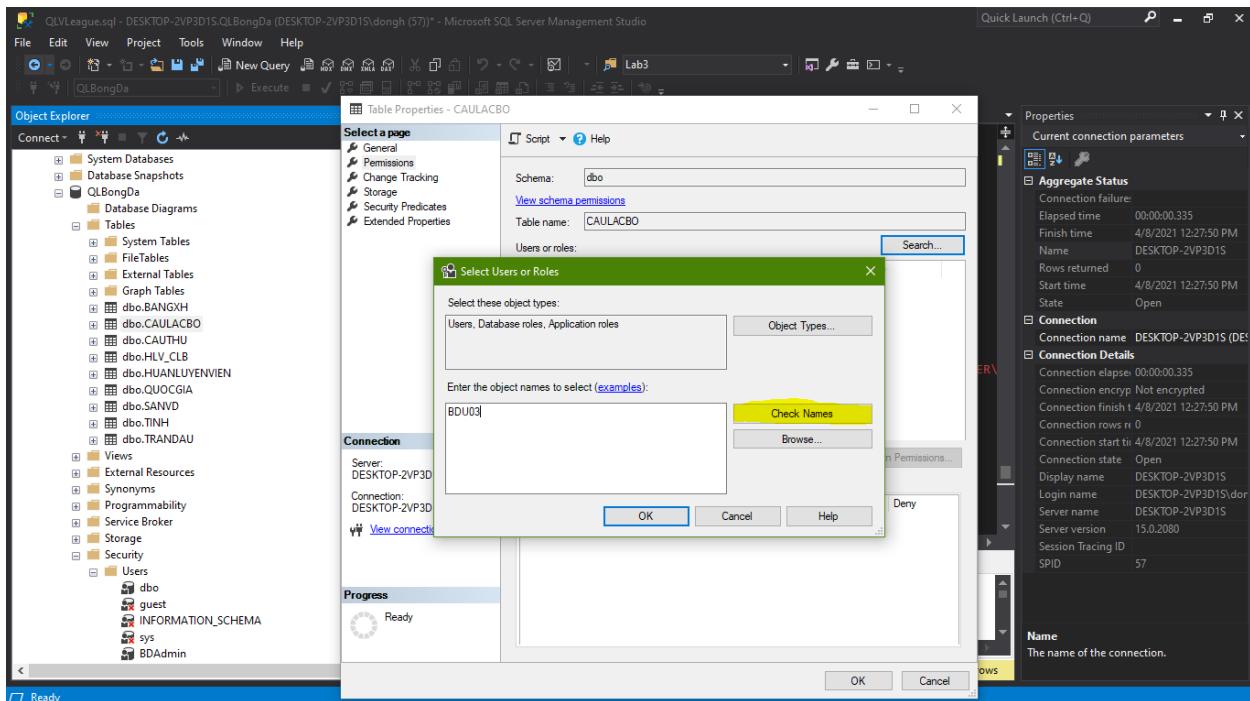
Bước 2: Ở phần Logins Properties => User Mapping map với database QLBongDa với role public



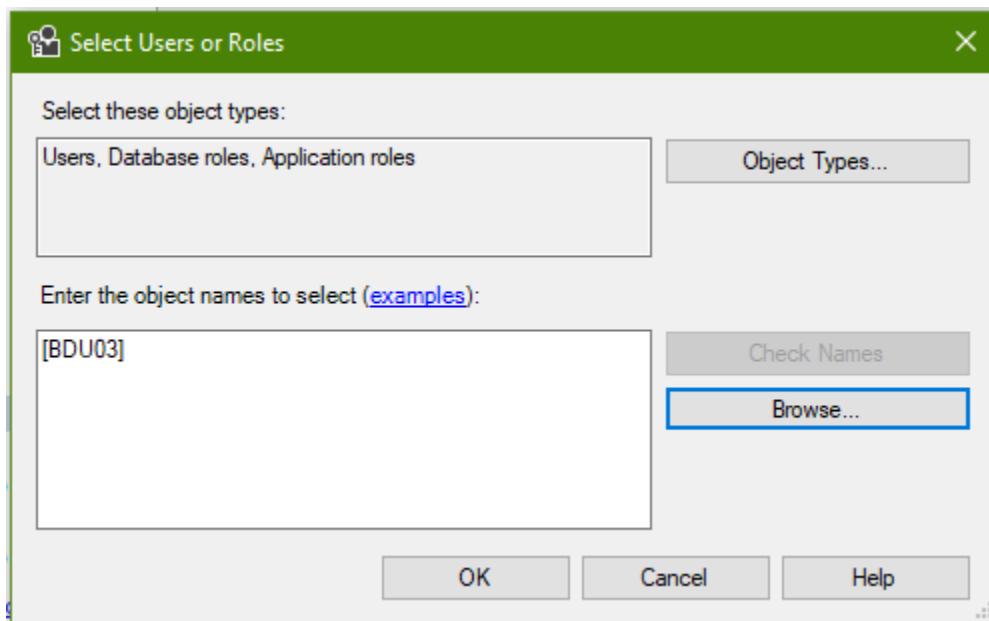
Bước 3: Ở phần Database chọn QLBongDa => Tables => dbo.CAULACBO => search



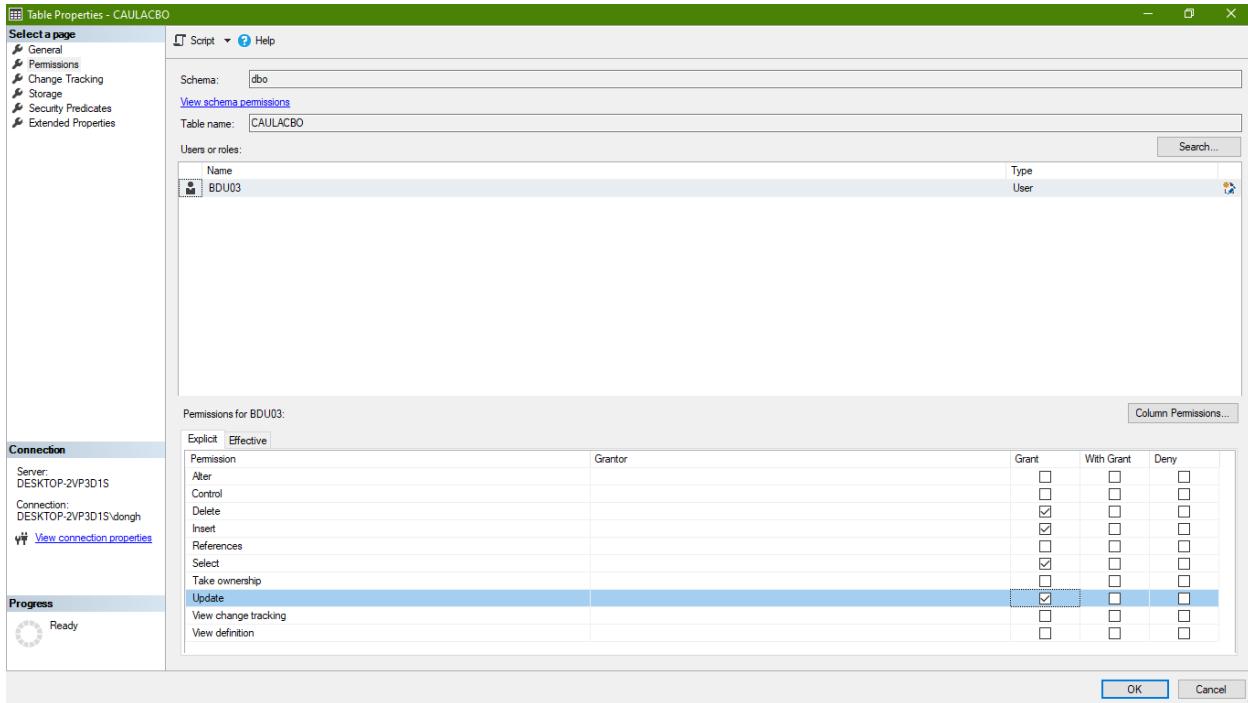
Bước 4: Nhập tên user BDU03 và chọn Check Name



Bước 5: Tìm user BDU03 => OK



Bước 6: Sau đó Grant Permission – chọn Delete, Insert, Select, Update



2. Kiểm tra

```

script_test.sql - DESKTOP-2VP3D15.QLBongDa (BDU03 (54)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query Execute CAULACBO QLBongDa
Object Explorer
Connect: DESKTOP-2VP3D15 (SQL Server 15.0.2080.9 - BDU03)
  Databases
    System Databases
    Database Snapshots
    QLBongDa
  Security
    Server Objects
    Replication
    PolyBase
    Always On High Availability
    Management
    Integration Services Catalogs
    XEvent Profiler
script_test.sql - DESKTOP-2VP3D15.QLBongDa (BDU03 (54)) - QLVLeague.sql - DE...aster (BDU03 (75))
81 go
82
83 -----test BDU03-----
84 --Thực thi được--
85
86 select * from CauLacBo
87
88 INSERT INTO CAULACBO(MACLB, TENCLB, MASAN, MATINH)
89 VALUES
90 ('HV', 'Hàng vương', 'GD', 'BD');
91
92 delete CAULACBO where MACLB='HV'
93
94 --Thực thi không được--
95
Results Messages
MACLB TENCLB MASAN MATINH
1 BBD BECAMEX BINH DƯƠNG GD BD
2 GDT GẠCH ĐÔNG TÂM LONG AN LA LA
3 HAGL HOÀNG ANH GIA LAI PL GL
4 KKH KHATOCO KHÁNH HÒA NT KH
5 SDN SHB ĐÀ NẴNG CL DN
6 TPY THÉP PHÚ YÊN TH PY

```

The screenshot shows the results of the SQL script execution. It displays the inserted row (HV, Hàng vương, GD, BD) and the deleted row (HV).

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left shows the connection to 'DESKTOP-2VP3D15 (SQL Server 15.0.2080.9 - BDU03)'. The 'QLBongDa' database is selected. The 'script_test.sql' file is open in the main pane, containing the following SQL script:

```

81 go
82
83 -----test BDU03-----
84 [--Thực thi được--
85
86 select * from CauLacBo
87
88 INSERT INTO CAULACBO(MACLB, TENCLB, MASAN, MATINH)
89 VALUES
90 ('HV', N'Hàng vương', 'GD', 'BD');
91
92 delete CAULACBO where MACLB='HV'
93
94 --Thực thi không được--
95

```

The 'Messages' pane at the bottom displays the results of the execution:

- (1 row affected)
- Completion time: 2021-04-08T17:20:01.8221425+07:00
- Query executed successfully.

At the bottom right, the status bar shows: DESKTOP-2VP3D15 (15.0 RTM) | BDU03 (54) | QLBongDa | 00:00:00 | 0 rows

The screenshot shows the Microsoft SQL Server Management Studio interface, identical to the one above, with the same connection and database selected. The 'script_test.sql' file is open, containing the same SQL script. The 'Messages' pane shows the following results:

- (1 row affected)
- Completion time: 2021-04-08T17:19:27.9280985+07:00
- Query executed successfully.

At the bottom right, the status bar shows: DESKTOP-2VP3D15 (15.0 RTM) | BDU03 (54) | QLBongDa | 00:00:00 | 0 rows

script_test.sql - DESKTOP-2VP3D15.QLBongDa (BDU03 (54)) - Microsoft SQL Server Management Studio

```

92 delete CAULACBO where MACLB='HV'
93
94 UPDATE CAULACBO Set MACLB = 'HAGL'
95 where MASAN= 'PL' and MATINH = 'GL'
96
97 --Thuc thi khong duoc--
98
99 select * from QUOCGIA
100
101
102 INSERT INTO TINH(MATINH, TENTINH)
103 VALUES
104 ('CT', 'Can Tho');
105
106 delete SANVD where MASAN='GD'

```

Messages

(1 row affected)

Completion time: 2021-04-08T17:21:41.4893059+07:00

110 %

Query executed successfully.

DESKTOP-2VP3D15 (15.0 RTM) | BDU03 (54) | QLBongDa | 00:00:00 | 0 rows

script_test.sql - DESKTOP-2VP3D15.QLBongDa (BDU03 (54)) - Microsoft SQL Server Management Studio

```

92 delete CAULACBO where MACLB='HV'
93
94 UPDATE CAULACBO Set MACLB = 'HAGL'
95 where MASAN= 'PL' and MATINH = 'GL'
96
97 --Thuc thi khong duoc--
98
99 select * from QUOCGIA
100
101
102 INSERT INTO TINH(MATINH, TENTINH)
103 VALUES
104 ('CT', 'Can Tho');
105
106 delete SANVD where MASAN='GD'

```

Messages

Msg 229, Level 14, State 5, Line 100
The SELECT permission was denied on the object 'QUOCGIA', database 'QLBongDa', schema 'dbo'.

Completion time: 2021-04-08T17:23:33.0684453+07:00

110 %

Query completed with errors.

DESKTOP-2VP3D15 (15.0 RTM) | BDU03 (54) | QLBongDa | 00:00:00 | 0 rows

```

script_test.sql - DESKTOP-2VP3D1S.QLBongDa (BDU03 (54)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
File New Query Execute
QLBongDa CAULACBO
Object Explorer
Connect: DESKTOP-2VP3D1S (SQL Server 15.0.2080.9 - BDU03)
  Databases
    System Databases
    Database Snapshots
    QLBongDa
  Security
  Server Objects
  Replication
  PolyBase
  Always On High Availability
  Management
  Integration Services Catalogs
  XEvent Profiler
script_test.sql - D...BongDa (BDU03 (54))  QLVLeague.sql - DE...aster (BDU03 (75))
92 delete CAULACBO where MACLB='HV'
93
94
95 UPDATE CAULACBO Set MACLB = 'HAGL'
96 where MASAN= 'PL' and MATINH = 'GL'
97
98 --Thuc thi khong duoc--
99
100 select * from QUOCGIA
101
102 INSERT INTO TINH(MATINH, TENTINH)
103 VALUES
104 ('CT', 'Can Tho');
105
106 delete SANVD where MASAN='GD'

Messages
Msg 229, Level 14, State 5, Line 102
The INSERT permission was denied on the object 'TINH', database 'QLBongDa', schema 'dbo'.
Completion time: 2021-04-08T17:24:10.3523517+07:00

Completion time: 2021-04-08T17:24:10.3523517+07:00
LN 102 Col 1 Ch 1 INS
Item(s) Saved

```

```

script_test.sql - DESKTOP-2VP3D1S.QLBongDa (BDU03 (54)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
File New Query Execute
QLBongDa CAULACBO
Object Explorer
Connect: DESKTOP-2VP3D1S (SQL Server 15.0.2080.9 - BDU03)
  Databases
    System Databases
    Database Snapshots
    QLBongDa
  Security
  Server Objects
  Replication
  PolyBase
  Always On High Availability
  Management
  Integration Services Catalogs
  XEvent Profiler
script_test.sql - D...BongDa (BDU03 (54))  QLVLeague.sql - DE...aster (BDU03 (75))
93
94
95 UPDATE CAULACBO Set MACLB = 'HAGL'
96 where MASAN= 'PL' and MATINH = 'GL'
97
98 --Thuc thi khong duoc--
99
100 select * from QUOCGIA
101
102 INSERT INTO TINH(MATINH, TENTINH)
103 VALUES
104 ('CT', 'Can Tho');
105
106 delete SANVD where MASAN='GD'
107

Messages
Msg 229, Level 14, State 5, Line 106
The SELECT permission was denied on the object 'SANVD', database 'QLBongDa', schema 'dbo'.
Msg 229, Level 14, State 5, Line 106
The DELETE permission was denied on the object 'SANVD', database 'QLBongDa', schema 'dbo'.
Completion time: 2021-04-08T17:24:56.7368636+07:00

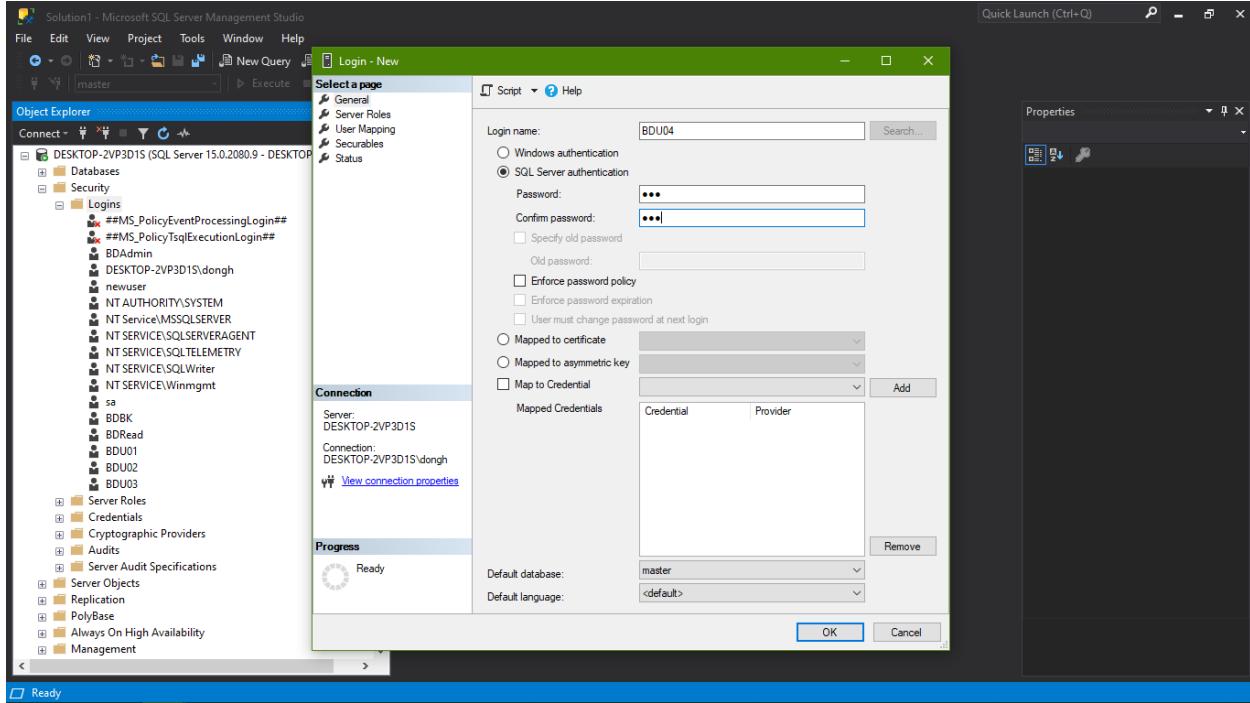
Completion time: 2021-04-08T17:24:56.7368636+07:00
LN 106 Col 1 Ch 1 INS
Item(s) Saved

```

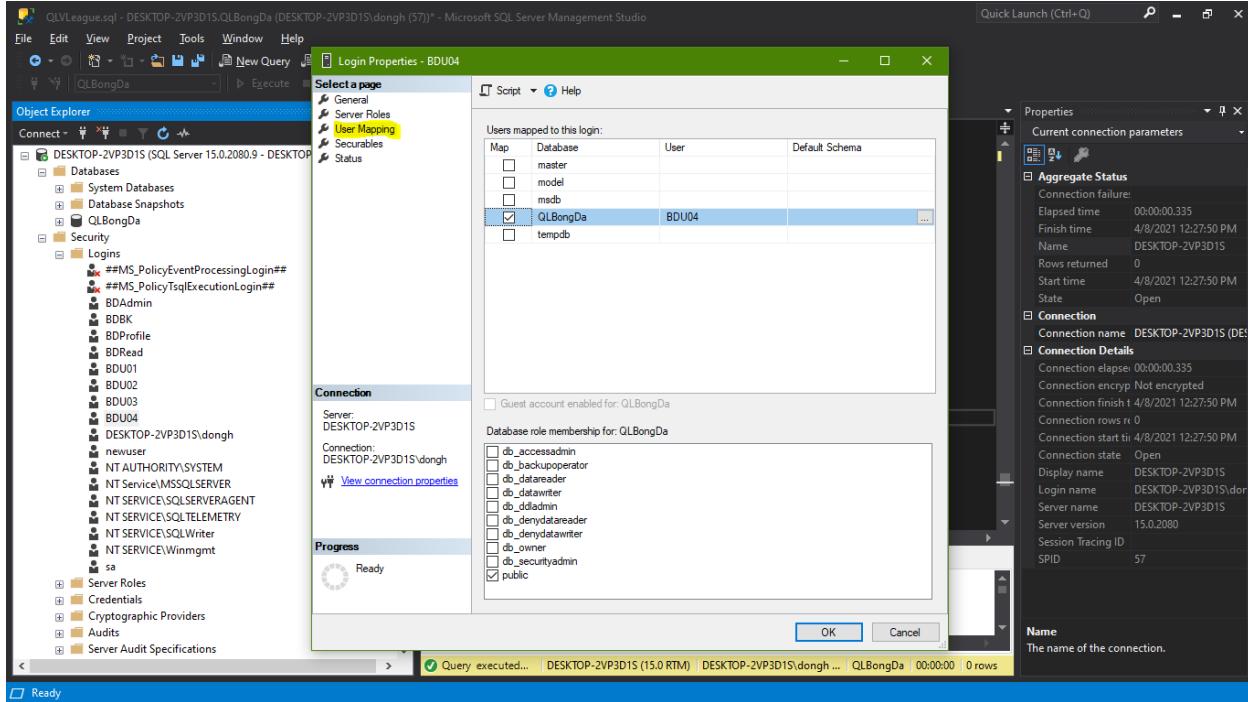
G. BDU04

1. Cài đặt

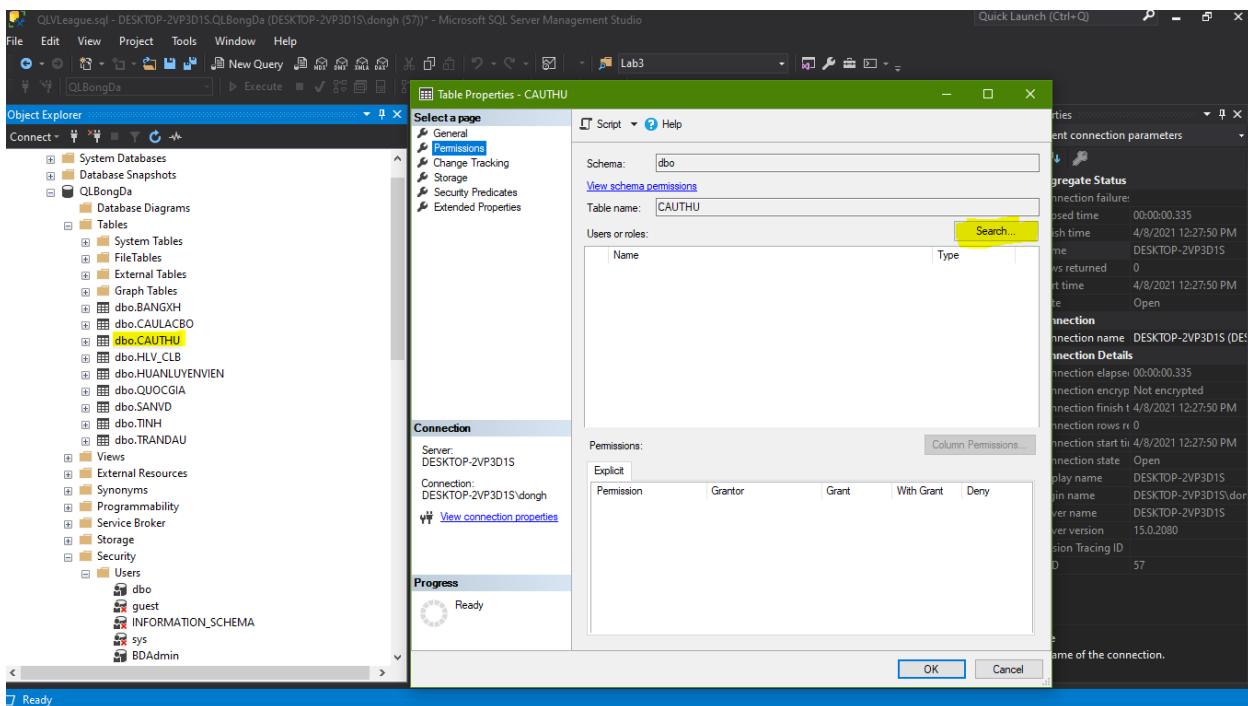
Bước 1: Tạo user mới với loại ủy quyền là **SQL Server Authentication**



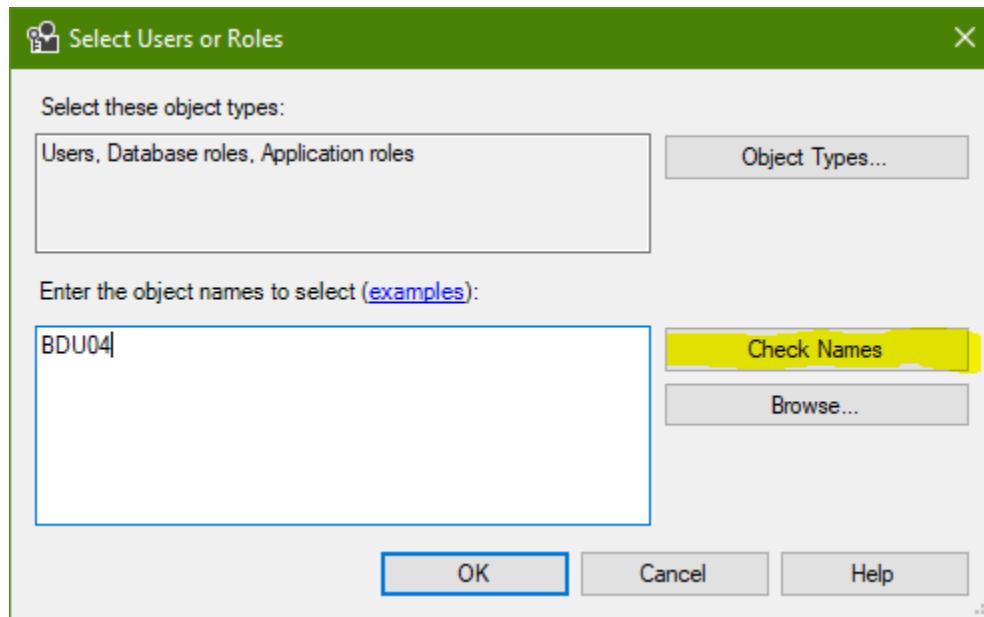
Bước 2: Ở phần Logins Properties => User Mapping map với database QLBongDa với role public



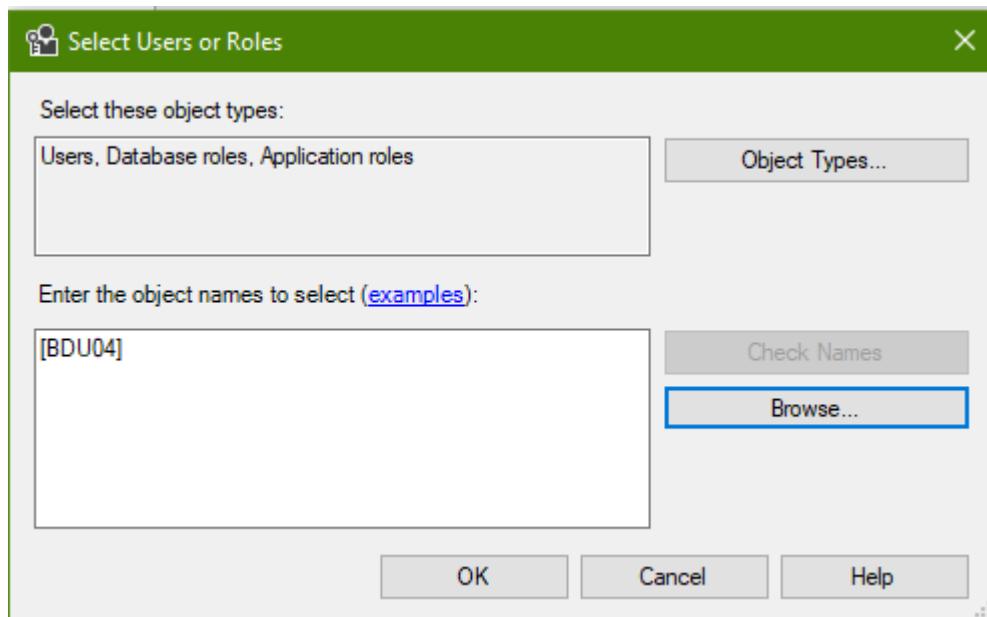
Bước 3: Ở phần Database chọn QLBongDa => Tables => dbo.CAUTHU => search



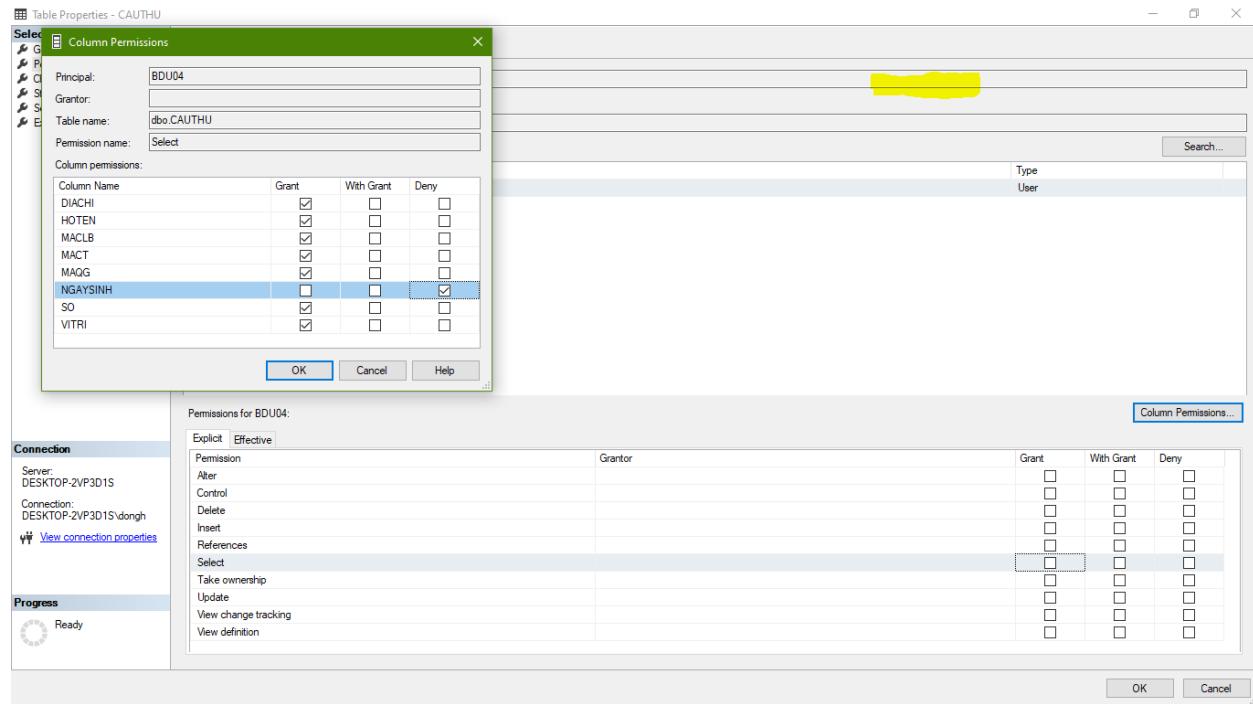
Bước 4: Nhập tên user BDU04 và chọn **Check Name**



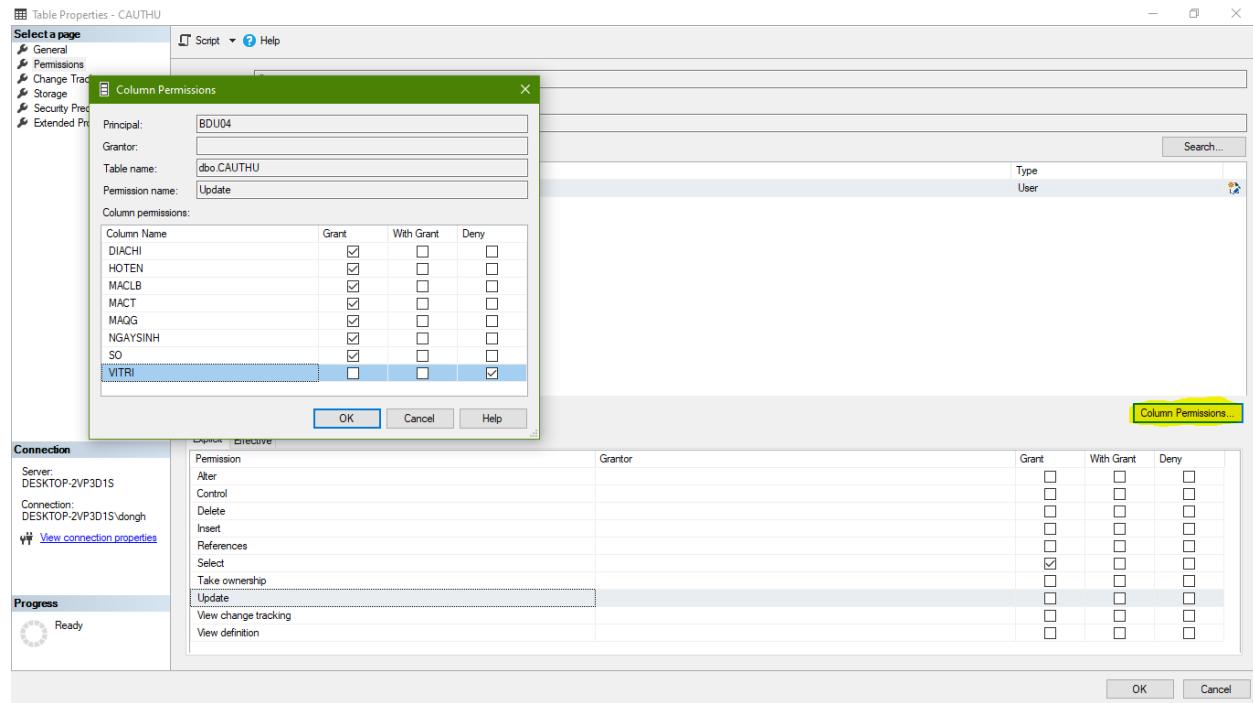
Bước 5: Tìm user **BDU04 => OK**



Bước 6: Sau đó tích chọn **Select** và chọn **Column Permission Grant** tất cả các cột (trừ cột NGAYSINH được deny)



Bước 7: Sau đó tích chọn **Update** và chọn **Column Permission Grant** tất cả các cột (trừ cột VITRI được deny)



2. Kiểm tra

```

script_test.sql - DESKTOP-2VP3D15.QLBongDa (BDU04 (54)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query Execute
QLBongDa CAULACBO
Object Explorer
Connect: DESKTOP-2VP3D15 (SQL Server 15.0.2080.9 - BDU04)
Databases Security Server Objects Replication PolyBase Always On High Availability Management Integration Services Catalogs XEvent Profiler
script_test.sql - D...BongDa (BDU04 (54)) QLVLeague.sql - DE...aster (BDU04 (53))
110 -----test BDU04-----
111 --Thực thi được
112
113 select MACT, HOTEN, VITRI, DIACHI, MACLB, MAQG, SO from CAUTHU
114
115 --Thực thi không được-
116 select CAUTHU.NGAYSINH from CAUTHU
117
118
119 UPDATE CAUTHU Set VITRI = N'Lým bánh'
120 where MACT = 01
121
122 select * from HLV_CLB
123
124 select * from TINH
110 %
Results Messages
MACT HOTEN VITRI DIACHI MACLB MAQG SO
1 1 Nguyễn Vũ Phong Tiên vé NULL BBD VN 17
2 2 Nguyễn Công Vinh Tiên đao NULL HAGL VN 9
3 4 Trần Tân Tài Tiên vé NULL BBD VN 8
4 5 Phan Hồng Sơn Thủ môn NULL HAGL VN 1
5 6 Ronaldo Tiên vé NULL SDN BRA 7
6 7 Robinho Tiên vé NULL SDN BRA 8
7 8 Vđic Hậu vé NULL HAGL ANH 3
8 9 Trần Văn Santos Thủ môn NULL BBD BRA 1
9 10 Nguyễn Trường Sơn Hậu vé NULL BBD VN 4
110 %
Query executed successfully.
DESKTOP-2VP3D15 (15.0 RTM) | BDU04 (54) | QLBongDa | 00:00:00 | 9 rows
Item(s) Saved Ln 114 Col 1 Ch 1 INS

```

```

script_test.sql - DESKTOP-2VP3D15.QLBongDa (BDU04 (54)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query Execute
QLBongDa CAULACBO
Object Explorer
Connect: DESKTOP-2VP3D15 (SQL Server 15.0.2080.9 - BDU04)
Databases Security Server Objects Replication PolyBase Always On High Availability Management Integration Services Catalogs XEvent Profiler
script_test.sql - D...BongDa (BDU04 (54)) QLVLeague.sql - DE...aster (BDU04 (53))
110 -----test BDU04-----
111 --Thực thi được
112
113 select MACT, HOTEN, VITRI, DIACHI, MACLB, MAQG, SO from CAUTHU
114
115 --Thực thi không được-
116 select CAUTHU.NGAYSINH from CAUTHU
117
118
119 UPDATE CAUTHU Set VITRI = N'Lým bánh'
120 where MACT = 01
121
122 select * from HLV_CLB
123
124 select * from TINH
110 %
Messages
Msg 230, Level 14, State 1, Line 117
The SELECT permission was denied on the column 'NGAYSINH' of the object 'CAUTHU', database 'QLBongDa', schema 'dbo'.
Completion time: 2021-04-08T17:33:28.8228788+07:00
110 %
Query completed with errors.
DESKTOP-2VP3D15 (15.0 RTM) | BDU04 (54) | QLBongDa | 00:00:00 | 0 rows
Ready Ln 117 Col 1 Ch 1 INS

```

```

script_test.sql - DESKTOP-2VP3D1S.QLBongDa (BDU04 (54)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
Execute
Object Explorer
Connect: DESKTOP-2VP3D1S (SQL Server 15.0.2080.9 - BDU04)
  Databases
  Security
  Server Objects
  Replication
  PolyBase
  Always On High Availability
  Management
  Integration Services Catalogs
  XEvent Profiler
script_test.sql - D..BongDa (BDU04 (54))  QLVLeague.sql - DE...aster (BDU04 (53))
110
111 -----test BDU04-----
112 --Thuc thi duoc
113
114 select MACT, HOTEN, VITRI, DIACHI, MACLB, MAQG, SO from CAUTHU
115
116 --Thuc thi khong duoc--
117 select CAUTHU.NGAYSINH from CAUTHU
118
119 UPDATE CAUTHU Set VITRI = N'Lum banh'
120 where MACT = 01
121
122 select * from HLV_CLB
123
124 select * from TINH
110 %
Ln 119 Col 1 Ch 1 INS
Messages
Msg 230, Level 14, State 1, Line 119
The UPDATE permission was denied on the column 'VITRI' of the object 'CAUTHU', database 'QLBongDa', schema 'dbo'.
Completion time: 2021-04-08T17:33:53.0570205+07:00
110 %
Ln 119 Col 1 Ch 1 INS
Ready

```

```

script_test.sql - DESKTOP-2VP3D1S.QLBongDa (BDU04 (54)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
Execute
Object Explorer
Connect: DESKTOP-2VP3D1S (SQL Server 15.0.2080.9 - BDU04)
  Databases
  Security
  Server Objects
  Replication
  PolyBase
  Always On High Availability
  Management
  Integration Services Catalogs
  XEvent Profiler
script_test.sql - D..BongDa (BDU04 (54))  QLVLeague.sql - DE...aster (BDU04 (53))
110
111 -----test BDU04-----
112 --Thuc thi duoc
113
114 select MACT, HOTEN, VITRI, DIACHI, MACLB, MAQG, SO from CAUTHU
115
116 --Thuc thi khong duoc--
117 select CAUTHU.NGAYSINH from CAUTHU
118
119 -UPDATE CAUTHU Set VITRI = N'Lum banh'
120 where MACT = 01
121
122 select * from HLV_CLB
123
124 select * from TINH
110 %
Ln 122 Col 1 Ch 1 INS
Messages
Msg 229, Level 14, State 5, Line 122
The SELECT permission was denied on the object 'HLV_CLB', database 'QLBongDa', schema 'dbo'.
Completion time: 2021-04-08T17:34:28.4199210+07:00
110 %
Ln 122 Col 1 Ch 1 INS
Ready

```

```

--Thuc thi duoc
112 select MACT, HOTEN, VITRI, DIACHI, MACLB, MAQG, SO from CAUTHU
113
114 --Thuc thi khong duoc-
115 select CAUTHU.NGAYSINH from CAUTHU
116
117 UPDATE CAUTHU Set VITRI = N'Lum banh'
118 where MACT = 01
119
120 select * from HLV_CLB
121
122 select * from TINH
123
124
125
126

```

Mag 229, Level 14, State 5, Line 124
The SELECT permission was denied on the object 'TINH', database 'QLBongDa', schema 'dbo'.

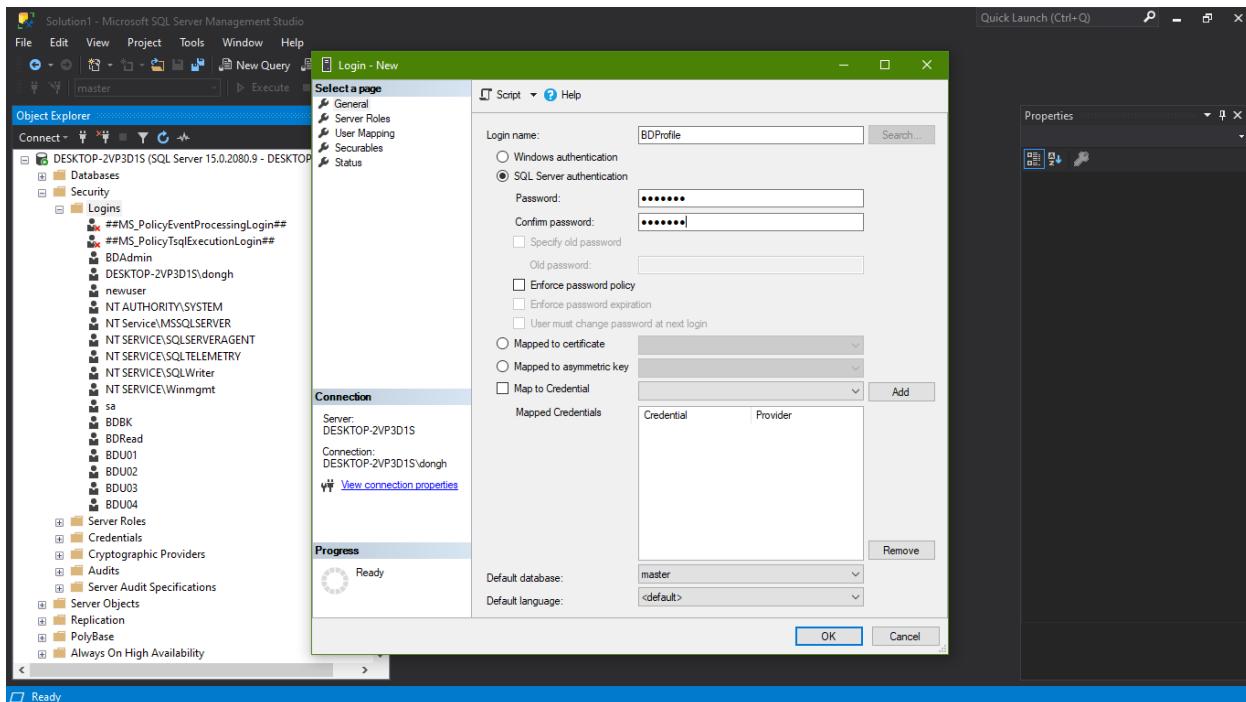
Completion time: 2021-04-08T17:34:59.7778531+07:00

Query completed with errors.

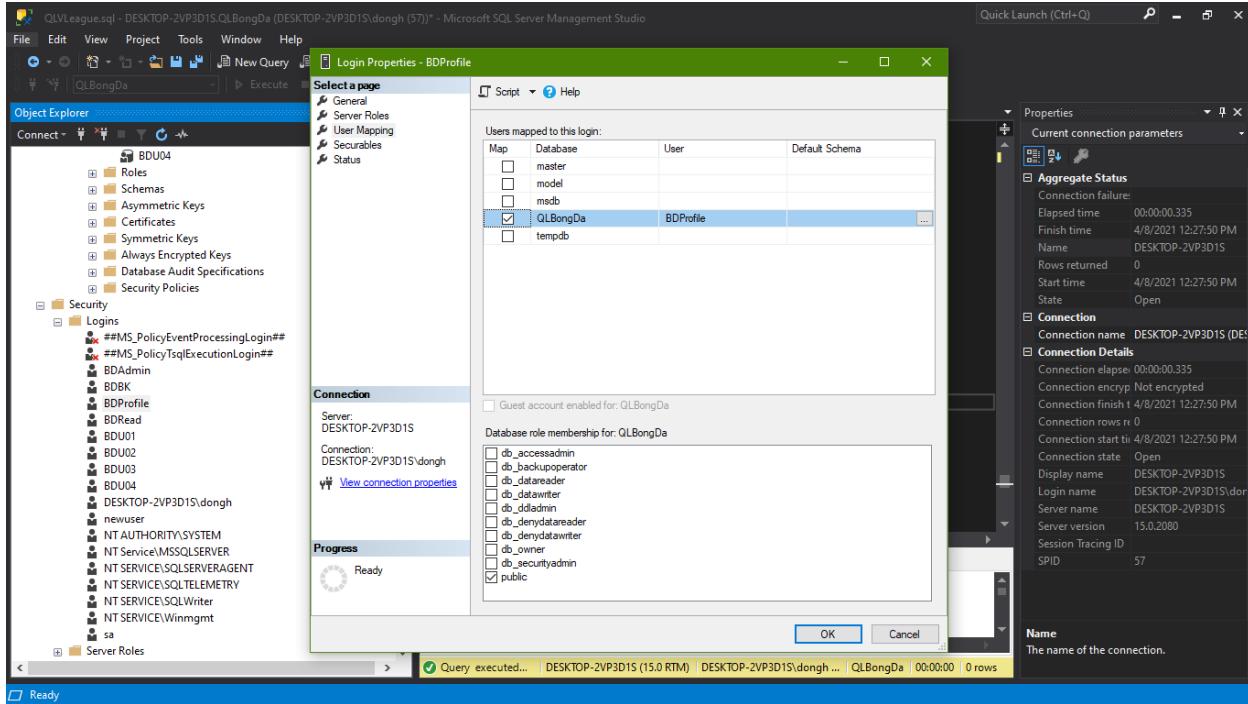
H. BDProfile

1. Cài đặt

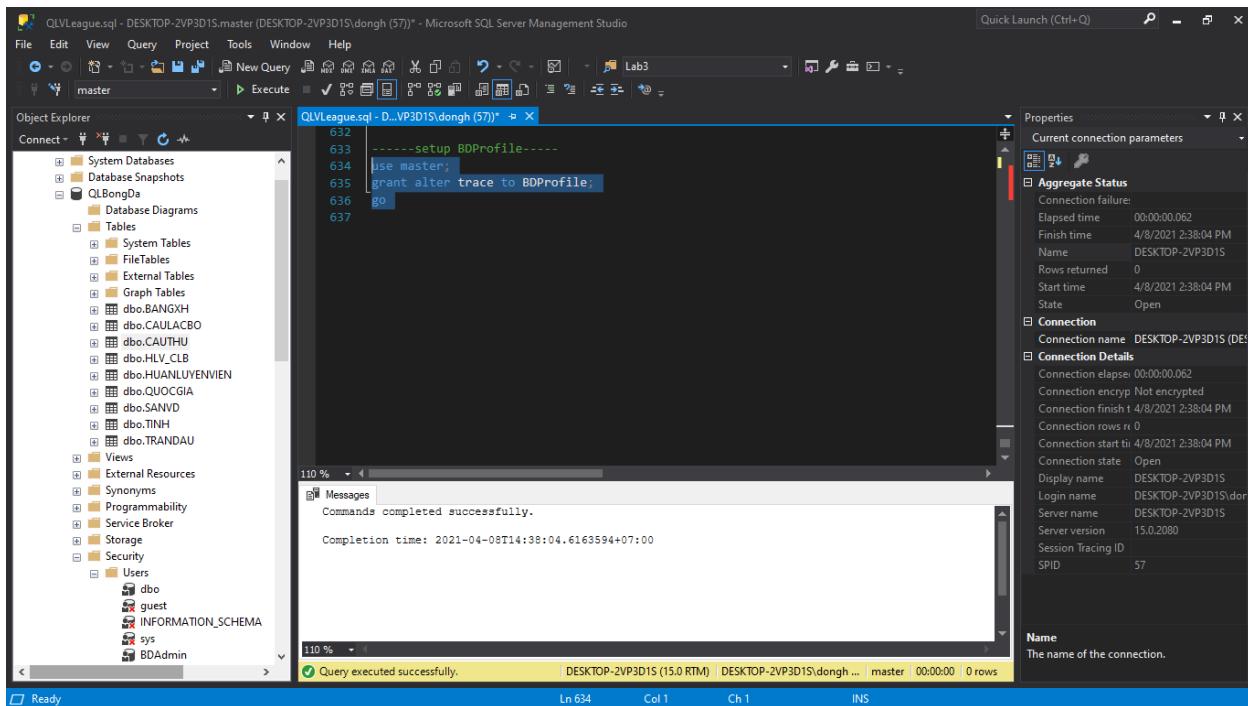
Bước 1: Tạo user mới với loại ủy quyền là SQL Server Authentication



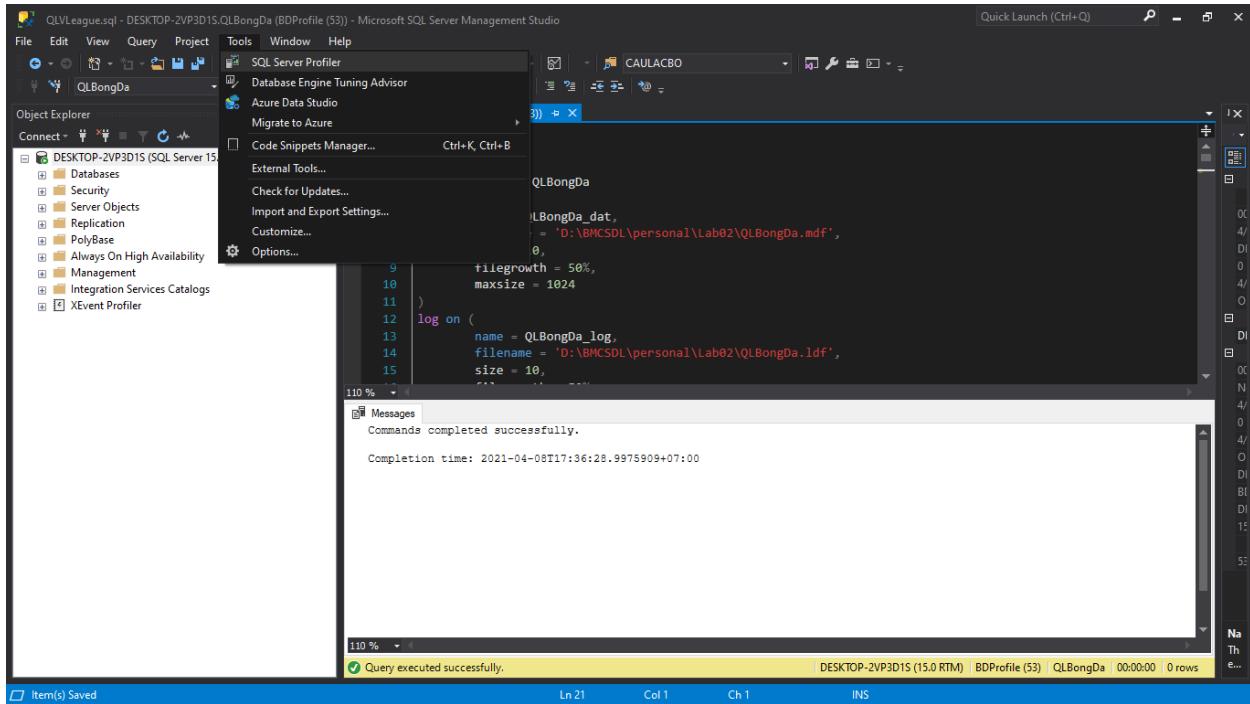
Bước 2: Ở phần Logins Properties => User Mapping map với database QLBongDa với role public



Bước 3: Chạy lệnh với mục đích grant alter trace cho user BDProfile



2. Kiểm tra



The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, a database named 'QLBongDa' is selected under 'DESKTOP-2VP3D1S (SQL Server 15)'. A context menu is open over the database, with the 'Properties...' option highlighted. The main pane displays T-SQL code for creating a database:

```

CREATE DATABASE [QLBongDa]
ON PRIMARY
    ( NAME = 'QLBongDa_dat',
      FILENAME = 'D:\BMCSDL\personal\Lab02\QLBongDa.mdf',
      SIZE = 10,
      FILEGROWTH = 50%,
      MAXSIZE = 1024
    )
    LOG ON
    (
        NAME = 'QLBongDa_log',
        FILENAME = 'D:\BMCSDL\personal\Lab02\QLBongDa.ldf',
        SIZE = 10,
        FILEGROWTH = 5MB
    );
  
```

The 'Messages' pane shows the command completed successfully with the following output:

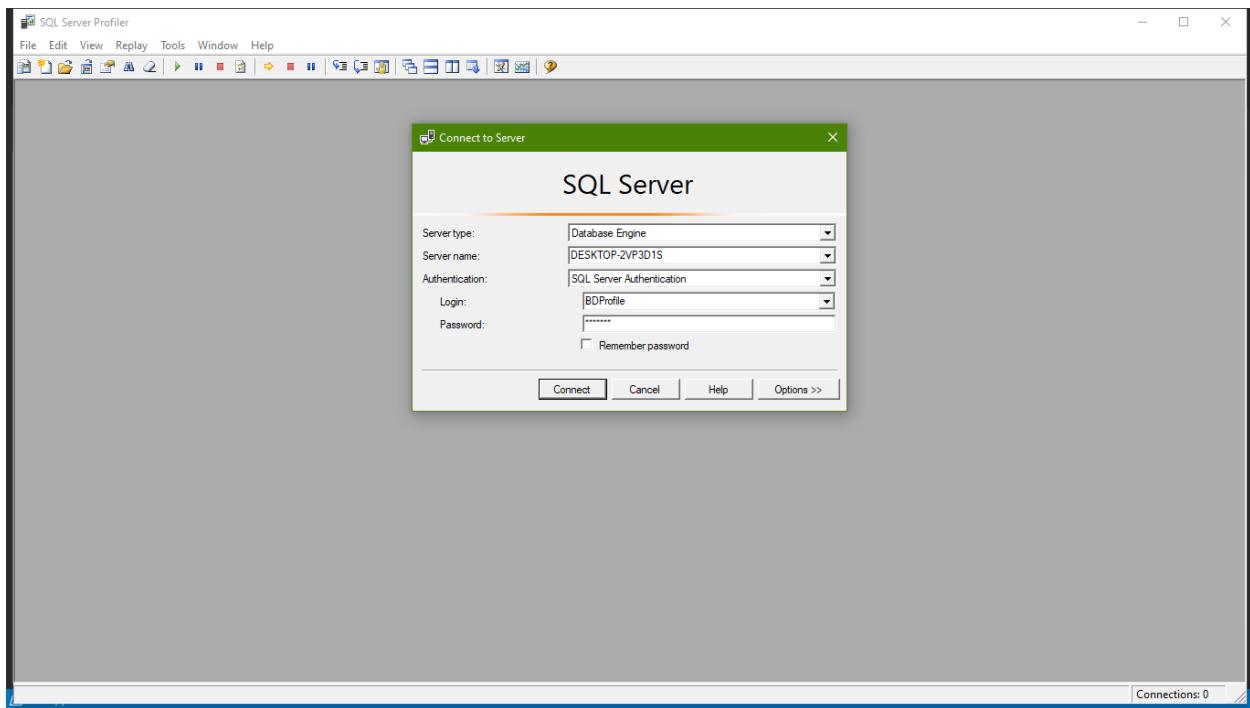
```

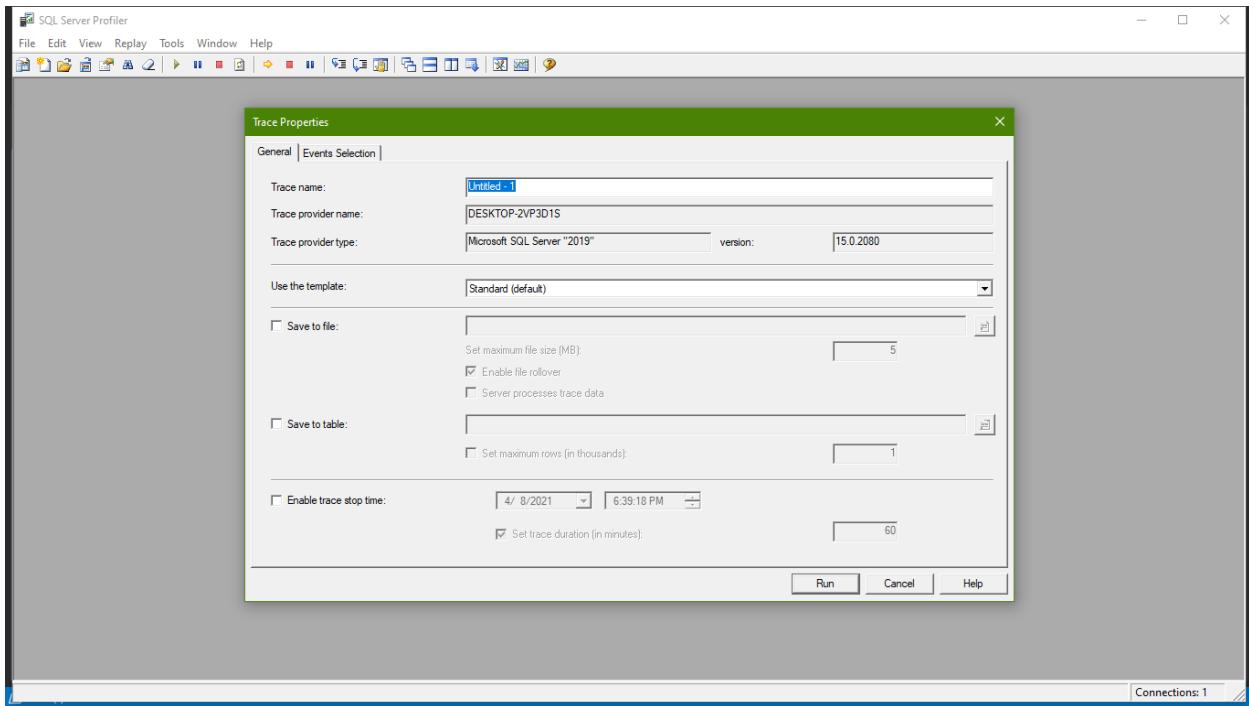
Commands completed successfully.

Completion time: 2021-04-08T17:36:28.9975909+07:00

```

The status bar at the bottom indicates 'Query executed successfully.'





The screenshot shows the main results grid of the SQL Server Profiler. The title bar indicates the session is named "Untitled - 1 (DESKTOP-2VP3D1S)". The results grid has columns: EventClass, TextData, ApplicationName, NTUserName, LoginName, CPU, Reads, Writes, Duration, and ClientProcessID. The data in the grid includes several entries for "ExistingConnection" events showing network protocol activity, and one entry for "Audit Logout". The "TextData" column shows details like "network protocol: LPC set quoted..." and "Audit Logout". The "Duration" column shows values like 100, 100, 100, etc. The "ClientProcessID" column shows values like 100, 100, 100, etc. The status bar at the bottom left says "Trace is running." and the bottom right shows "Ln 11, Col 1 Rows: 11".

EventClass	TextData	ApplicationName	NTUserName	LoginName	CPU	Reads	Writes	Duration	ClientProcessID
Trace Start									
ExistingConnection	-- network protocol: LPC set quoted... SQLServerCEIP	SQLTELE...	NT SER...						100
ExistingConnection	-- network protocol: LPC set quoted... Microsoft SQ...	BDProfile							100
ExistingConnection	-- network protocol: LPC set quoted... Microsoft SQ...	BDProfile							100
ExistingConnection	-- network protocol: LPC set quoted... Microsoft SQ...	BDProfile							100
ExistingConnection	-- network protocol: LPC set quoted... Microsoft SQ...	BDProfile							100
ExistingConnection	-- network protocol: LPC set quoted... Microsoft SQ...	BDU04							100
ExistingConnection	-- network protocol: LPC set quoted... SQLAgent - G...	SQLSERV...	NT SER...						100
ExistingConnection	-- network protocol: LPC set quoted... SQLAgent - E...	SQLSERV...	NT SER...						100
Audit Logout		Microsoft SQ...	BDU04	0	16	0	0	780024	100

II. Mã hoá Stored Procedure

Script tạo 2 procedure **SP_SEL_NO_ENCRYPT** và **SP_SEL_ENCRYPT**

```
--f)
create proc SP_SEL_NO_ENCRYPT
(
    @TenCLB NVARCHAR(100),
    @TenQG NVARCHAR(60)
)
As
Begin
    select CT.MACT, CT.HOTEN, CT.NGAYSINH, CT.DIACHI, CT.VITRI from CAUTHU as CT inner join CAULACBO on CT.MACL = CAULACBO.MACL
    inner join QUOCGIA on CT.MAQG = QUOCGIA.MAQG
    where CAULACBO.TENCLB = @TenCLB or QUOCGIA.TENQG = @TenQG
END

drop procedure SP_SEL_NO_ENCRYPT
go
--e)
create procedure SP_SEL_ENCRYPT @TenCLB NVARCHAR(100), @TenQG NVARCHAR(60)
with ENCRYPTION
As
Begin
    select CT.MACT, CT.HOTEN, CT.NGAYSINH, CT.DIACHI, CT.VITRI from dbo.CAUTHU as CT inner join dbo.CAULACBO on CT.MACL = CAULACBO.MACL
    inner join dbo.QUOCGIA on CT.MAQG = QUOCGIA.MAQG
    where CAULACBO.TENCLB like @TenCLB or QUOCGIA.TENQG like @TenQG
End
go
exec sp_helptext 'SP_SEL_NO_ENCRYPT';
execute SP_SEL_ENCRYPT 'SHB Đà Nẵng' , 'Brazil' ;
execute SP_SEL_NO_ENCRYPT 'SHB Đà Nẵng' , 'Brazil' ;
go
```

Thực thi 2 stored procedure trên với tham số truyền vào @TenCLB = “**SHB Đà Nẵng**” và @TenQG = “**Brazil**”, đồng thời dùng lệnh **sp_helptext** để xem cấu trúc của stored procedure

```
exec sp_helptext 'SP_SEL_NO_ENCRYPT';
execute SP_SEL_NO_ENCRYPT 'SHB Đà Nẵng' , 'Brazil' ;
go
```

Results

```
Text
-----
create proc SP_SEL_NO_ENCRYPT
(
    @TenCLB NVARCHAR(100),
    @TenQG NVARCHAR(60)
)
As
Begin
    select CT.MACT, CT.HOTEN, CT.NGAYSINH, CT.DIACHI, CT.VITRI from CAUTHU as CT inner join CAULACBO on CT.MACL = CAULACBO.MACL
    inner join QUOCGIA on CT.MAQG = QUOCGIA.MAQG
    where CAULACBO.TENCLB = @TenCLB or QUOCGIA.TENQG = @TenQG
END
```

MACT	HOTEN	NGAYSINH	DIACHI
6	Ronaldo	1989-12-12 00:00:00.000	NULL
7	Robinho	1989-10-12 00:00:00.000	NULL
9	Trần Văn Santos	1990-10-21 00:00:00.000	NULL

(3 rows affected)

Completion time: 2021-04-18T19:31:21.0006927+07:00

```

exec sp_helptext 'SP_SEL_ENCRYPT';
execute SP_SEL_ENCRYPT 'SHB Đà Nẵng' , 'Brazil' ;

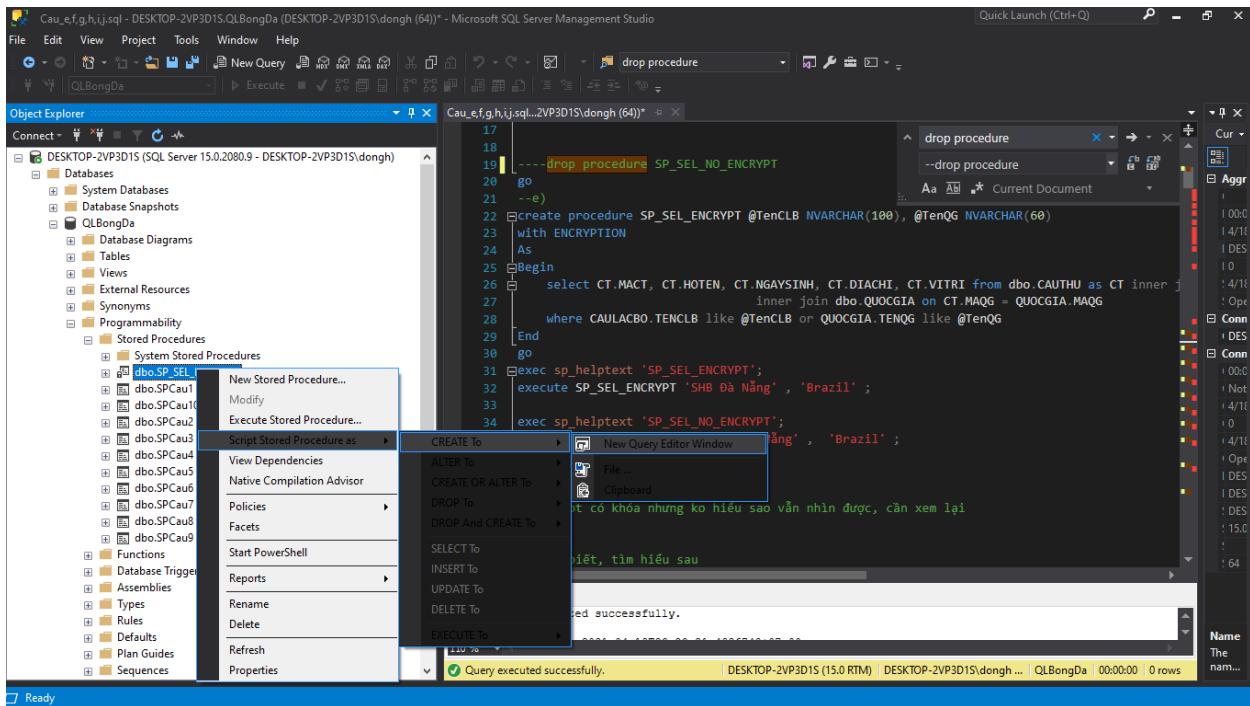
100 % ↴
Results
The text for object 'SP_SEL_ENCRYPT' is encrypted.
MACT HOTEN
-----
6 Ronaldo
7 Robinho
9 Trần Văn Santos

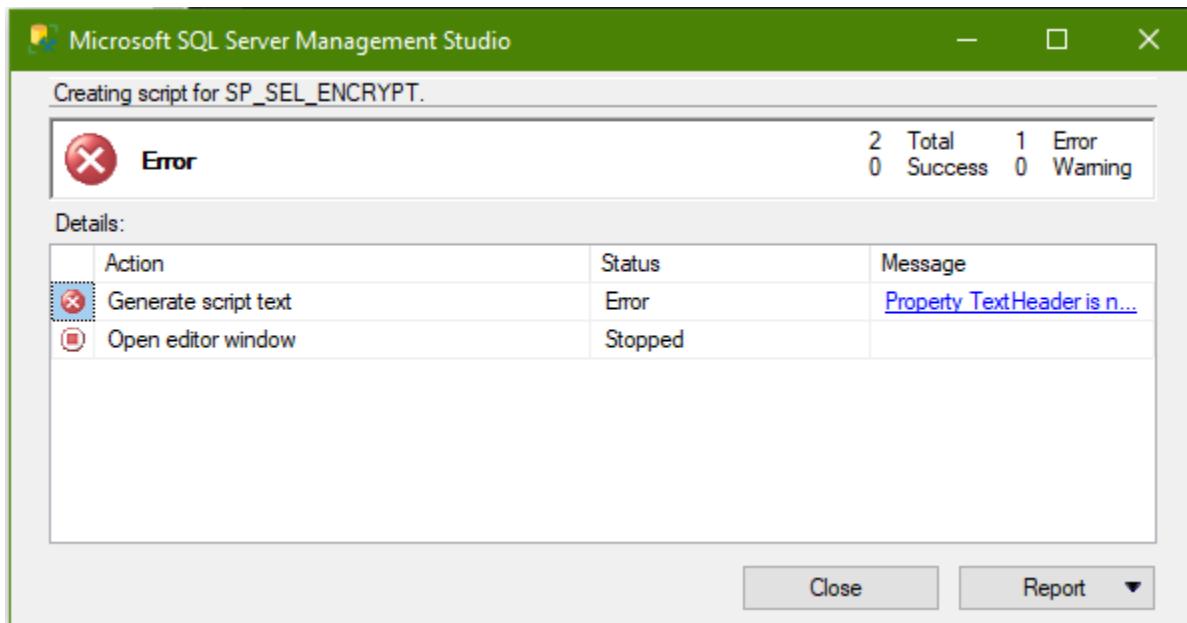
(3 rows affected)

Completion time: 2021-04-18T19:29:56.6071119+07:00

```

Ta nhận thấy cả 2 stored procedure ở bên trên đều trả ra kết quả như nhau (do đang sử dụng chế độ Windows Authentication nên có toàn quyền truy xuất). Nhưng khi sử dụng lệnh `sp_helptext` để xem đoạn code thì **SP_SEL_ENCRYPT** không xem được nội dung của stored procedure do đã được mã hóa (kể cả khi t script procedure ra vẫn bị lỗi).





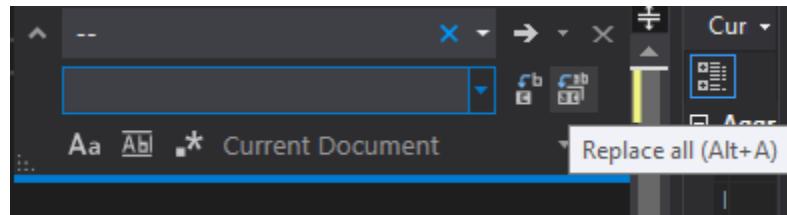
h. Mô tả cách mã hóa 100 stored procedure

* Chúng em cũng đã có tìm hiểu trên mạng có phần code bằng c# để có thể encrypt tất cả 100 stored procedure (đã tạo) cùng một lúc, nhưng do chưa hiểu code nên không trình bày ở đây.

Bước 1: Mỗi khi ta code một stored procedure (chưa execute để tạo) thì note phần **with encryption** ở cuối dòng **create** giống như trong hình dưới đây

```
--e)
create procedure SP_SEL_ENCRYPT @TenCLB NVARCHAR(100), @TenQG NVARCHAR(60)
--with ENCRYPTION
As
Begin
    select CT.MACT, CT.HOTEN, CT.NGAYSINH, CT.DIACHI, CT.VITRI from dbo.CAUTHU as CT inner join dbo.CAULACBO on CT.MACLB = CAULACBO.MACLB
        inner join dbo.QUOCGIA on CT.MAQG = QUOCGIA.MAQG
        where CAULACBO.TENCLB like @TenCLB or QUOCGIA.TENQG like @TenQG
End
```

Bước 2: Sau đó ta bấm ctrl + F tìm dấu “--” rồi replace bằng khoảng trắng. Sau đó ta thực hiện execute stored procedure (như ở câu trước) để tạo stored procedure với phần code được mã hóa



III. Tạo và phân quyền trên Views

A. Tạo View

```

go
create view vCau1 as
    select CT.MACT, CT.HOTEN, CT.NGAYSINH, CT.DIACHI, CT.VITRI
    from CAUTHU as CT inner join CAULACBO on CT.MACL = CAULACBO.MACL
        inner join QUOCGIA on CT.MAQG = QUOCGIA.MAQG
    where CAULACBO.TENCLB like 'SHB Đà Nẵng' or QUOCGIA.TENQ like 'Brazil'
    go
-----
create view vCau2 as
    select TD.MATRAN, TD.NGAYTD, SVD.TENSAN, CLB1.TENCLB as TENCLB1, CLB2.TENCLB as TENCLB2, TD.KETQUA
    from TRANDAU as TD inner join SANVD as SVD on TD.MASAN = SVD.MASAN
        inner join CAULACBO as CLB1 on TD.MACL1 = CLB1.MACL
        inner join CAULACBO as CLB2 on TD.MACL2 = CLB2.MACL
    where TD.VONG = 3 and TD.NAM = 2009
    go
-----
create view vCau3 as
    select HLV.MAHLV, HLV.TENHLV, HLV.NGAYSINH, HLV.DIACHI, HLV_CLB.VAITRO, CLB.TENCLB
    from HLV_CLB inner join HUANLUYENVIE as HLV on HLV.MAHLV = HLV_CLB.MAHLV
        inner join QUOCGIA as QG on HLV.MAQG = QG.MAQG
        inner join CAULACBO as CLB on HLV_CLB.MACL = CLB.MACL
    where QG.TENQ like N'Việt Nam'
    go
create view vCau4 as
    select CLB.MACL, CLB.TENCLB, SVD.TENSAN, SVD.DIACHI, DEM.SOLUONG
    from CAULACBO as CLB inner join SANVD as SVD on CLB.MASAN = SVD.MASAN
        inner join (select count(CAUTHU.MACT) as SOLUONG, CAULACBO.MACL
                    from CAUTHU inner join CAULACBO on CAUTHU.MACL = CAULACBO.MACL
                        inner join QUOCGIA on CAUTHU.MAQG = QUOCGIA.MAQG
                    where QUOCGIA.TENQ <> N'Việt Nam'
                    group by CAULACBO.MACL
                    having count(CAUTHU.MACT) > 2) as DEM on DEM.MACL = CLB.MACL
    go
create view vCau5 as
    select TINH.TENTINH, DEM.SOLUONG
    from CAULACBO as CLB inner join TINH on CLB.MATINH = TINH.MATINH
        inner join (select count(CAUTHU.MACT) as SOLUONG, CAULACBO.MACL
                    from CAUTHU inner join CAULACBO on CAUTHU.MACL = CAULACBO.MACL
                    where CAUTHU.VITRI like N'Tiền đạo'
                    group by CAULACBO.MACL) as DEM on DEM.MACL = CLB.MACL
    go
create view vCau6 as
    select TOP(1) CLB.TENCLB, TINH.TENTINH
    from BANGXH as BXH inner join CAULACBO as CLB on CLB.MACL = BXH.MACL
        inner join TINH on CLB.MATINH = TINH.MATINH
    where BXH.VONG = 3 and BXH.NAM = 2009
    go

```

```
create view vCau7 as
select HLV.TENHLV
from HLV_CLB inner join HUANLUYENVIEN as HLV on HLV_CLB.MAHLV = HLV.MAHLV
inner join CAULACBO as CLB on HLV_CLB.MACLB = CLB.MACLB
where HLV.DIENTHOAI is null and HLV_CLB.VAITRO is not null
---
go
create view vCau8 as
select HLV.TENHLV
from HUANLUYENVIEN as HLV inner join QUOCGIA as QG on HLV.MAQG = QG.MAQG
where QG.TENQG <> N'Việt Nam'
except
select HLV.TENHLV
from HLV_CLB inner join HUANLUYENVIEN as HLV on HLV_CLB.MAHLV = HLV.MAHLV
inner join CAULACBO as CLB on HLV_CLB.MACLB = CLB.MACLB
go
create view vCau9 as
select TD.NGAYTD, SVD.TENSAN, CLB1.TENCLB as TENCLB1, CLB2.TENCLB as TENCLB2, TD.KETQUA
from TRANDAU as TD inner join SANVD as SVD on TD.MASAN = SVD.MASAN
inner join CAULACBO as CLB1 on TD.MACLB1 = CLB1.MACLB
inner join CAULACBO as CLB2 on TD.MACLB2 = CLB2.MACLB
inner join (select top(1) BANGXH.MACLB, BANGXH.VONG, BANGXH.NAM
from BANGXH
where BANGXH.VONG = 3 and BANGXH.NAM = 2009
order by BANGXH.DIEM desc) as BXH on BXH.NAM >= TD.NAM and BXH.VONG >= TD.VONG and BXH.MACLB = TD.MACLB1
union
select TD.NGAYTD, SVD.TENSAN, CLB1.TENCLB as TENCLB1, CLB2.TENCLB as TENCLB2, TD.KETQUA
from TRANDAU as TD inner join SANVD as SVD on TD.MASAN = SVD.MASAN
inner join CAULACBO as CLB1 on TD.MACLB1 = CLB1.MACLB
inner join CAULACBO as CLB2 on TD.MACLB2 = CLB2.MACLB
inner join (select top(1) BANGXH.MACLB, BANGXH.VONG, BANGXH.NAM
from BANGXH
where BANGXH.VONG = 3 and BANGXH.NAM = 2009
order by BANGXH.DIEM desc) as BXH on BXH.NAM >= TD.NAM and BXH.VONG >= TD.VONG and BXH.MACLB = TD.MACLB2
```

B. Phân quyền cho các user truy xuất view

```
----grant view permission----
use QLBongDa
--BDRead--
grant select,view definition to BDRead
--BDU01
grant select,view definition on vCau5 to BDU01
grant select,view definition on vCau6 to BDU01
grant select,view definition on vCau7 to BDU01
grant select,view definition on vCau8 to BDU01
grant select,view definition on vCau9 to BDU01
grant select,view definition on vCau10 to BDU01

--BDU03
grant select,view definition on vCau1 to BDU03
grant select,view definition on vCau2 to BDU03
grant select,view definition on vCau3 to BDU03
grant select,view definition on vCau4 to BDU03

--BDU04
grant select,view definition on vCau1 to BDU04
grant select,view definition on vCau2 to BDU04
grant select,view definition on vCau3 to BDU04
grant select,view definition on vCau4 to BDU04
```

C. Các lệnh test và kết quả

```

--Test view--
--BDRead--
SELECT * FROM vCau1
SELECT * FROM vCau5
--BDU01--
SELECT * FROM vCau2
SELECT * FROM vCau10
--BDU03--
SELECT * FROM vCau1
SELECT * FROM vCau2
SELECT * FROM vCau3
SELECT * FROM vCau4
--BDU04--
SELECT * FROM vCau1
SELECT * FROM vCau2
SELECT * FROM vCau3
SELECT * FROM vCau4

```

--Test view--
--BDRead--
SELECT * FROM vCau1
SELECT * FROM vCau5

	MACT	HOTEN	NGAYSINH	DIACHI	VITRI
1	6	Ronaldo	1989-12-12 00:00:00.000	NULL	Tiền vệ
2	7	Robinho	1989-10-12 00:00:00.000	NULL	Tiền vệ
3	9	Trần Văn Santos	1990-10-21 00:00:00.000	NULL	Thủ môn

	TENTINH	SOLUONG
1	Gia Lai	1

--BDU01--
SELECT * FROM vCau2
SELECT * FROM vCau10

	MATRAN	NGAYTD	TENSAN	TENCLB1	TENCLB2	KETQUA
1	5	2009-03-01 00:00:00.000	Tuy Hòa	THÉP PHÚ YÊN	GẠCH ĐÔNG TÂM LONG AN	0-2
2	6	2009-03-01 00:00:00.000	Nha Trang	KHATOCO KHÁNH HÒA	BECAMEX BINH DƯƠNG	0-1

	NGAYTD	TENSAN	TENCLB1	TENCLB2	KETQUA
1	2009-02-07 00:00:00.000	Gò Đáu	BECAMEX BINH DƯƠNG	SHB ĐÀ NẴNG	3-0
2	2009-02-16 00:00:00.000	Chí Lăng	SHB ĐÀ NẴNG	KHATOCO KHÁNH HÒA	2-2

```
--BDU01--
SELECT * FROM vCau2
SELECT * FROM vCau10
--BDU03--
SELECT * FROM vCau1
SELECT * FROM vCau2
Completion time: 2021-04-18T13:37:23.8024814+07:00
```

Msg 229, Level 14, State 5, Line 181
The SELECT permission was denied on the object 'vCau2', database 'QLBongDa', schema 'dbo'.

```
--BDU01--
SELECT * FROM vCau2
SELECT * FROM vCau10
--BDU03--
SELECT * FROM vCau1
SELECT * FROM vCau2
```

	NGAYTD	TENSAN	TENCLB1	TENCLB2	KETQUA
1	2009-02-07 00:00:00.000	Gó Đấu	BECAMEX BÌNH DƯỜNG	SHB ĐÀ NẴNG	3-0
2	2009-02-16 00:00:00.000	Chi Lăng	SHB ĐÀ NẴNG	KHATOCO KHÁNH HÒA	2-2

```
--BDU03--
SELECT * FROM vCau1
SELECT * FROM vCau2
SELECT * FROM vCau3
SELECT * FROM vCau4
```

	MACT	HOTEN	NGAYSINH	DIACHI	VITRI
1	6	Ronaldo	1989-12-12 00:00:00.000	NULL	Tiền vệ
2	7	Robinho	1989-10-12 00:00:00.000	NULL	Tiền vệ
3	9	Trân Văn Santos	1990-10-21 00:00:00.000	NULL	Thủ môn

	MATRAN	NGAYTD	TENSAN	TENCLB1	TENCLB2	KETQUA
1	5	2009-03-01 00:00:00.000	Tuy Hòa	THÉP PHÚ YÊN	GẠCH ĐÔNG TÂM LONG AN	0-2
2	6	2009-03-01 00:00:00.000	Nha Trang	KHATOCO KHÁNH HÒA	BECAMEX BÌNH DƯỜNG	0-1

	MAHLV	TENHLV	NGAYSINH	DIACHI	VAITRO	TENCLB
1	HLV02	Lê Huỳnh Đức	1972-05-20 00:00:00.000	NULL	HLV Chính	SHB ĐÀ NẴNG
2	HLV04	Hoàng Anh Tuấn	1970-06-10 00:00:00.000	NULL	HLV Chính	KHATOCO KHÁNH HÒA
3	HLV05	Trân Công Minh	1973-07-07 00:00:00.000	NULL	HLV Chính	GẠCH ĐÔNG TÂM LO...
4	HLV06	Trân Văn Phúc	1965-02-03 00:00:00.000	NULL	HLV thủ ...	BECAMEX BÌNH DƯỜ...

	MACLB	TENCLB	TENSAN	DIACHI	SOLUONG
--	-------	--------	--------	--------	---------

```
--BDU04--
SELECT * FROM vCau1
SELECT * FROM vCau2
SELECT * FROM vCau3
SELECT * FROM vCau4
```

Results

	MACT	HOTEN	NGAYSINH	DIACHI	VITRI
1	6	Ronaldo	1989-12-12 00:00:00.000	NULL	Tiền vệ
2	7	Robinho	1989-10-12 00:00:00.000	NULL	Tiền vệ
3	9	Trần Văn Santos	1990-10-21 00:00:00.000	NULL	Thủ môn

	MATRAN	NGAYTD	TENSAN	TENCLB1	TENCLB2	KETQUA
1	5	2009-03-01 00:00:00.000	Tuy Hòa	THÉP PHÚ YÊN	GẠCH ĐÔNG TÂM LONG AN	0-2
2	6	2009-03-01 00:00:00.000	Nha Trang	KHATOCO KHÁNH HÒA	BECAMEX BÌNH DƯƠNG	0-1

	MAHLV	TENHLV	NGAYSINH	DIACHI	VAITRO	TENCLB
1	HLV02	Lê Huỳnh Đức	1972-05-20 00:00:00.000	NULL	HLV Chính	SHB ĐÀ NẴNG
2	HLV04	Hoàng Anh Tuấn	1970-06-10 00:00:00.000	NULL	HLV Chính	KHATOCO KHÁNH HÒA
3	HLV05	Trần Công Minh	1973-07-07 00:00:00.000	NULL	HLV Chính	GẠCH ĐÔNG TÂM LONG AN
4	HLV06	Trần Văn Phúc	1965-02-03 00:00:00.000	NULL	HLV thủ môn	BECAMEX BÌNH DƯƠNG

MACLB	TENCLB	TENSAN	DIACHI	SOLUONG
-------	--------	--------	--------	---------

STT	Tên User	Thực thi câu select	Giải thích kết quả
1	BDRead	SELECT * FROM vCau1 SELECT * FROM vCau5	Thực thi được do user được phép truy xuất tất cả các view
2	BDU01	SELECT * FROM vCau2 SELECT * FROM vCau10	Thực thi được vCau2 nhưng không được vCau10 do user chỉ được phân quyền truy xuất từ vCau5=>vCau10
3	BDU03	SELECT * FROM vCau1 SELECT * FROM vCau2 SELECT * FROM vCau3 SELECT * FROM vCau4	Thực thi được các view do được phân quyền truy xuất từ vCau1=>vCau4
4	BDU04	SELECT * FROM vCau1 SELECT * FROM vCau2 SELECT * FROM vCau3 SELECT * FROM vCau4	Thực thi được các view do được phân quyền truy xuất từ vCau1 => vCau4

IV. Tạo và phân quyền trên Stored Procedure

A. Tạo stored procedure

```
--SPCau1
create proc SPCau1
(
    @TenCLB NVARCHAR(100),
    @TenQG NVARCHAR(50)
)
AS
Begin
    select CT.MACT, CT.HOTEN, CT.NGAYSINH, CT.DIACHI, CT.VITRI
    from CAUTHU as CT inner join CAULACBO on CT.MACL = CAULACBO.MACL
        inner join QUOCGIA on CT.MAQG = QUOCGIA.MAQG
        where CAULACBO.TENCLB like @TenCLB or QUOCGIA.TENQG like @TenQG
END

drop procedure SPCau1
go

--SPCau2
create proc SPCau2
(
    @Vong int,
    @Nam int
)
AS
Begin
    select TD.MATRAN, TD.NGAYTD, SVD.TENSAN, CLB1.TENCLB as TENCLB1, CLB2.TENCLB as TENCLB2, TD.KETQUA
    from TRANDAU as TD inner join SANVD as SVD on TD.MASAN = SVD.MASAN
        inner join CAULACBO as CLB1 on TD.MACL1 = CLB1.MACL
        inner join CAULACBO as CLB2 on TD.MACL2 = CLB2.MACL
    where TD.VONG = @Vong and TD.NAM = @Nam
END

drop procedure SPCau2
go
```

```
--SPCau3
:create proc SPCau3
(
    @TenQG NVARCHAR(60)
)
As
Begin
    select HLV.MAHLV, HLV.TENHLV, HLV.NGAYSINH, HLV.DIACHI, HLV_CLB.VAITRO, CLB.TENCLB
    from HLV_CLB inner join HUANLUYENVIEN as HLV on HLV.MAHLV = HLV_CLB.MAHLV
        inner join QUOCGIA as QG on HLV.MAQG = QG.MAQG
        inner join CAULACBO as CLB on HLV_CLB.MACLB = CLB.MACLB
    where QG.TENQG like @TenQG
END
drop procedure SPCau3
go

--SPCau4
:create proc SPCau4
(
    @TenQG NVARCHAR(60)
)
As
Begin
    select CLB.MACLB, CLB.TENCLB, SVD.TENSAN, SVD.DIACHI, DEM.SOLUONG
    from CAULACBO as CLB inner join SANVD as SVD on CLB.MASAN = SVD.MASAN
        inner join (select count(CAUTHU.MACT) as SOLUONG, CAULACBO.MACLB
                    from CAUTHU inner join CAULACBO on CAUTHU.MACLB = CAULACBO.MACLB
                    inner join QUOCGIA on CAUTHU.MAQG = QUOCGIA.MAQG
                    where QUOCGIA.TENQG <> @TenQG
                    group by CAULACBO.MACLB
                    having count(CAUTHU.MACT) > 2) as DEM on DEM.MACLB = CLB.MACLB
END
drop procedure SPCau4
go
```

```
--SPCau5
create proc SPCau5
(
    @ViTri NVARCHAR(60)
)
As
Begin
select TINH.TENTINH, DEM.SOLUONG
from CAULACBO as CLB inner join TINH on CLB.MATINH = TINH.MATINH
inner join (select count(CAUTHU.MACT) as SOLUONG, CAULACBO.MACLB
            from CAUTHU inner join CAULACBO on CAUTHU.MACLB = CAULACBO.MACLB
            where CAUTHU.VITRI like @ViTri
            group by CAULACBO.MACLB) as DEM on DEM.MACLB = CLB.MACLB
END
drop procedure SPCau5
go

--SPCau6
create proc SPCau6
(
    @Vong int,
    @Nam int
)
As
Begin
select TOP(1) CLB.TENCLB, TINH.TENTINH
from BANGXH as BXH inner join CAULACBO as CLB on CLB.MACLB = BXH.MACLB
inner join TINH on CLB.MATINH = TINH.MATINH
where BXH.VONG = @Vong and BXH.NAM = @Nam
END
drop procedure SPCau6
go
```

```
--SPCau7
create proc SPCau7
(
    @DienThoai NVARCHAR(20),
    @VaiTro NVARCHAR(100)
)
AS
Begin
select HLV.TENHLV
from HLV_CLB inner join HUANLUYENVIEN as HLV on HLV_CLB.MAHLV = HLV.MAHLV
        inner join CAULACBO as CLB on HLV_CLB.MACLBC = CLB.MACLBC
where HLV.DIENTHOAI = @DienThoai and HLV_CLB.VAITRO = @VaiTro
END

drop procedure SPCau7
go

--SPCau8
create proc SPCau8
(
    @QuocGia NVARCHAR(100)
)
AS
Begin
select HLV.TENHLV
from HUANLUYENVIEN as HLV inner join QUOCGIA as QG on HLV.MAQG = QG.MAQG
where QG.TENQG <> @QuocGia
except
select HLV.TENHLV
from HLV_CLB inner join HUANLUYENVIEN as HLV on HLV_CLB.MAHLV = HLV.MAHLV
        inner join CAULACBO as CLB on HLV_CLB.MACLBC = CLB.MACLBC
END

drop procedure SPCau8
go
```

```
--SPCau9
create proc SPCau9
(
    @Vong int,
    @Nam int
)
As
Begin
select TD.NGAYTD, SVD.TENSAN, CLB1.TENCLB as TENCLB1, CLB2.TENCLB as TENCLB2, TD.KETQUA
from TRANDAU as TD inner join SANVD as SVD on TD.MASAN = SVD.MASAN
inner join CAULACBO as CLB1 on TD.MACLB1 = CLB1.MACLB
inner join CAULACBO as CLB2 on TD.MACLB2 = CLB2.MACLB
inner join (select top(1) BANGXH.MACLB, BANGXH.VONG, BANGXH.NAM
            from BANGXH
            where BANGXH.VONG = @Vong and BANGXH.NAM = @Nam
            order by BANGXH.DIEM desc) as BXH on BXH.NAM >= TD.NAM and BXH.VONG >= TD.VONG and BXH.MACLB = TD.MACLB1
union
select TD.NGAYTD, SVD.TENSAN, CLB1.TENCLB as TENCLB1, CLB2.TENCLB as TENCLB2, TD.KETQUA
from TRANDAU as TD inner join SANVD as SVD on TD.MASAN = SVD.MASAN
inner join CAULACBO as CLB1 on TD.MACLB1 = CLB1.MACLB
inner join CAULACBO as CLB2 on TD.MACLB2 = CLB2.MACLB
inner join (select top(1) BANGXH.MACLB, BANGXH.VONG, BANGXH.NAM
            from BANGXH
            where BANGXH.VONG = @Vong and BANGXH.NAM = @Nam
            order by BANGXH.DIEM desc) as BXH on BXH.NAM >= TD.NAM and BXH.VONG >= TD.VONG and BXH.MACLB = TD.MACLB2
END
drop procedure SPCau9
go
```

```
--SPCau10
create proc SPCau10
(
    @Vong int,
    @Nam int
)
As
Begin
select TD.NGAYTD, SVD.TENSAN, CLB1.TENCLB as TENCLB1, CLB2.TENCLB as TENCLB2, TD.KETQUA
from TRANDAU as TD inner join SANVD as SVD on TD.MASAN = SVD.MASAN
inner join CAULACBO as CLB1 on TD.MACLB1 = CLB1.MACLB
inner join CAULACBO as CLB2 on TD.MACLB2 = CLB2.MACLB
inner join (select top(1) BANGXH.MACLB, BANGXH.VONG, BANGXH.NAM
            from BANGXH
            where BANGXH.VONG = @Vong and BANGXH.NAM = @Nam
            order by BANGXH.DIEM asc) as BXH on BXH.NAM >= TD.NAM and BXH.VONG >= TD.VONG and BXH.MACLB = TD.MACLB1
union
select TD.NGAYTD, SVD.TENSAN, CLB1.TENCLB as TENCLB1, CLB2.TENCLB as TENCLB2, TD.KETQUA
from TRANDAU as TD inner join SANVD as SVD on TD.MASAN = SVD.MASAN
inner join CAULACBO as CLB1 on TD.MACLB1 = CLB1.MACLB
inner join CAULACBO as CLB2 on TD.MACLB2 = CLB2.MACLB
inner join (select top(1) BANGXH.MACLB, BANGXH.VONG, BANGXH.NAM
            from BANGXH
            where BANGXH.VONG = @Vong and BANGXH.NAM = @Nam
            order by BANGXH.DIEM asc) as BXH on BXH.NAM >= TD.NAM and BXH.VONG >= TD.VONG and BXH.MACLB = TD.MACLB2
END
drop procedure SPCau10
go
```

B. Phân quyền user trên các stored procedure

```
use QLBongDa
--BDRead--
grant execute to BDRead

--BDU01

grant execute on object::SPCau5 to BDU01
grant execute on object::SPCau6 to BDU01
grant execute on object::SPCau7 to BDU01
grant execute on object::SPCau8 to BDU01
grant execute on object::SPCau9 to BDU01
grant execute on object::SPCau10 to BDU01

--BDU03
grant execute on object::SPCau1 to BDU03
grant execute on object::SPCau2 to BDU03
grant execute on object::SPCau3 to BDU03
grant execute on object::SPCau4 to BDU03

--BDU04
grant execute on object::SPCau1 to BDU04
grant execute on object::SPCau2 to BDU04
grant execute on object::SPCau3 to BDU04
grant execute on object::SPCau4 to BDU04
```

C. Các lệnh test và kết quả

```
--BDRead--
exec SPCau1 N'SHB Đà Nẵng', N'Brazil'
exec SPCau9 3, 2009
```

110 %

	MACT	HOTEN	NGAYSINH	DIACHI	VITRI
1	6	Ronaldo	1989-12-12 00:00:00.000	NULL	Tiền vệ
2	7	Robinho	1989-10-12 00:00:00.000	NULL	Tiền vệ
3	9	Trần Văn Santos	1990-10-21 00:00:00.000	NULL	Thủ môn

	NGAYTD	TENSAN	TENCLB1	TENCLB2	KETQUA
1	2009-02-07 00:00:00.000	Gò Đậu	BECAMEX BÌNH DƯƠNG	SHB ĐÀ NẴNG	3-0
2	2009-02-16 00:00:00.000	Tuy Hòa	THÉP PHÚ YÊN	BECAMEX BÌNH DƯƠNG	5-0
3	2009-03-01 00:00:00.000	Nha Trang	KHATOCO KHÁNH HÒA	BECAMEX BÌNH DƯƠNG	0-1

```
--BDU01--
exec SPCau3 N'Việt Nam'
exec SPCau10 3, 2009
--BDU03--
exec SPCau1 N'SHB Đà Nẵng', N'Brazil'
exec SPCau10 3, 2009
exec SPCau3 N'Việt Nam'
```

110 %

	NGAYTD	TENSAN	TENCLB1	TENCLB2	KETQUA
1	2009-02-07 00:00:00.000	Gò Đậu	BECAMEX BÌNH DƯƠNG	SHB ĐÀ NẴNG	3-0
2	2009-02-16 00:00:00.000	Chi Lăng	SHB ĐÀ NẴNG	KHATOCO KHÁNH HÒA	2-2

```
--BDU01--
exec SPCau3 N'Việt Nam'
exec SPCau10 3, 2009
--BDU03--
exec SPCau1 N'SHB Đà Nẵng', N'Brazil'
exec SPCau10 3, 2009
exec SPCau3 N'Việt Nam'
```

110 %

Messages

```
Msg 229, Level 14, State 5, Procedure SPCau3, Line 1 [Batch Start Line 431]
The EXECUTE permission was denied on the object 'SPCau3', database 'QLBongDa', schema 'dbo'.
```

Completion time: 2021-04-18T15:03:56.7228227+07:00

```
--BDU03--
exec SPCau1 N'SHB Đà Nẵng', N'Brazil'
exec SPCau3 N'Việt Nam'
exec SPCau4 N'Việt Nam'
exec SPCau10 3, 2009
--BDU04--
exec SPCau1 N'SHB Đà Nẵng', N'Brazil'
exec SPCau10 3, 2009
exec SPCau3 N'Việt Nam'
exec SPCau4 N'Việt Nam'

110 % ▶
Results Messages
MACT HOTEN NGAYSINH DIACHI VITRI
1 6 Ronaldo 1989-12-12 00:00:00.000 NULL Tiền vệ
2 7 Robinho 1989-10-12 00:00:00.000 NULL Tiền vệ
3 9 Trần Văn Santos 1990-10-21 00:00:00.000 NULL Thủ môn

MAHLV TENHLV NGAYSINH DIACHI VAITRO TENCLB
1 HLV02 Lê Huỳnh Đức 1972-05-20 00:00:00.000 NULL HLV Chính SHB ĐÀ NẴNG
2 HLV04 Hoàng Anh Tuấn 1970-06-10 00:00:00.000 NULL HLV Chính KHATOCO KHÁNH HÒA
3 HLV05 Trần Công Minh 1973-07-07 00:00:00.000 NULL HLV Chính GẠCH ĐỒNG TÂM LONG AN
4 HLV06 Trần Văn Phúc 1965-02-03 00:00:00.000 NULL HLV thủ môn BECAMEX BÌNH DƯƠNG

MACLB TENCLB TENSAN DIACHI SOLUONG
```

```
--BDU03--
exec SPCau1 N'SHB Đà Nẵng', N'Brazil'
exec SPCau3 N'Việt Nam'
exec SPCau4 N'Việt Nam'
exec SPCau10 3, 2009
--BDU04--
exec SPCau1 N'SHB Đà Nẵng', N'Brazil'
exec SPCau10 3, 2009
exec SPCau3 N'Việt Nam'
exec SPCau4 N'Việt Nam'

110 % ▶
Messages
Msg 229, Level 14, State 5, Procedure SPCau10, Line 1 [Batch Start Line 437]
The EXECUTE permission was denied on the object 'SPCau10', database 'QLBongDa', schema 'dbo'.
Completion time: 2021-04-18T15:07:50.8266201+07:00
```

```
--BDU04--  
exec SPCau1 N'SHB Đà Nẵng', N'Brazil'  
exec SPCau3 N'Việt Nam'  
exec SPCau4 N'Việt Nam'  
exec SPCau10 3, 2009
```

110 %

Results Messages

	MACT	HOTEN	NGAYSINH	DIACHI	VITRI	
1	6	Ronaldo	1989-12-12 00:00:00.000	NULL	Tiền vệ	
2	7	Robinho	1989-10-12 00:00:00.000	NULL	Tiền vệ	
3	9	Trần Văn Santos	1990-10-21 00:00:00.000	NULL	Thủ môn	

	MAHLV	TENHLV	NGAYSINH	DIACHI	VAITRO	TENCLB
1	HLV02	Lê Huỳnh Đức	1972-05-20 00:00:00.000	NULL	HLV Chính	SHB ĐÀ NẴNG
2	HLV04	Hoàng Anh Tuấn	1970-06-10 00:00:00.000	NULL	HLV Chính	KHATOCO KHÁNH HÒA
3	HLV05	Trần Công Minh	1973-07-07 00:00:00.000	NULL	HLV Chính	GẠCH ĐỒNG TÂM LONG AN
4	HLV06	Trần Văn Phúc	1965-02-03 00:00:00.000	NULL	HLV thủ môn	BECAMEX BÌNH DƯƠNG

	MACLB	TENCLB	TENSAN	DIACHI	SOLUONG
--	-------	--------	--------	--------	---------

```
--BDU04--  
exec SPCau1 N'SHB Đà Nẵng', N'Brazil'  
exec SPCau3 N'Việt Nam'  
exec SPCau4 N'Việt Nam'  
exec SPCau10 3, 2009
```

121 %

Messages

```
Msg 229, Level 14, State 5, Procedure SPCau10, Line 1 [Batch Start Line 443]  
The EXECUTE permission was denied on the object 'SPCau10', database 'QLBongDa', schema 'dbo'.  
  
Completion time: 2021-04-18T22:22:22.5825571+07:00
```

STT	Tên User	Thực thi câu select	Giải thích kết quả
1	BDRead	EXEC SPCau1 ‘SHB Đà Nẵng’, ‘Brazil’ EXEC SPCau9 3, 2009	Thực thi được do user được phép thực thi tất cả các stored procedure
2	BDU01	EXEC SPCau3 ‘Việt Nam’ EXEC SPCau10 3, 2009	Thực thi được SPCau10 nhưng không được SPCau3 do user chỉ được phân quyền thực thi từ SPCau5=>SPCau10
3	BDU03	EXEC SPCau1 ‘SHB Đà Nẵng’, ‘Brazil’ EXEC SPCau10 3, 2009 EXEC SPCau3 ‘Việt Nam’ EXEC SPCau4 ‘Việt Nam’	Các stored procedure SPCau1, SPCau3, SPCau4 đều được thực thi trừ SPCau10 do user chỉ được phân quyền thực thi từ SPCau1=>SPCau4
4	BDU04	EXEC SPCau1 ‘SHB Đà Nẵng’, ‘Brazil’ EXEC SPCau10 3, 2009 EXEC SPCau3 ‘Việt Nam’ EXEC SPCau4 ‘Việt Nam’	Các stored procedure SPCau1, SPCau3, SPCau4 đều được thực thi trừ SPCau10 do user chỉ được phân quyền thực thi từ SPCau1=>SPCau4