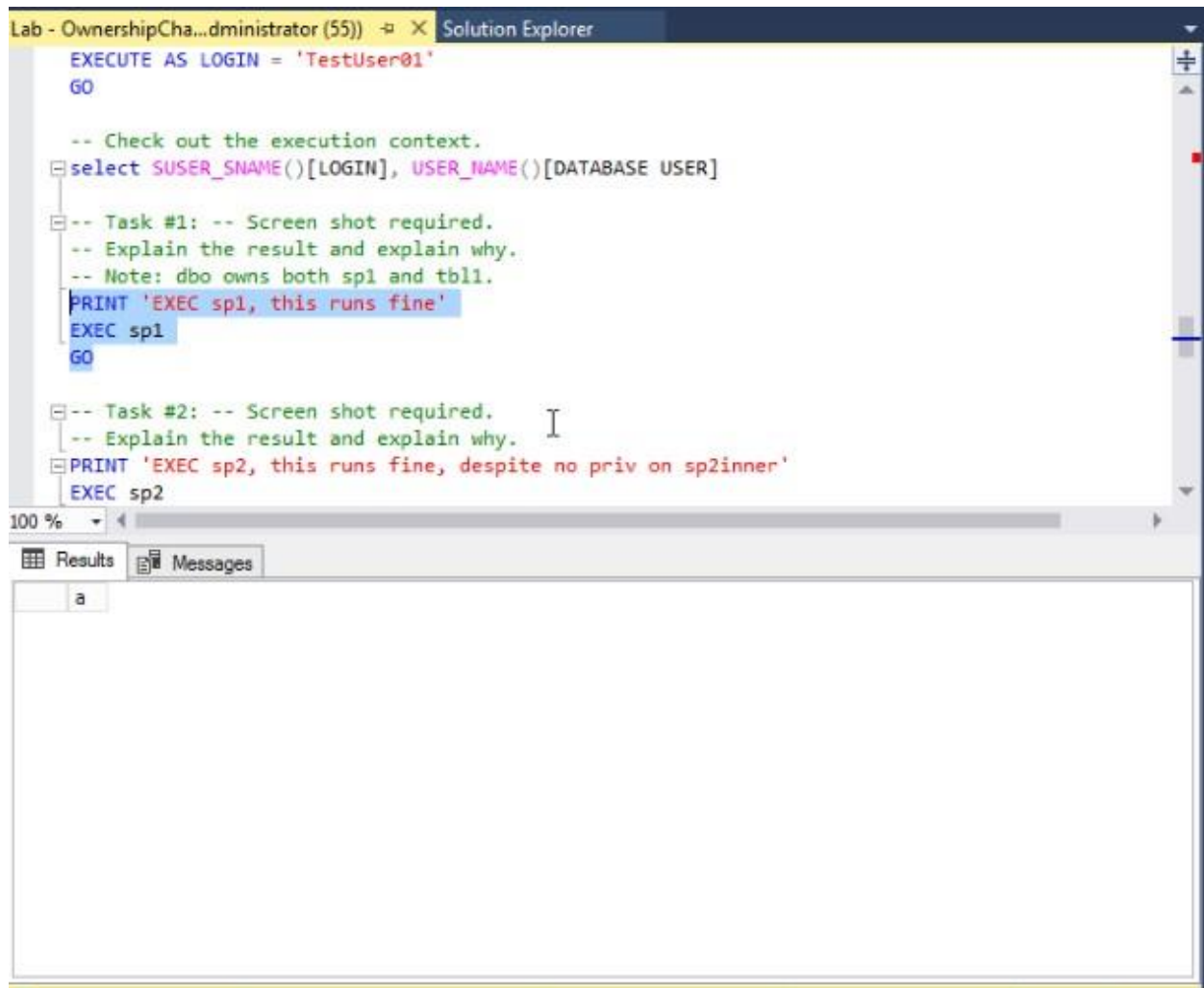


Lab - Ownership Chain

Submission Guideline

- This is due on **Sunday at midnight**.
- This is worth 5 points and graded as pass/fail.
- Use the following naming convention: Lab, lab#, last name, and extension (e.g., Lab1_Im.docx).
- Zoom in your screenshots, please.
- The instructions are in the attached file: **Lab-OwnershipChain (lab).sql**.

(Task 1) Show the outcome of this task in a screenshot. Also, explain briefly why you have received the result.



The screenshot shows a SQL Server Enterprise Manager window titled "Lab - OwnershipChain...dministrator (55)". The "Solution Explorer" pane is open on the right. The main query window contains the following T-SQL code:

```
EXECUTE AS LOGIN = 'TestUser01'
GO

-- Check out the execution context.
select SUSER_SNAME()[LOGIN], USER_NAME()[DATABASE USER]

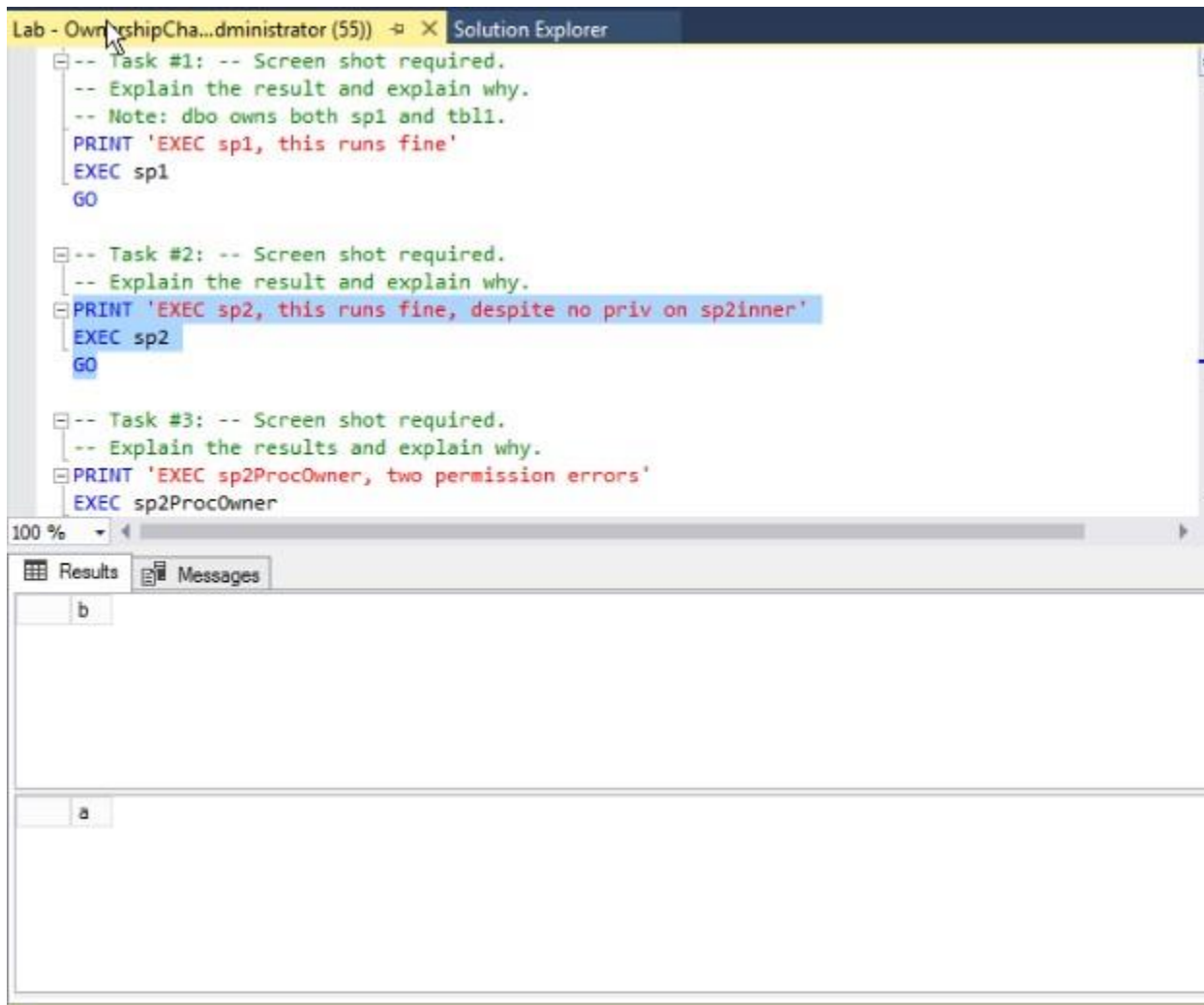
-- Task #1: -- Screen shot required.
-- Explain the result and explain why.
-- Note: dbo owns both sp1 and tbl1.
PRINT 'EXEC sp1, this runs fine'
EXEC sp1
GO

-- Task #2: -- Screen shot required.
-- Explain the result and explain why.
PRINT 'EXEC sp2, this runs fine, despite no priv on sp2inner'
EXEC sp2
```

The "Results" pane at the bottom shows a single row with the value "a".

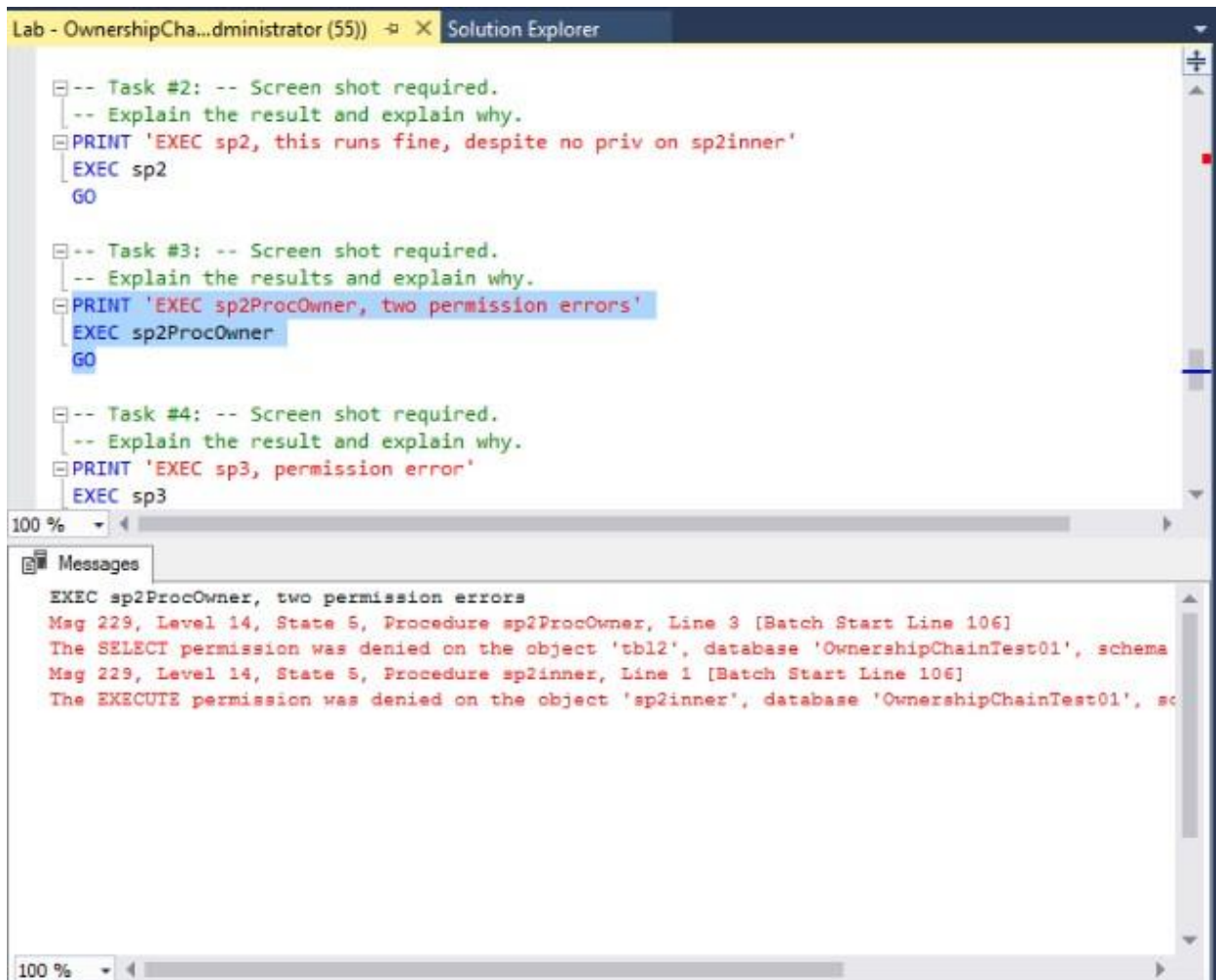
The stored procedure 'sp1' selects the column 'a' from the table 'tbl1' and we receive the result of column 'a'. The stored procedure executed successfully and returned the expected result. The functionality of the stored procedure works as expected.

(Task 2) Show the outcome of this task in a screenshot. Also, explain briefly why you have received the result.



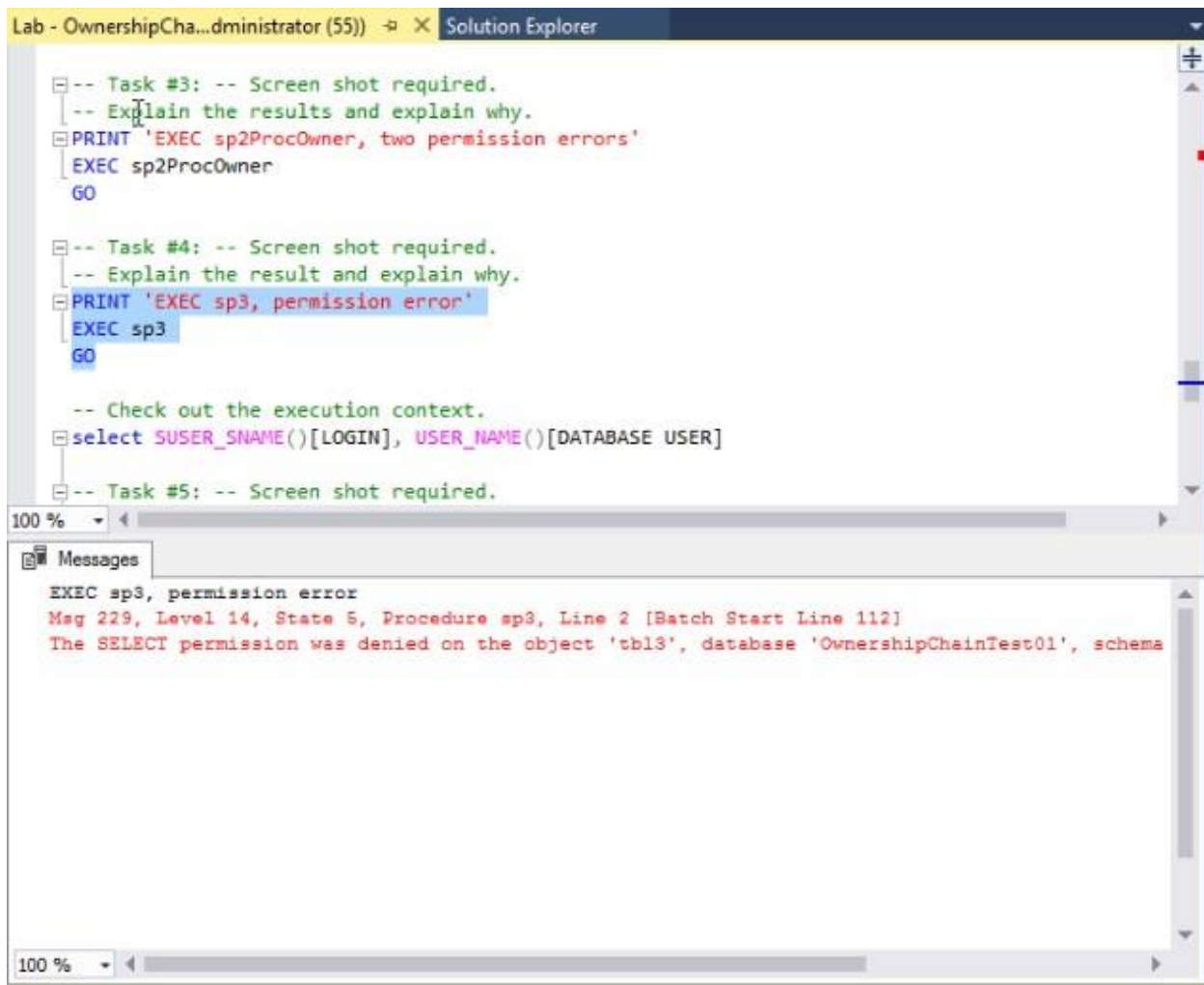
The stored procedure 'sp2' selects the column 'b' from the table 'tbl2' and we receive the result of column 'b'. The test user we created has EXECUTE permissions for 'sp2' but not for 'sp2inner'. Despite this, the execution of 'sp2' is successful for the TestUser01 because of ownership chaining. 'sp2' and 'sp2inner' are both under the same schema which means a direct call from 'sp2' to 'sp2inner' is able to occur and execute as such.

(Task 3) Show the outcome of this task in a screenshot. Also, explain briefly why you have received the result.



We get this result because 'TestUser01' does not have SELECT permissions for the table 'tbl2'. 'sp2ProcOwner' is executed successfully due to ownership chaining between 'sp2ProcOwner' and 'sp2inner', but the SELECT operation inside 'sp2' on 'tbl2' requires us to provide direct permissions which have not been done for 'TestUser01'. Consequently, the user also does not have explicit execute permissions since it tries to execute via 'sp2inner' which lacks the EXECUTE permissions for that user.

(Task 4) Show the outcome of this task in a screenshot. Also, explain briefly why you have received the result.



Like above, the TestUser01 lacks EXECUTE permissions for 'tbl3' when executing 'sp3'. Despite the ownership chain being present, those explicit permissions are required of the user to execute the stored procedure. The user was never even given stored procedure access in the first place, and that is required.

(**Task 5**) Show the outcome of this task in a screenshot. Also, explain briefly why the result is different from the one from Task #4?

Lab - OwnershipCha...dministrator (55) X Solution Explorer

```
GO

-- Task #4: -- Screen shot required.
-- Explain the result and explain why.
PRINT 'EXEC sp3, permission error'
EXEC sp3
GO

-- Check out the execution context.
select SUSER_SNAME()[LOGIN], USER_NAME()[DATABASE USER]

-- Task #5: -- Screen shot required.
-- Change the execution context to sysadmin and perform Task #4.
-- How is the result different from the one from Task #4? Explain why?
-- Stop being the tester and become sysadmin.
REVERT
GO
```

100 %

Results Messages

c

Query executed su... WIN-AVPBP9ATULM (13.0 SP1) TEST\Administrator (55) OwnershipChainTest01 00:00:00

The stored procedure 'sp3' selects the column 'c' from the table 'tbl3' and we receive the result of column 'c'. It now works since we switched over the execution context to an admin account that has EXECUTE privileges by default.