**IST 278 Test 3 Hands-On Part**

Name: Ramon Rodriguez Date: 7/23/24

# **Test Instructions**

1. Type your name and the date in the spaces provided.
2. Use the SQL Server Management Studio and the IST278EagleCorp database.
3. Complete the **3** exercises in this document. Make sure to scroll down. This document has several pages to it.
4. Upload and submit a completed copy of this test document before the due date.

**Exercise 1 (a database security exercise):**

Write a script that creates a user-defined database role in the AP database. Name this new role VendorRoleXX where the XX are your initials. Give UPDATE permission to the new role for the Vendors table, UPDATE, INSERT, and DELETE permission for the ContactUpdates table, and SELECT permission for all user tables. Make sure to include a comment at the top of the script with your name and the date you coded the script. Format this comment like the following sample:

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\* VendorRoleXX Role Creation Script \*/

/\* Coded by: Your Name \*/

/\* Coded on: MM/DD/YY \*/

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

**---** **Paste below this line the Script you wrote for this exercise --**

Paste here

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\* VendorRoleRR Role Creation Script \*/

/\* Coded by: Ramon Rodriguez \*/

/\* Coded on: 7/23/24 \*/

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

CREATE ROLE VendorRoleRR;

GO

GRANT UPDATE ON Vendors TO VendorRoleRR;

GO

GRANT UPDATE, INSERT, DELETE ON ContactUpdates TO VendorRoleRR;

GO

GRANT SELECT ON SCHEMA::dbo TO VendorRoleRR;

GO

**---** **Paste below this line the run results from executing the script you wrote--**

Paste here

A screenshot of a computer code

Description automatically generated

**Exercise 2 (a database security exercise):**

Write a script that uses a table, dynamic SQL, and a cursor to create login IDs in the AP database based on the contents of the table.

1. Get started by first creating the table. Below is a create statement that you can modify and execute to create this table. Make sure to change the XX in the table name to your initials:

CREATE TABLE T3NewLoginsXX (LoginName varchar(128));

1. After the table is created. Insert four rows in it. Below is an insert statement that you can modify and execute to put the rows in your T3NewLoginsXX table. In addition to modifying the table name, make sure to change the XX at the start of each login name to your initials before running this insert.

INSERT T3NewLoginsXX VALUES ('XXFFloyd'), ('XXTTimpkin'), ('XXHHaplin'), ('XXJJingle');

1. Start coding the script with a comment block. Format this comment like the following sample (make sure to revise the sample to reflect your name and the date you coded it):

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\* Login Generator Script \*/

/\* This Script uses dynamic SQL and a cursor to process the \*/

/\* T3NEWLoginsXX table one row at a time. For each row on \*/

/\* this table the script will perform four actions. \*/

/\* \*/

/\* Coded by: Your Name \*/

/\* Coded on: MM/DD/YY \*/

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

1. Code the rest of your script using dynamic SQL and a cursor to perform four actions for each row in this table:

(1) create a login with a temporary password that's based on the first five letters of the login name followed by “888”

(2) set the default database to the AP database

(3) create a user for the login with the same name as the login

(4) assign the user to the VendorRoleXX role you created in exercise 1.

**--- Paste below this line the Script you wrote for this exercise --**

Paste here

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\* Login Generator Script \*/

/\* This Script uses dynamic SQL and a cursor to process the \*/

/\* T3NewLoginsRR table one row at a time. For each row on \*/

/\* this table the script will perform four actions. \*/

/\* \*/

/\* Coded by: [Ramon Rodriguez] \*/

/\* Coded on: [07/23/24] \*/

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

USE AP;

DECLARE @LoginName varchar(128);

DECLARE login\_cursor CURSOR FOR

SELECT LoginName FROM T3NewLoginsRR;

OPEN login\_cursor;

FETCH NEXT FROM login\_cursor INTO @LoginName;

WHILE @@FETCH\_STATUS = 0

BEGIN

DECLARE @TempPassword varchar(128);

SET @TempPassword = LEFT(@LoginName, 5) + '888';

DECLARE @SQL nvarchar(4000);

SET @SQL = '

CREATE LOGIN [' + @LoginName + '] WITH PASSWORD = ''' + @TempPassword + ''', CHECK\_POLICY = OFF;

ALTER LOGIN [' + @LoginName + '] WITH DEFAULT\_DATABASE = AP;

CREATE USER [' + @LoginName + '] FOR LOGIN [' + @LoginName + '];

ALTER ROLE VendorRoleRR ADD MEMBER [' + @LoginName + '];';

EXEC sp\_executesql @SQL;

FETCH NEXT FROM login\_cursor INTO @LoginName;

END;

CLOSE login\_cursor;

DEALLOCATE login\_cursor;

**---** **Paste below this line the run results from executing the script you wrote—**

Paste here

A close up of numbers

Description automatically generated

**Exercise 3 (a database security exercise):**

Write a script that removes the user-defined database role named VendorRoleXX. Make sure to include a comment at the top of the script with your name and the date you coded the script. Format this comment like the following sample:

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\* Script to remove the users and the role created \*/

/\* \*/

/\* Coded by: Your Name \*/

/\* Coded on: MM/DD/YY \*/

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

After the comment block, code the script to do the following:

1. drop all the users from the VendorRoleXX role.
2. drop the VendorRoleXX role.

**--- Paste below this line the Script you wrote for this exercise --**

Paste here

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\* Script to remove the users and the role created \*/

/\* \*/

/\* Coded by: Ramon Rodriguez \*/

/\* Coded on: 07/23/24 \*/

/\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

DECLARE @RoleName nvarchar(128) = 'VendorRoleRR';

DECLARE @SQL nvarchar(max) = '';

SELECT @SQL = STRING\_AGG(

'ALTER ROLE ' + QUOTENAME(@RoleName) + ' DROP MEMBER ' + QUOTENAME(dp.name),

'; '

)

FROM sys.database\_principals dp

JOIN sys.database\_role\_members drm ON dp.principal\_id = drm.member\_principal\_id

JOIN sys.database\_principals r ON r.principal\_id = drm.role\_principal\_id

WHERE r.name = @RoleName;

IF @SQL <> ''

BEGIN

EXEC sp\_executesql @SQL;

END

DROP ROLE [VendorRoleRR];

**---** **Paste below this line the run results from executing the script you wrote--**

Paste here

A screenshot of a computer

Description automatically generated