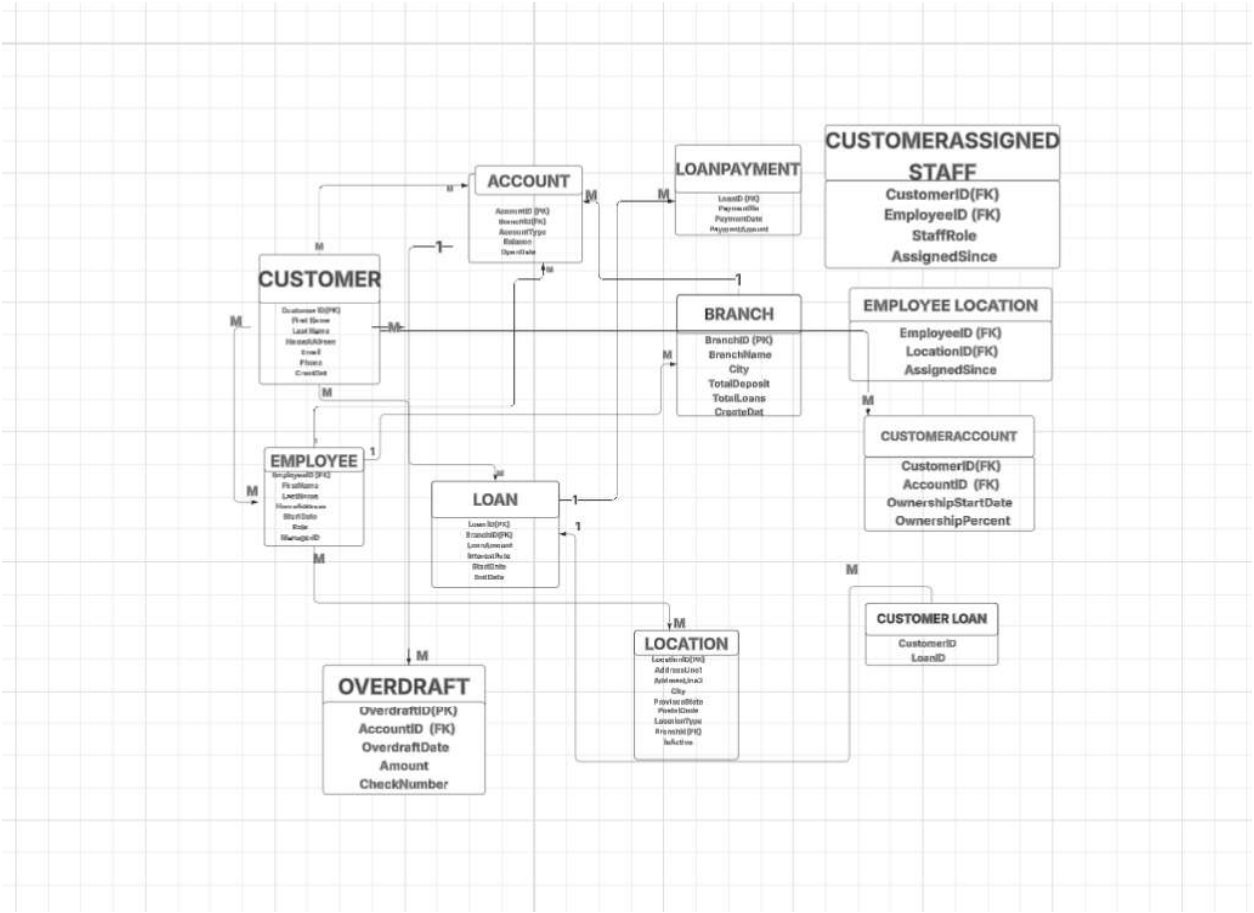
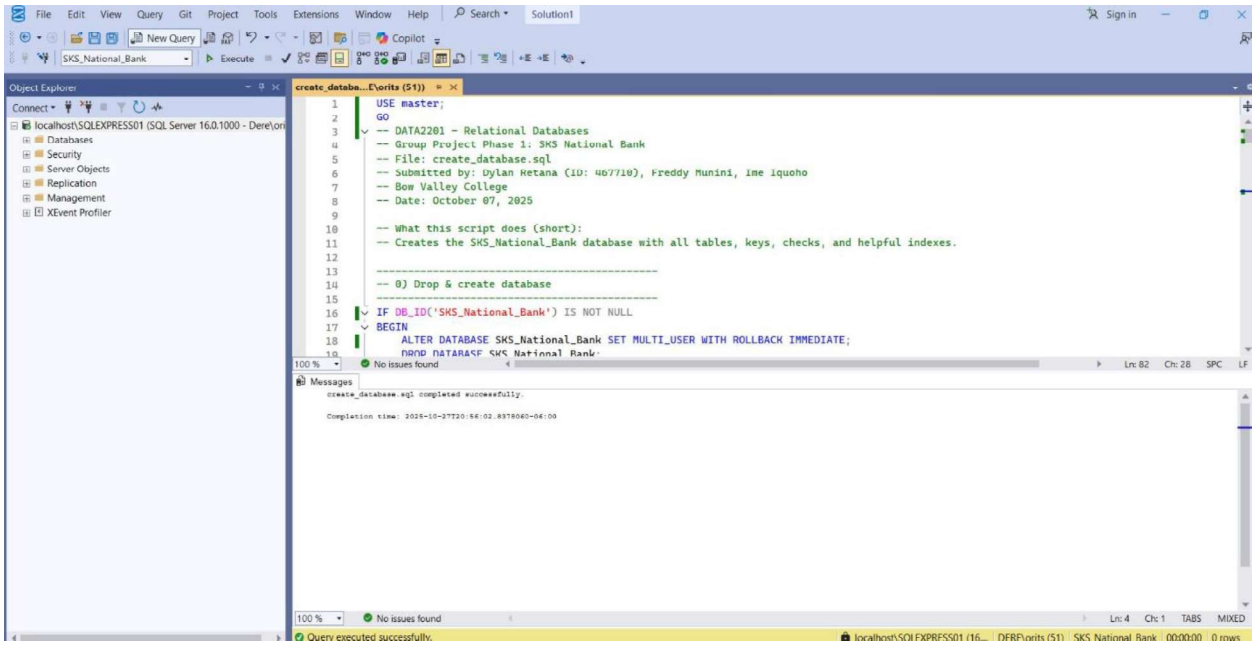
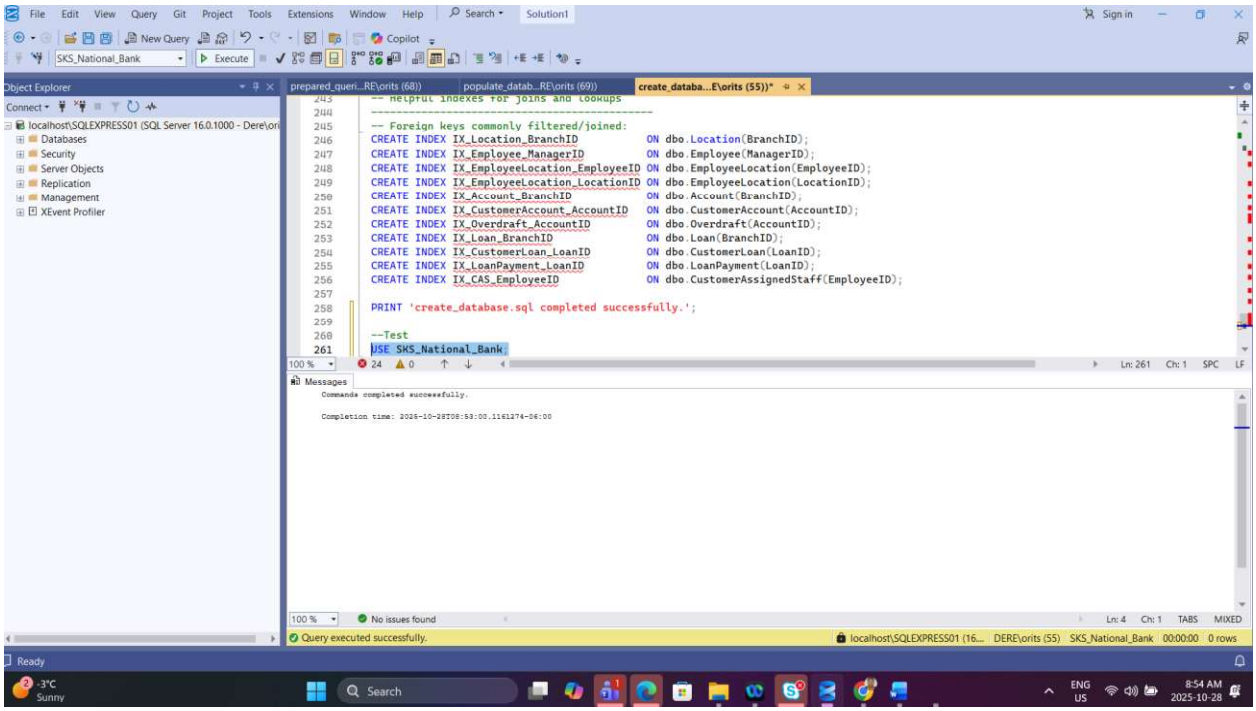
ERD Diagram.


ACCOUNT
LOANPAYMENT
CUSTOMERASSIGNED STAFF
CustomerID(FK)
EmployeeID (FK)
StaffRole
AssignedSince
CUSTOMER
BRANCH
BranchID (PK)
BranchName
City
TotalDeposit
TotalLoans
CreateDat
EMPLOYEE LOCATION
EmployeeID (FK)
LocationID(FK)
AssignedSince
CUSTOMERACCOUNT
CustomerID(FK)
AccountID (FK)
OwnershipStartDate
OwnershipPercent
EMPLOYEE
LOAN
CUSTOMER LOAN
CustomerID
LoanID
LOCATION
OVERDRAFT
OverdraftID(PK)
AccountID (FK)
OverdraftDate
Amount
CheckNumber

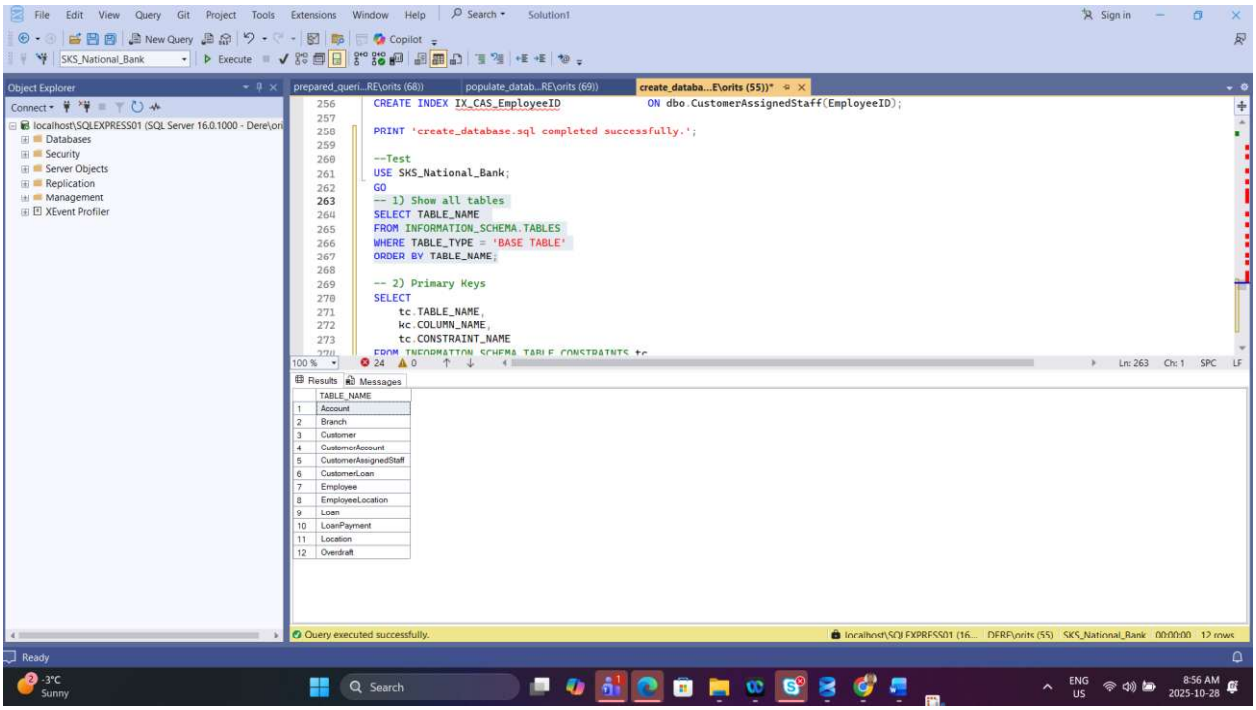
create_database_databse



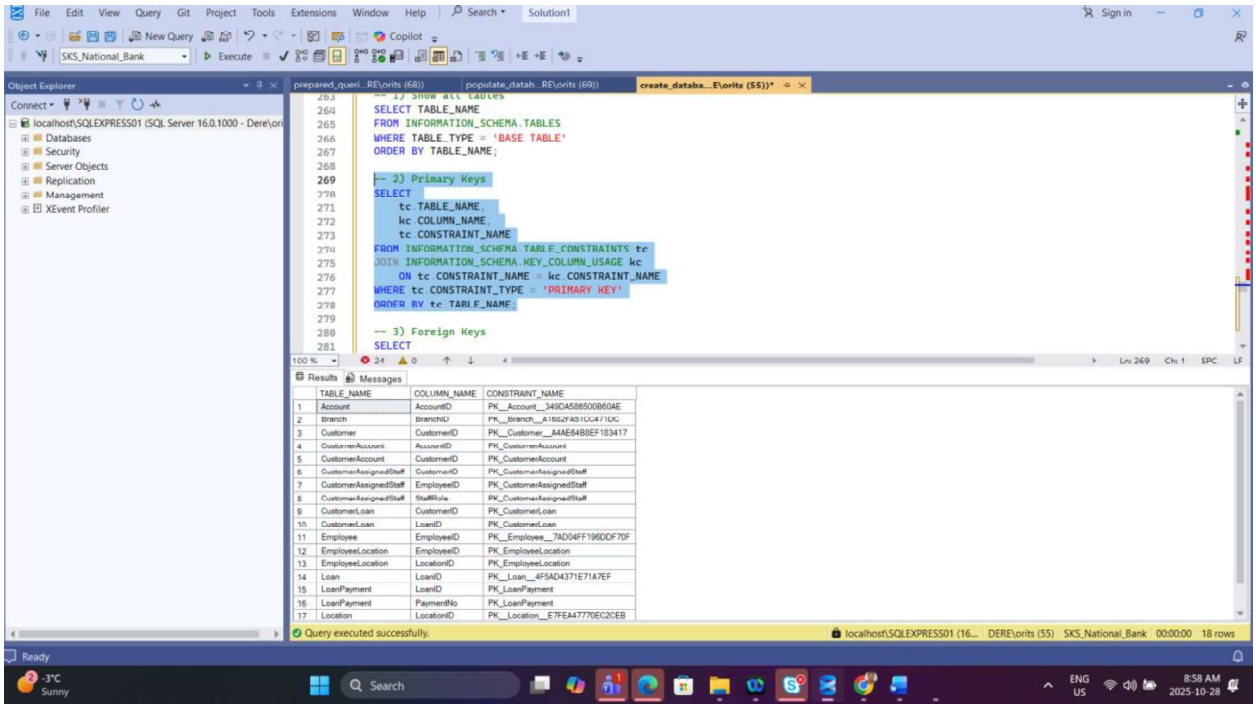
1) Confirm database exist



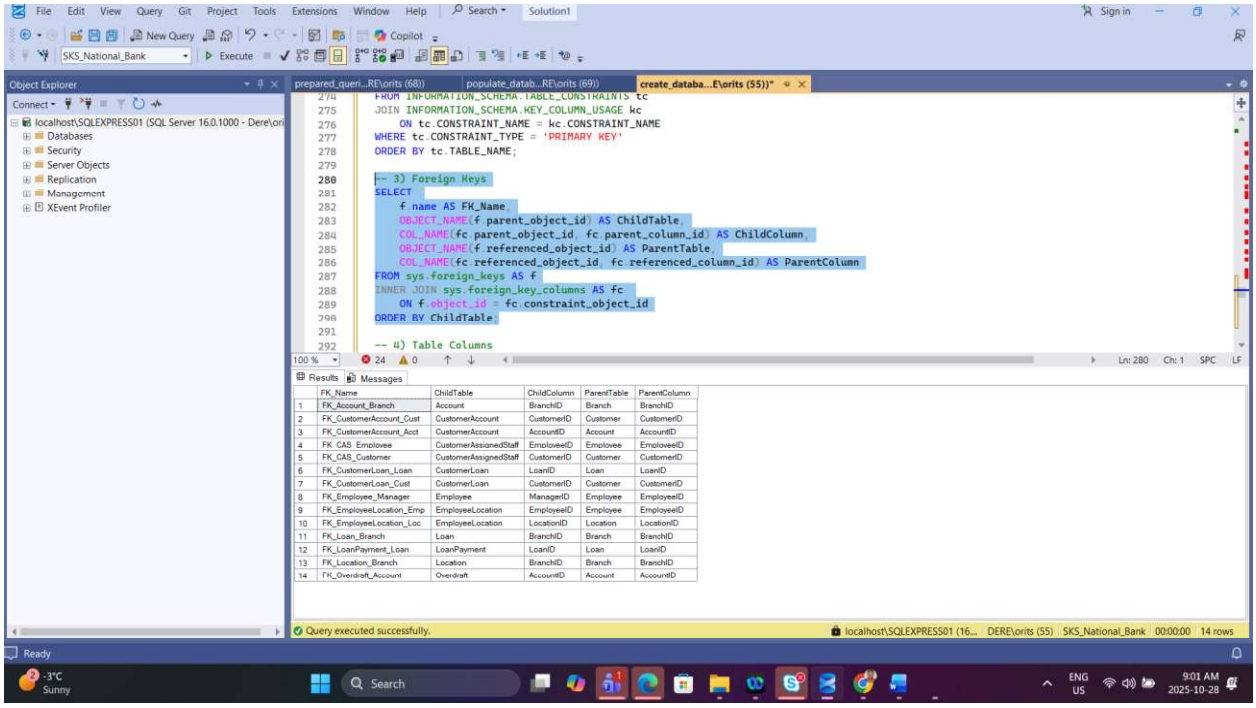
2) Show_Table



3) Primary_key



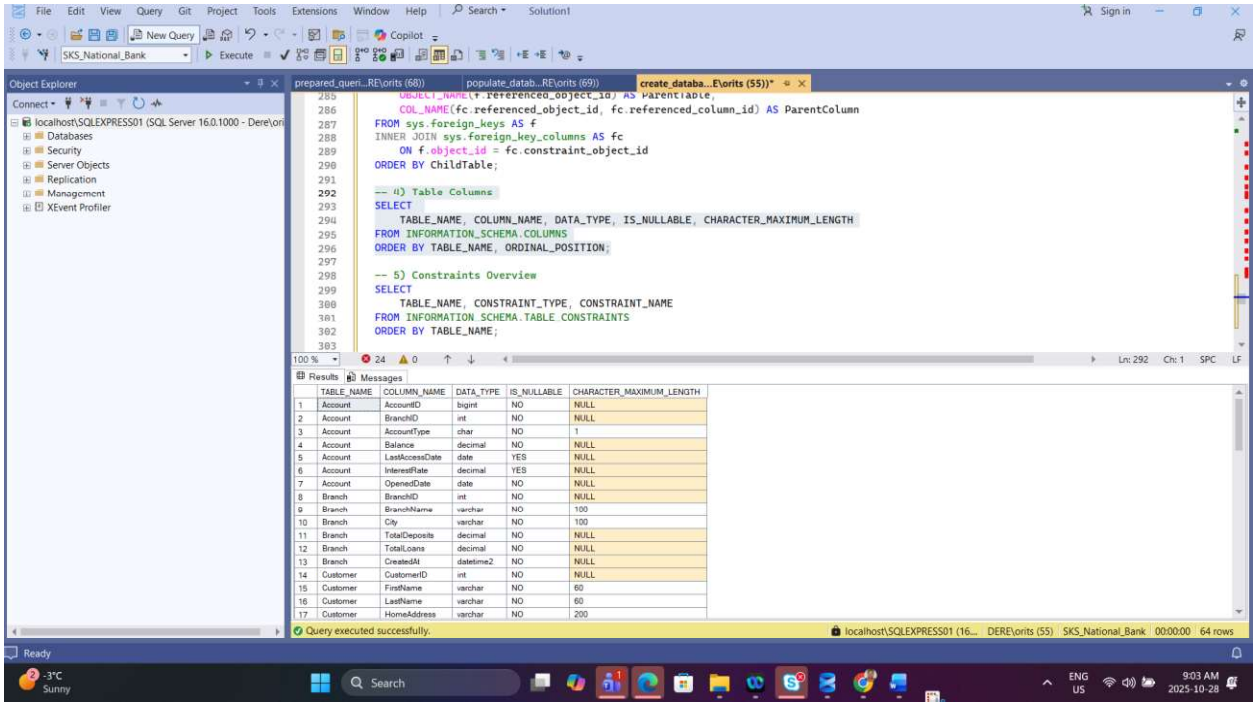
4) Foreign_key



```
FROM INFORMATION_SCHEMA.TABLE_CONSTRAINTS tc
JOIN INFORMATION_SCHEMA.KEY_COLUMN_USAGE kc
    ON tc.CONSTRAINT_NAME = kc.CONSTRAINT_NAME
WHERE tc.CONSTRAINT_TYPE = 'PRIMARY KEY'
ORDER BY tc.TABLE_NAME;

-- 3) Foreign Keys
SELECT
    f.name AS FK_Name,
    OBJECT_NAME(f.parent_object_id) AS ChildTable,
    COL_NAME(fc.parent_object_id, fc.parent_column_id) AS ChildColumn,
    OBJECT_NAME(f.referenced_object_id) AS ParentTable,
    COL_NAME(fc.referenced_object_id, fc.referenced_column_id) AS ParentColumn
FROM sys.foreign_keys AS f
INNER JOIN sys.foreign_key_columns AS fc
    ON f.object_id = fc.constraint_object_id
ORDER BY ChildTable;

-- 4) Table Columns
```

	FK_Name	ChildTable	ChildColumn	ParentTable	ParentColumn
1	FK_Account_Branch	Account	BranchID	Branch	BranchID
2	FK_CustomerAccount_Cust	CustomerAccount	CustomerID	Customer	CustomerID
3	FK_CustomerAccount_Acct	CustomerAccount	AccountID	Account	AccountID
4	FK_CAS_Employee	CustomerAssignedStaff	EmployeeID	Employee	EmployeeID
5	FK_CAS_Customer	CustomerAssignedStaff	CustomerID	Customer	CustomerID
6	FK_CustomerLoan_Loan	CustomerLoan	LoanID	Loan	LoanID
7	FK_CustomerLoan_Cust	CustomerLoan	CustomerID	Customer	CustomerID
8	FK_Employee_Manager	Employee	ManagerID	Employee	EmployeeID
9	FK_EmployeeLocation_Emp	EmployeeLocation	EmployeeID	Employee	EmployeeID
10	FK_EmployeeLocation_Loc	EmployeeLocation	LocationID	Location	LocationID
11	FK_Loan_Branch	Loan	BranchID	Branch	BranchID
12	FK_LoanPayment_Loan	LoanPayment	LoanID	Loan	LoanID
13	FK_Location_Branch	Location	BranchID	Branch	BranchID
14	FK_Overdraft_Account	Overdraft	AccountID	Account	AccountID

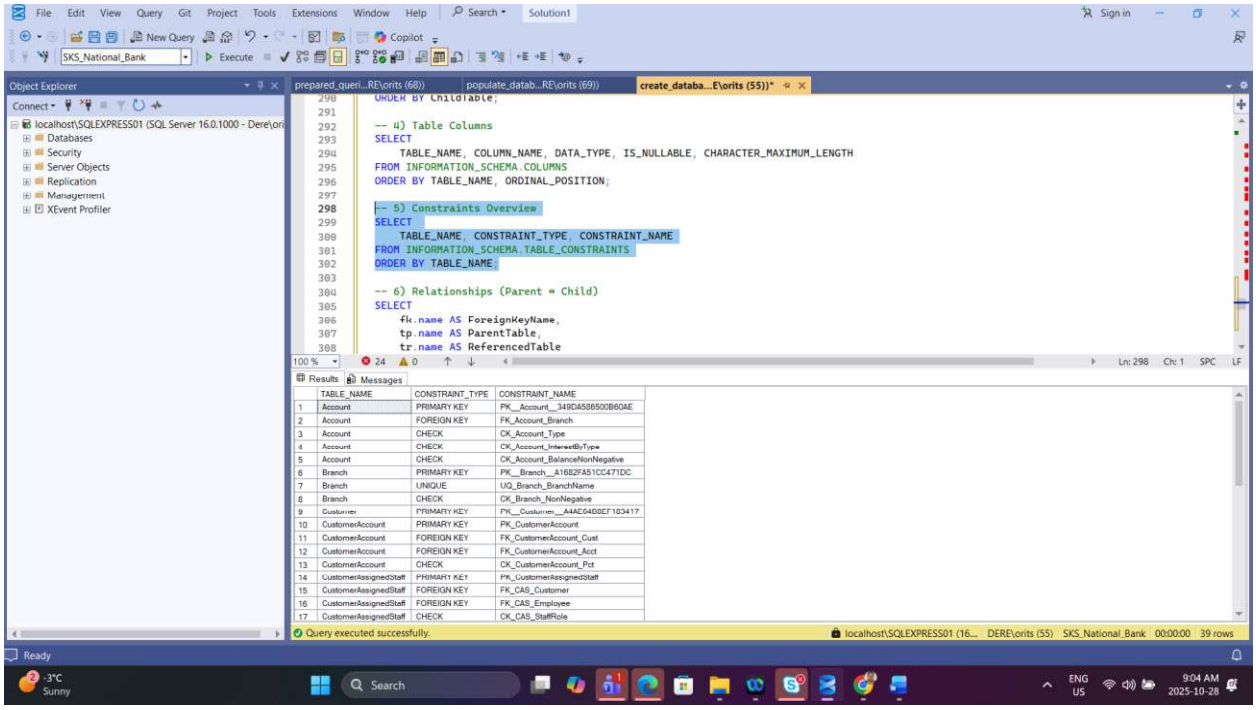
5) Table_columns



```
    OBJECT_NAME(f.referenced_object_id) AS ParentTable,
    COL_NAME(fc.referenced_object_id, fc.referenced_column_id) AS ParentColumn
FROM sys.foreign_keys AS f
INNER JOIN sys.foreign_key_columns AS fc
    ON f.object_id = fc.constraint_object_id
ORDER BY ChildTable;

-- 4) Table Columns
SELECT
    TABLE_NAME, COLUMN_NAME, DATA_TYPE, IS_NULLABLE, CHARACTER_MAXIMUM_LENGTH
FROM INFORMATION_SCHEMA.COLUMNS
ORDER BY TABLE_NAME, ORDINAL_POSITION;

-- 5) Constraints Overview
SELECT
    TABLE_NAME, CONSTRAINT_TYPE, CONSTRAINT_NAME
FROM INFORMATION_SCHEMA.TABLE_CONSTRAINTS
ORDER BY TABLE_NAME;
```

	TABLE_NAME	COLUMN_NAME	DATA_TYPE	IS_NULLABLE	CHARACTER_MAXIMUM_LENGTH
1	Account	AccountID	bigint	NO	NULL
2	Account	BranchID	int	NO	NULL
3	Account	AccountType	char	NO	1
4	Account	Balance	decimal	NO	NULL
5	Account	LastAccessDate	date	YES	NULL
6	Account	InterestRate	decimal	YES	NULL
7	Account	OpenedDate	date	NO	NULL
8	Branch	BranchID	int	NO	NULL
9	Branch	BranchName	varchar	NO	100
10	Branch	City	varchar	NO	100
11	Branch	TotalDeposits	decimal	NO	NULL
12	Branch	TotalLoans	decimal	NO	NULL
13	Branch	CreatedAt	datetime2	NO	NULL
14	Customer	CustomerID	int	NO	NULL
15	Customer	FirstName	varchar	NO	60
16	Customer	LastName	varchar	NO	60
17	Customer	HomeAddress	varchar	NO	200

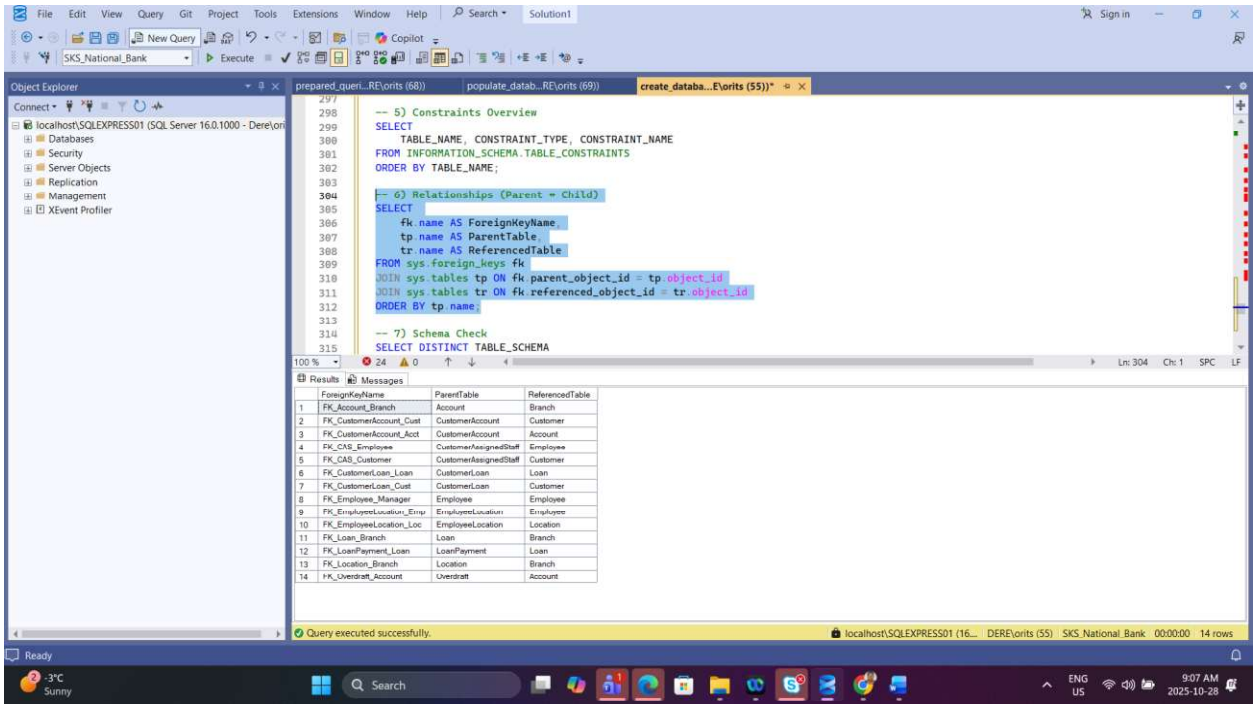
6) Constriants_overview



```
-- 4) Table Columns
SELECT
    TABLE_NAME, COLUMN_NAME, DATA_TYPE, IS_NULLABLE, CHARACTER_MAXIMUM_LENGTH
FROM INFORMATION_SCHEMA.COLUMNS
ORDER BY TABLE_NAME, ORDINAL_POSITION;

-- 5) Constraints Overview
SELECT
    TABLE_NAME, CONSTRAINT_TYPE, CONSTRAINT_NAME
FROM INFORMATION_SCHEMA.TABLE_CONSTRAINTS
ORDER BY TABLE_NAME;

-- 6) Relationships (Parent → Child)
SELECT
    fk.name AS ForeignKeyName,
    tp.name AS ParentTable,
    tr.name AS ReferencedTable
```

	TABLE_NAME	CONSTRAINT_TYPE	CONSTRAINT_NAME
1	Account	PRIMARY KEY	PK__Account__349DA586500B60AE
2	Account	FOREIGN KEY	FK_Account_Branch
3	Account	CHECK	CK_Account_Type
4	Account	CHECK	CK_Account_InterestByType
5	Account	CHECK	CK_Account_BalanceNonNegative
6	Branch	PRIMARY KEY	PK__Branch__A1682FA51CC471DC
7	Branch	UNIQUE	UQ_Branch_BranchName
8	Branch	CHECK	CK_Branch_NonNegative
9	Customer	PRIMARY KEY	PK__Customer__A4AE64D8EF103417
10	CustomerAccount	PRIMARY KEY	PK_CustomerAccount
11	CustomerAccount	FOREIGN KEY	FK_CustomerAccount_Cust
12	CustomerAccount	FOREIGN KEY	FK_CustomerAccount_Acct
13	CustomerAccount	CHECK	CK_CustomerAccount_Pct
14	CustomerAssignedStaff	PRIMARY KEY	PK_CustomerAssignedStaff
15	CustomerAssignedStaff	FOREIGN KEY	FK_CAS_Customer
16	CustomerAssignedStaff	FOREIGN KEY	FK_CAS_Employee
17	CustomerAssignedStaff	CHECK	CK_CAS_StaffRole

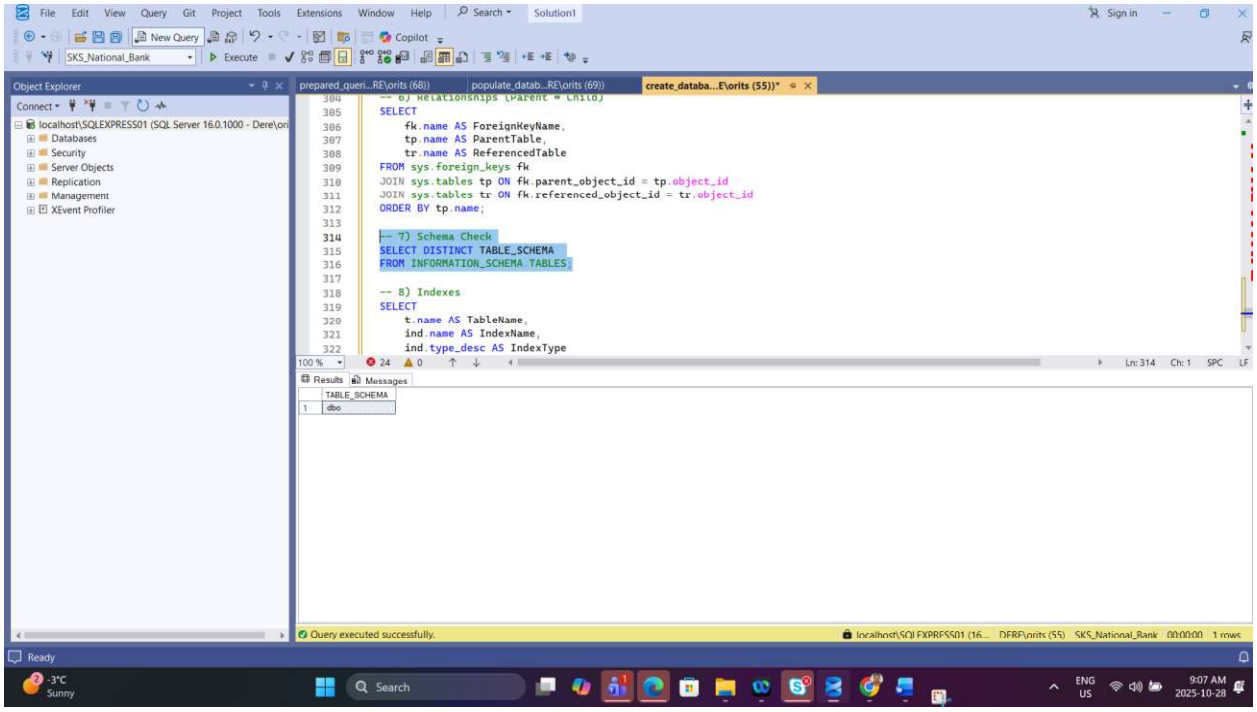
7) Relationship_parents_child



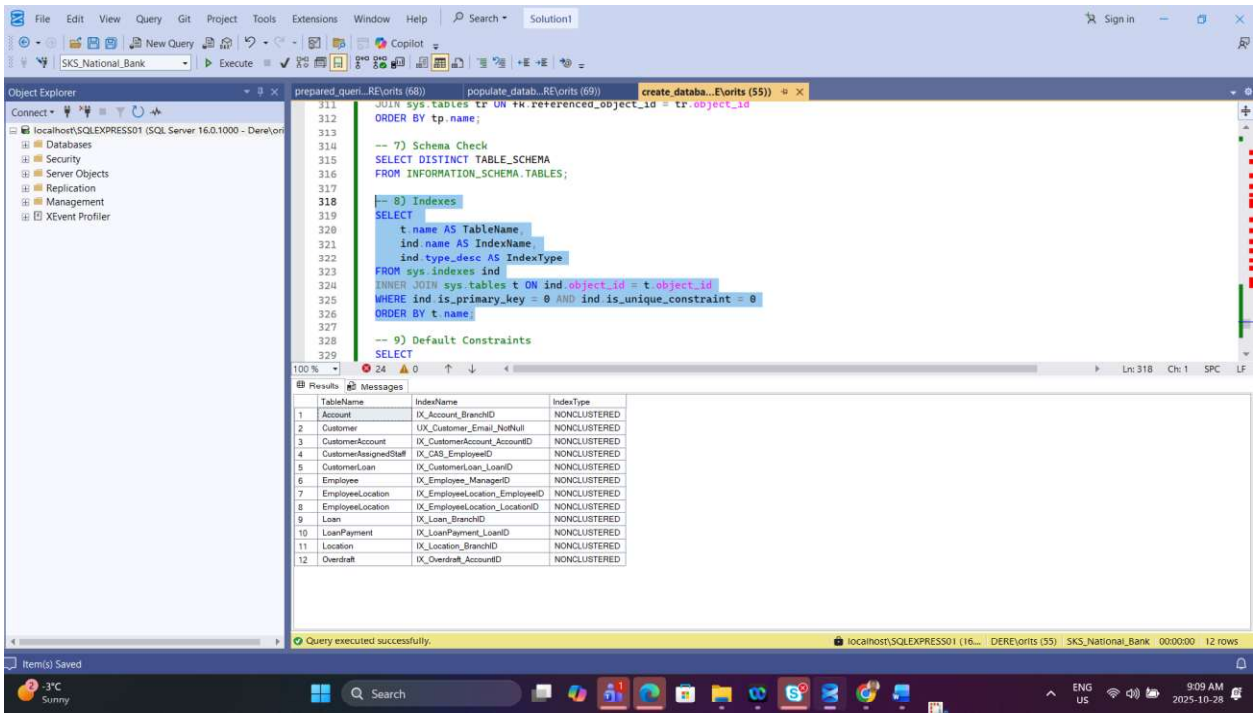
```
-- 5) Constraints Overview
SELECT
    TABLE_NAME, CONSTRAINT_TYPE, CONSTRAINT_NAME
FROM INFORMATION_SCHEMA.TABLE_CONSTRAINTS
ORDER BY TABLE_NAME;

-- 6) Relationships (Parent → Child)
SELECT
    fk.name AS ForeignKeyName,
    tp.name AS ParentTable,
    tr.name AS ReferencedTable
FROM sys.foreign_keys fk
JOIN sys.tables tp ON fk.parent_object_id = tp.object_id
JOIN sys.tables tr ON fk.referenced_object_id = tr.object_id
ORDER BY tp.name;

-- 7) Schema Check
SELECT DISTINCT TABLE_SCHEMA
```

	ForeignKeyName	ParentTable	ReferencedTable
1	FK_Account_Branch	Account	Branch
2	FK_CustomerAccount_Cust	CustomerAccount	Customer
3	FK_CustomerAccount_Acct	CustomerAccount	Account
4	FK_CAS_Employee	CustomerAssignedStaff	Employee
5	FK_CAS_Customer	CustomerAssignedStaff	Customer
6	FK_CustomerLoan_Loan	CustomerLoan	Loan
7	FK_CustomerLoan_Cust	CustomerLoan	Customer
8	FK_Employee_Manager	Employee	Employee
9	FK_EmployeeLocation_Emp	EmployeeLocation	Employee
10	FK_EmployeeLocation_Loc	EmployeeLocation	Location
11	FK_Loan_Branch	Loan	Branch
12	FK_LoanPayment_Loan	LoanPayment	Loan
13	FK_Location_Branch	Location	Branch
14	FK_Overdraft_Account	Overdraft	Account

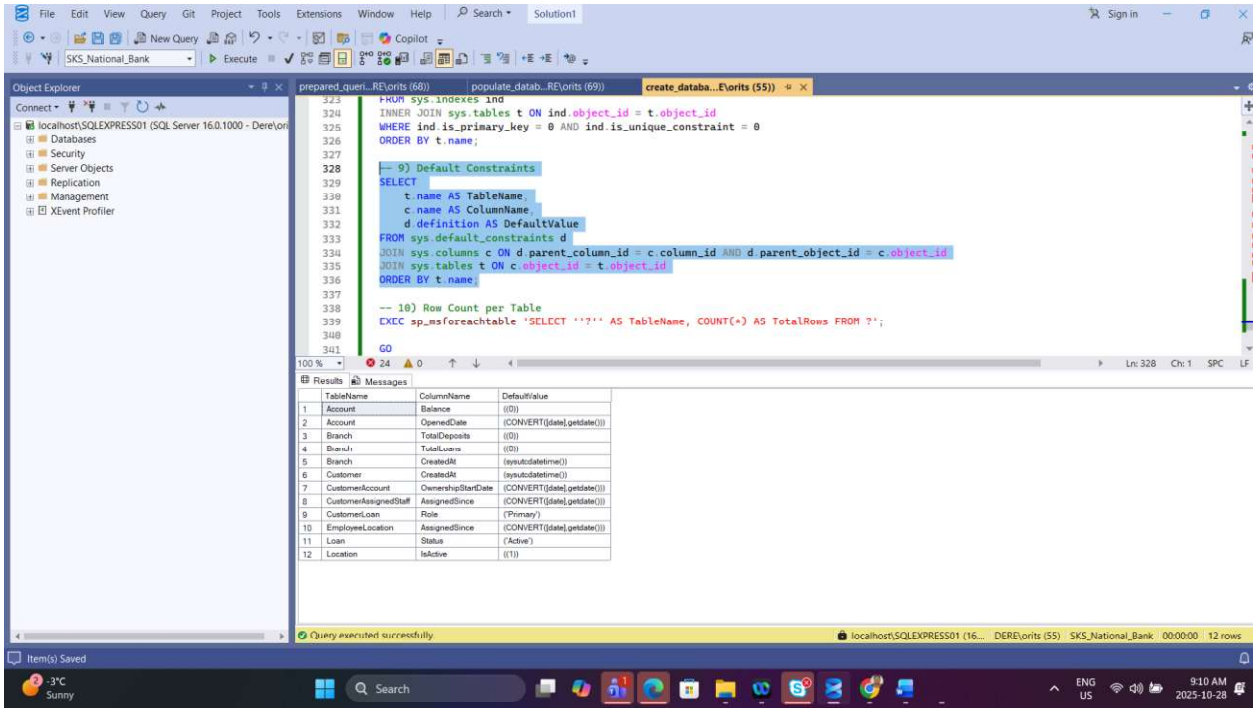
8) Schema_check



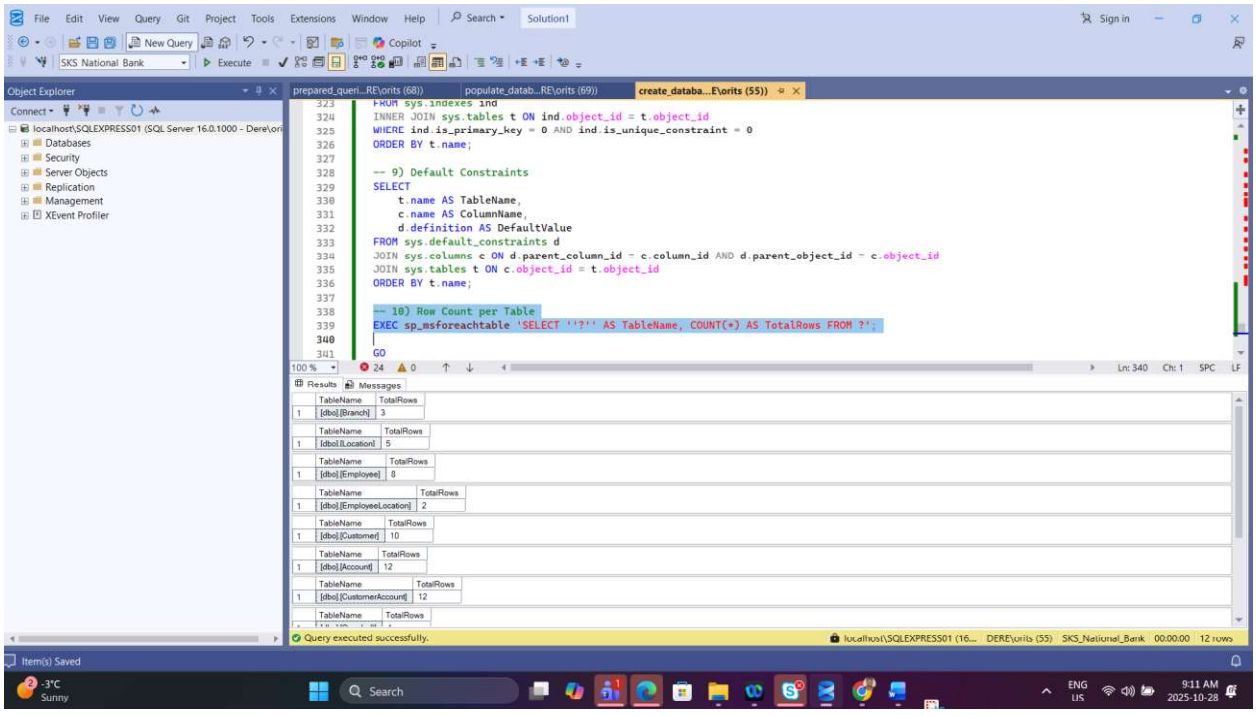
9) Indexes



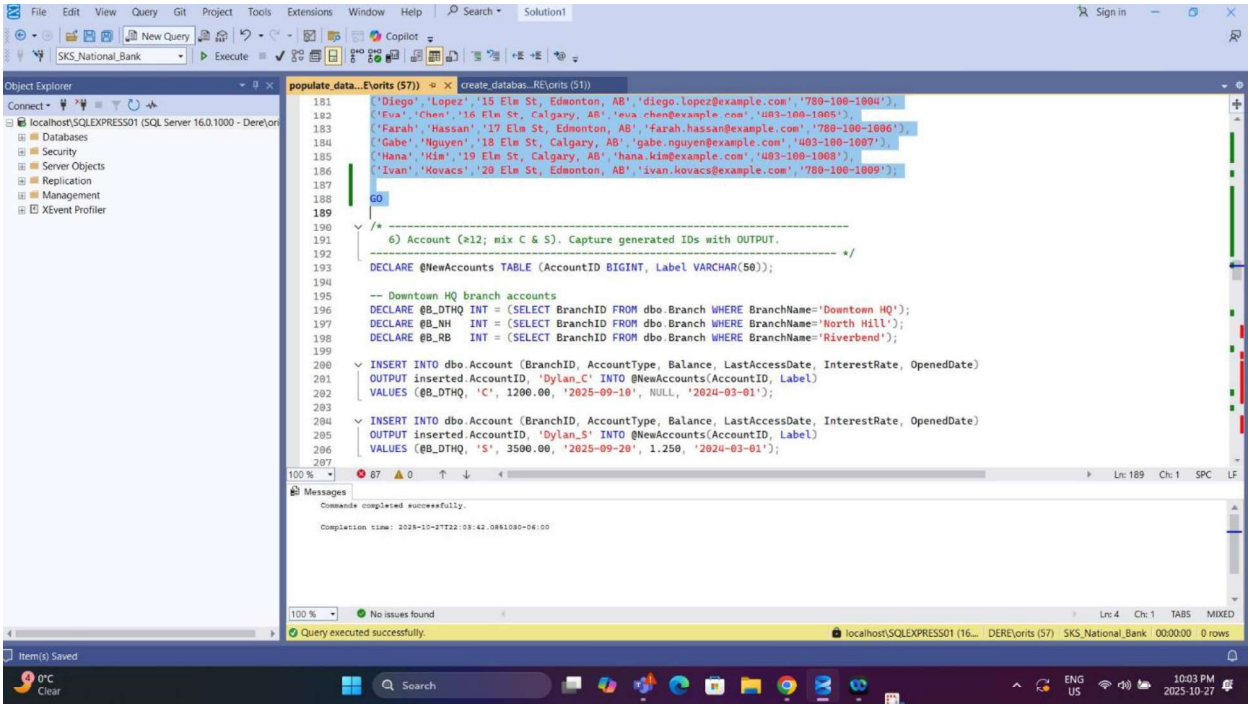
10) Default_constrainst



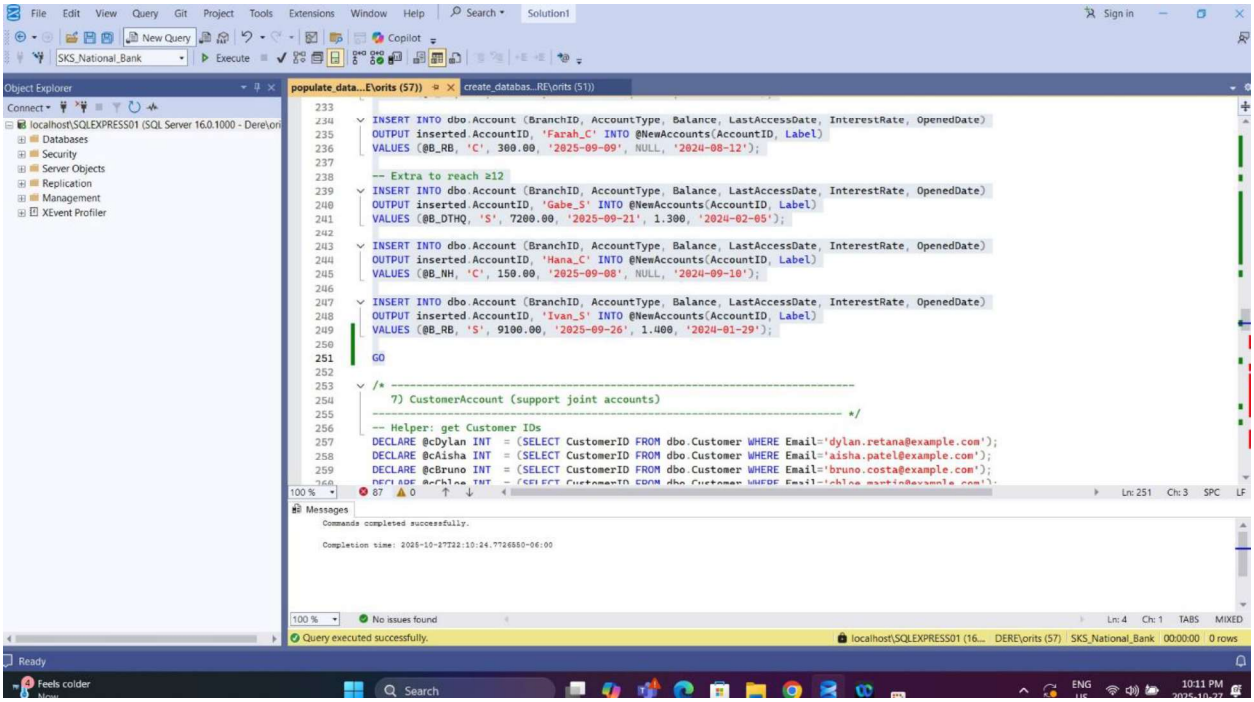
11) Row-count_per_table



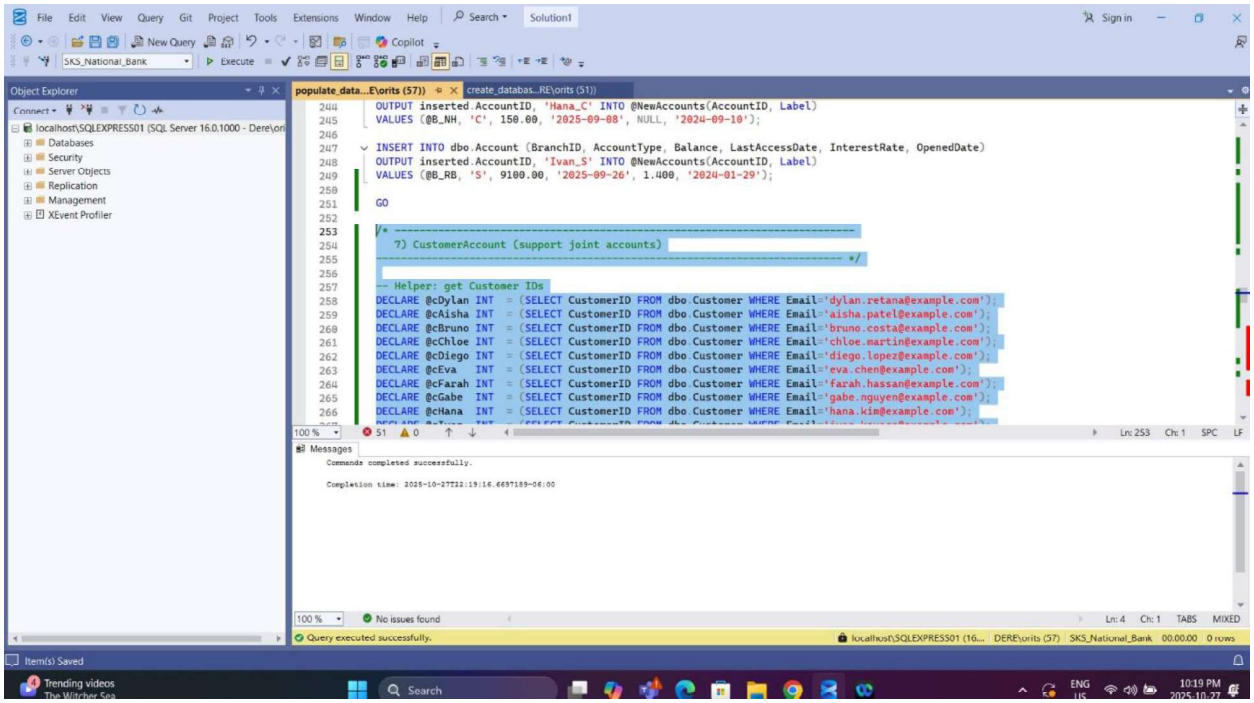
populate_database_database



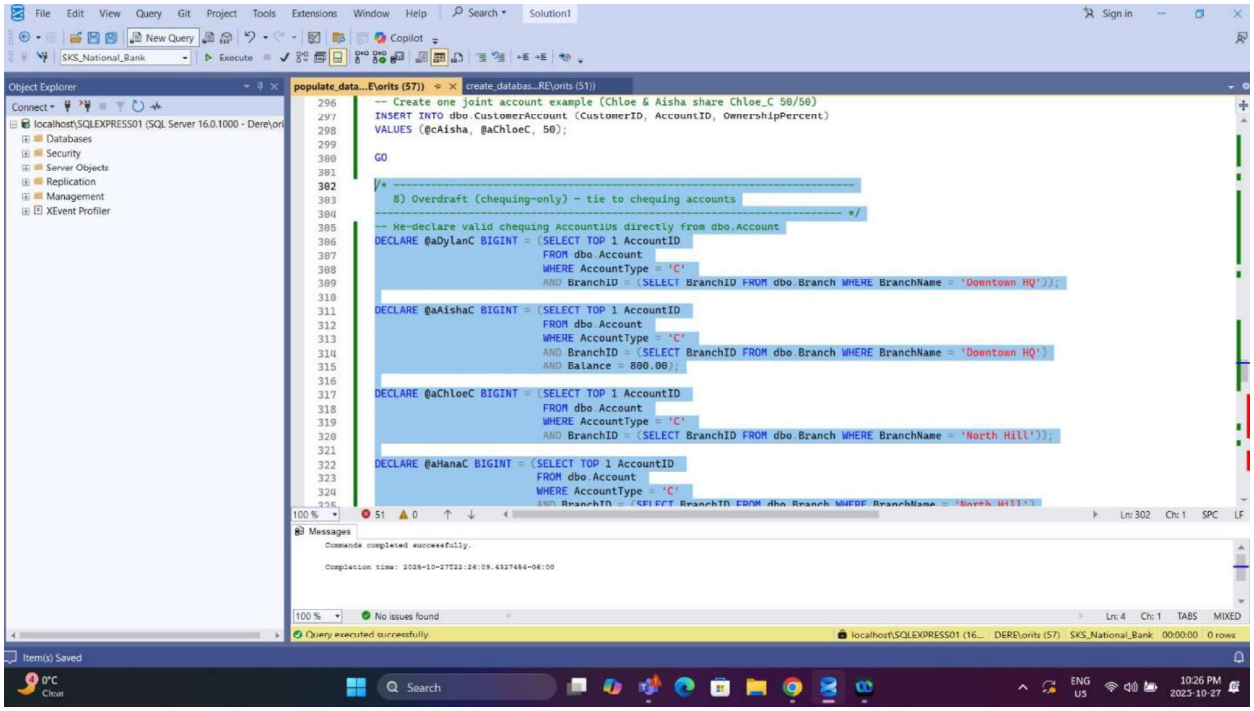
1) populate_databse_account



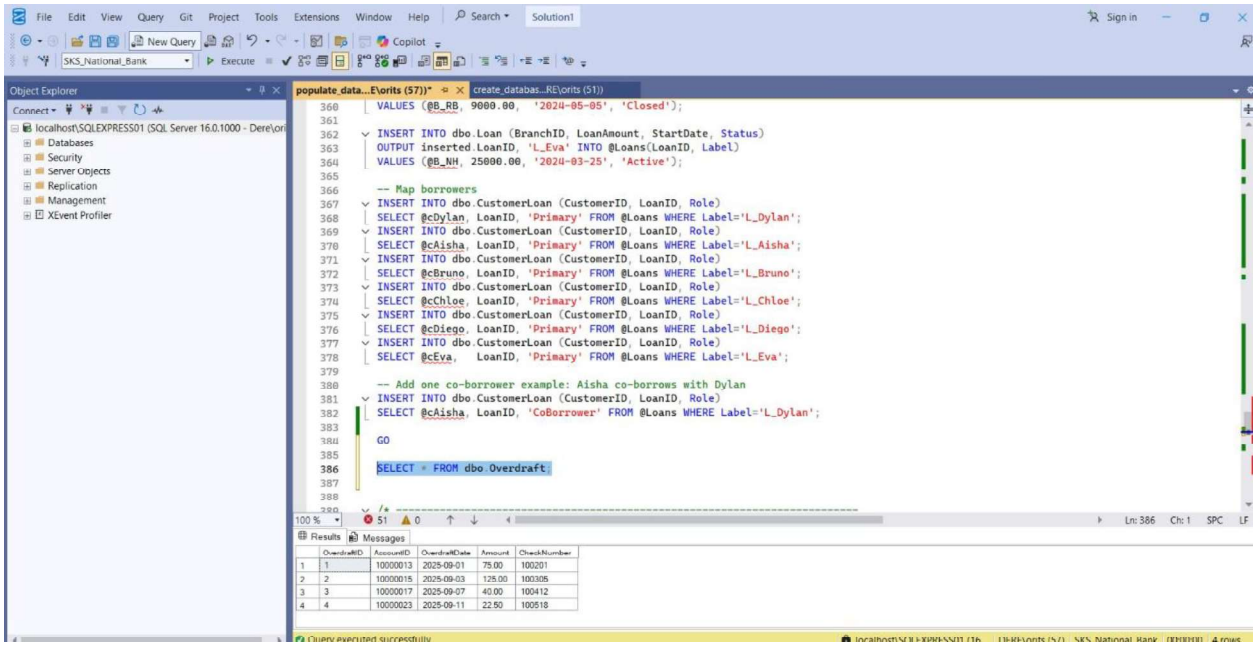
2) populate_database.sql Customer Account



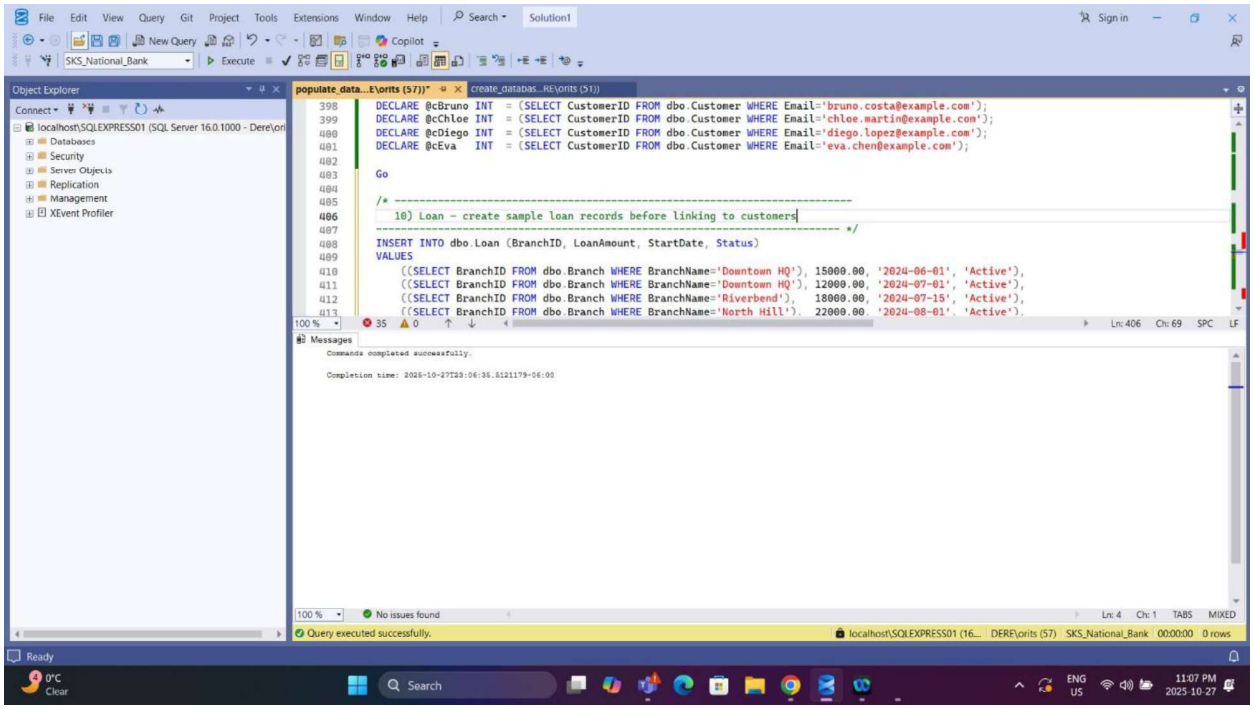
3) populate_database.sql Overdraft



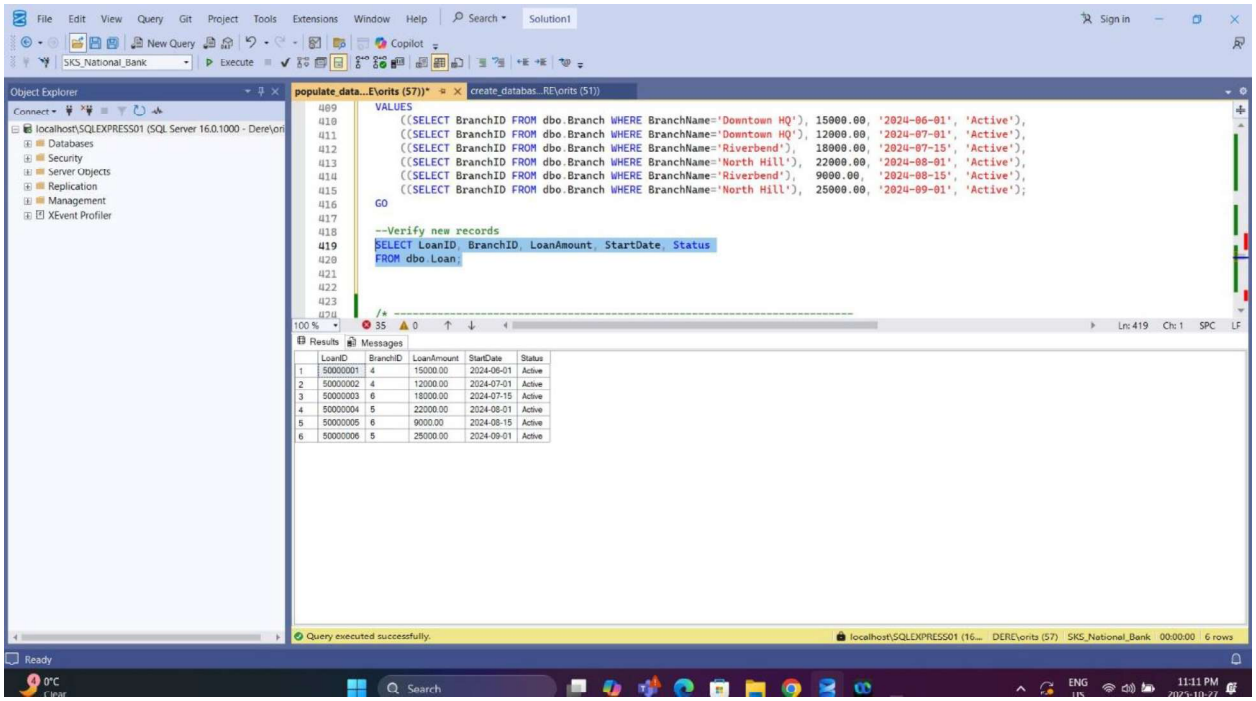
4) populate_database.sql Overdraft_Test



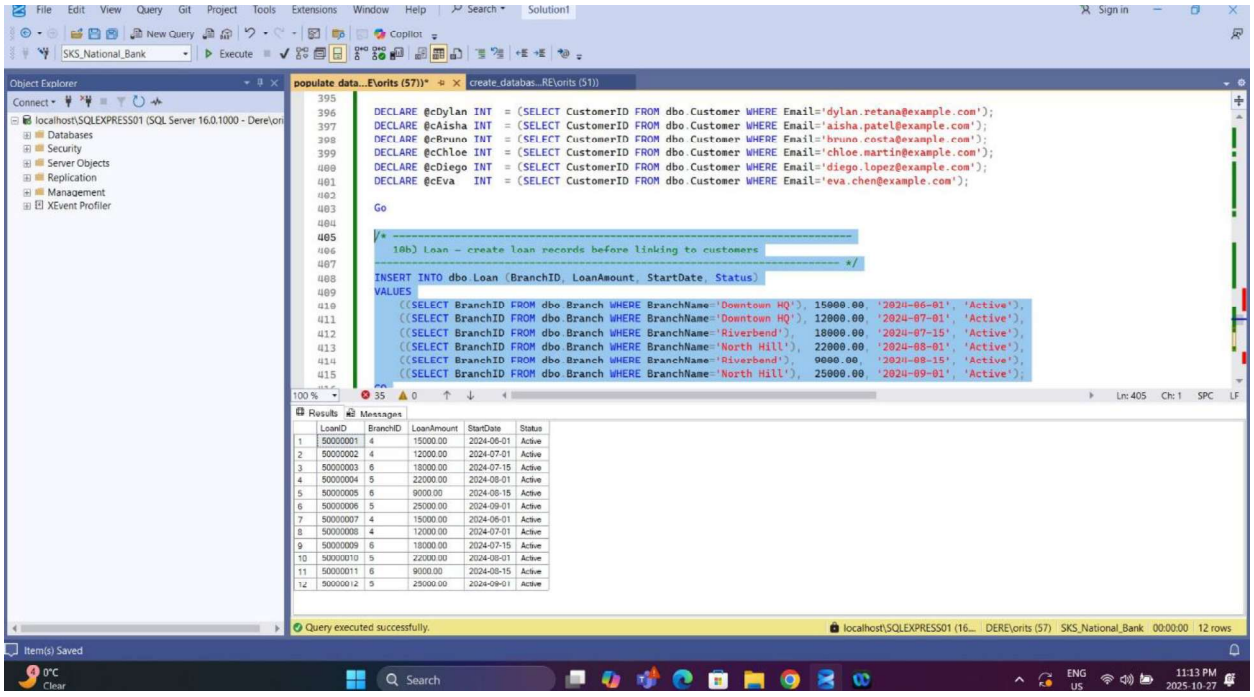
5) populate_database.sql Loan Table.



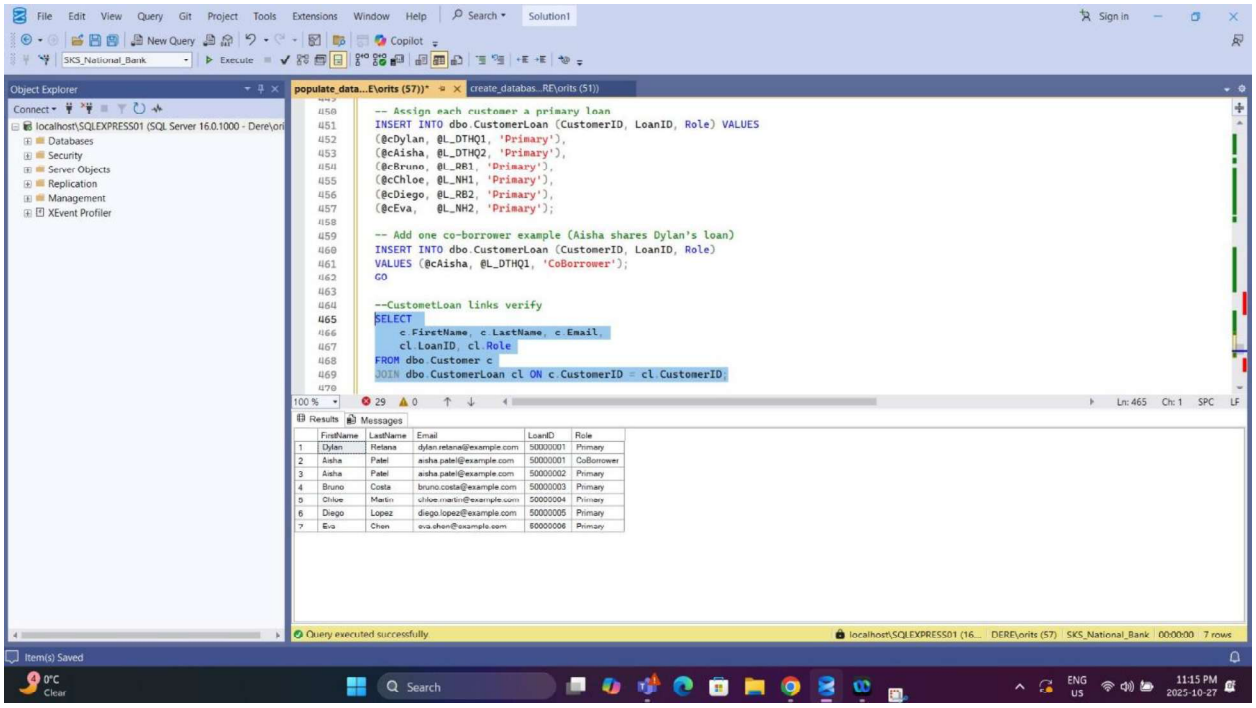
6) populate_database.sql Loan Table-New records



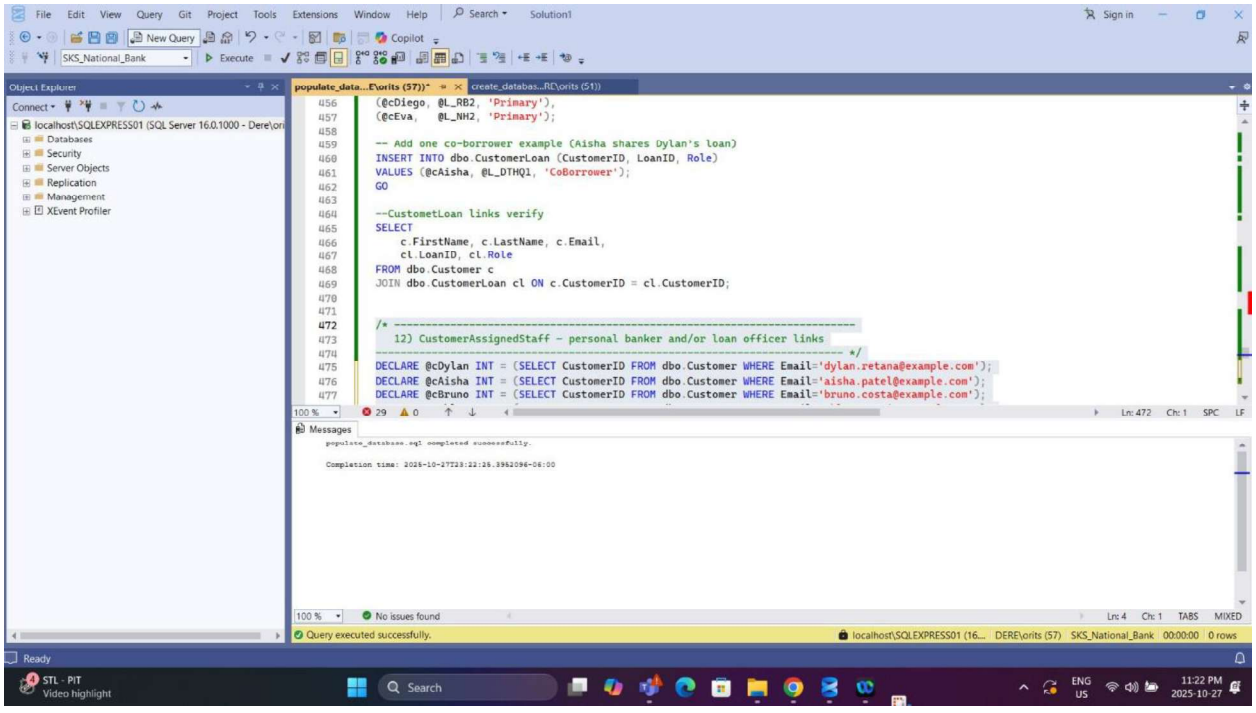
7) populate_database.sql Loan Table-New records accounts linkage



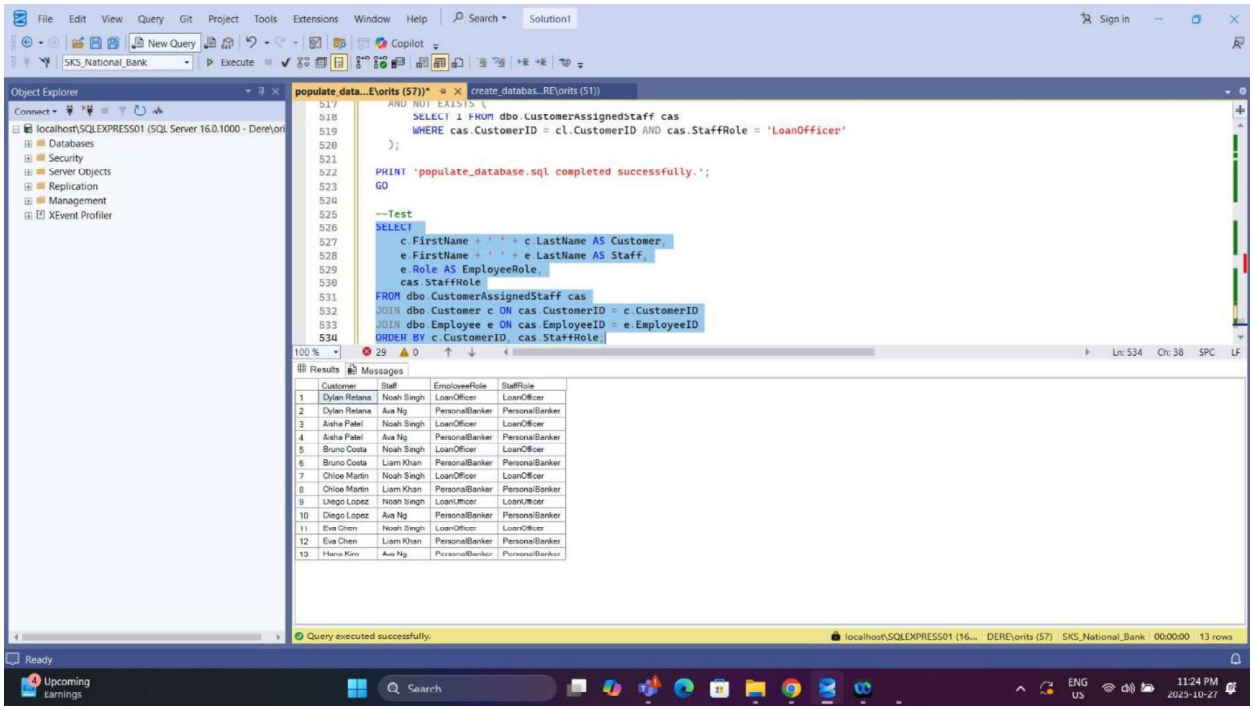
8) populate_database.sql Loan Table-CustomerLoan link verify



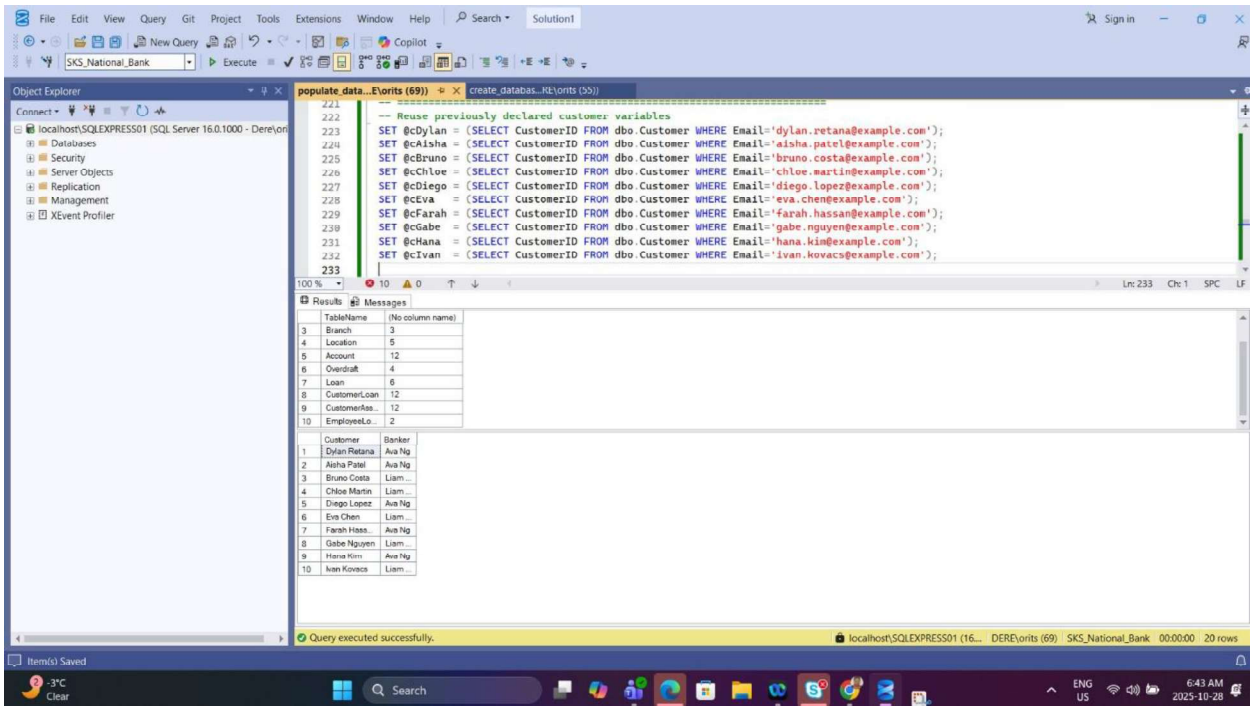
9) populate_database.sql Loan Table-CustomerAssigned Staff



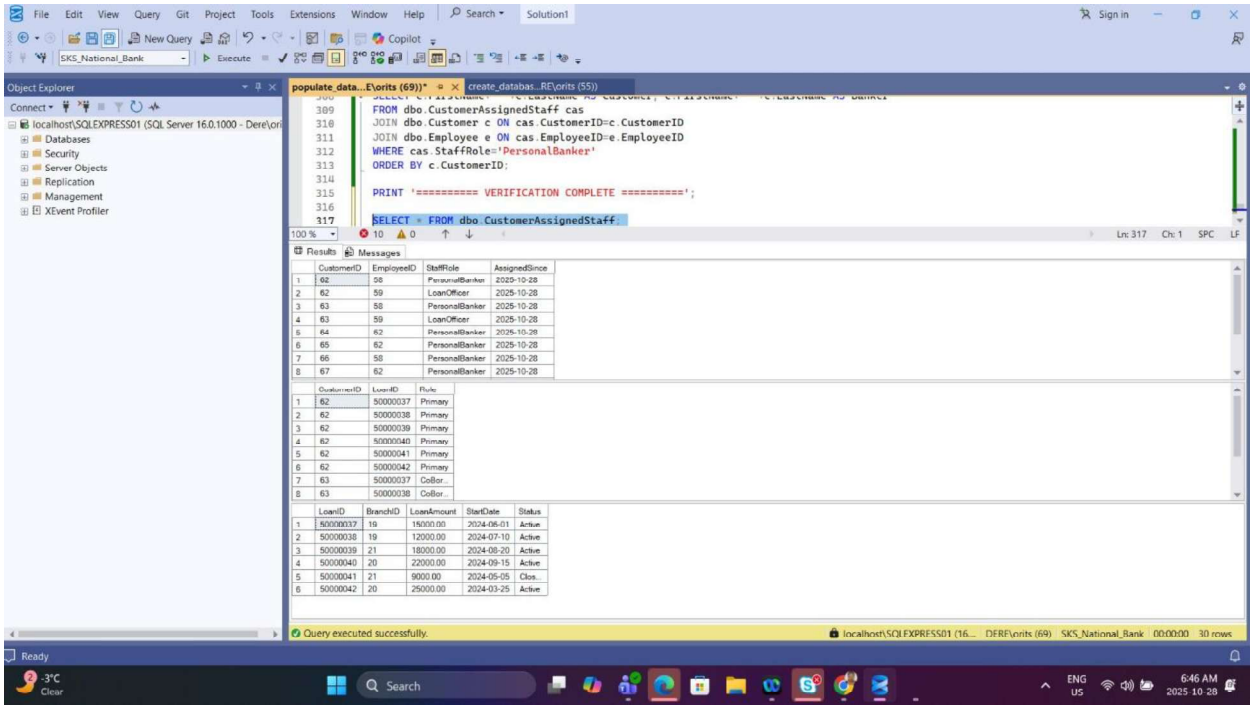
10) populate_database.sql Loan Table-CustomerAssigned Staff.Test



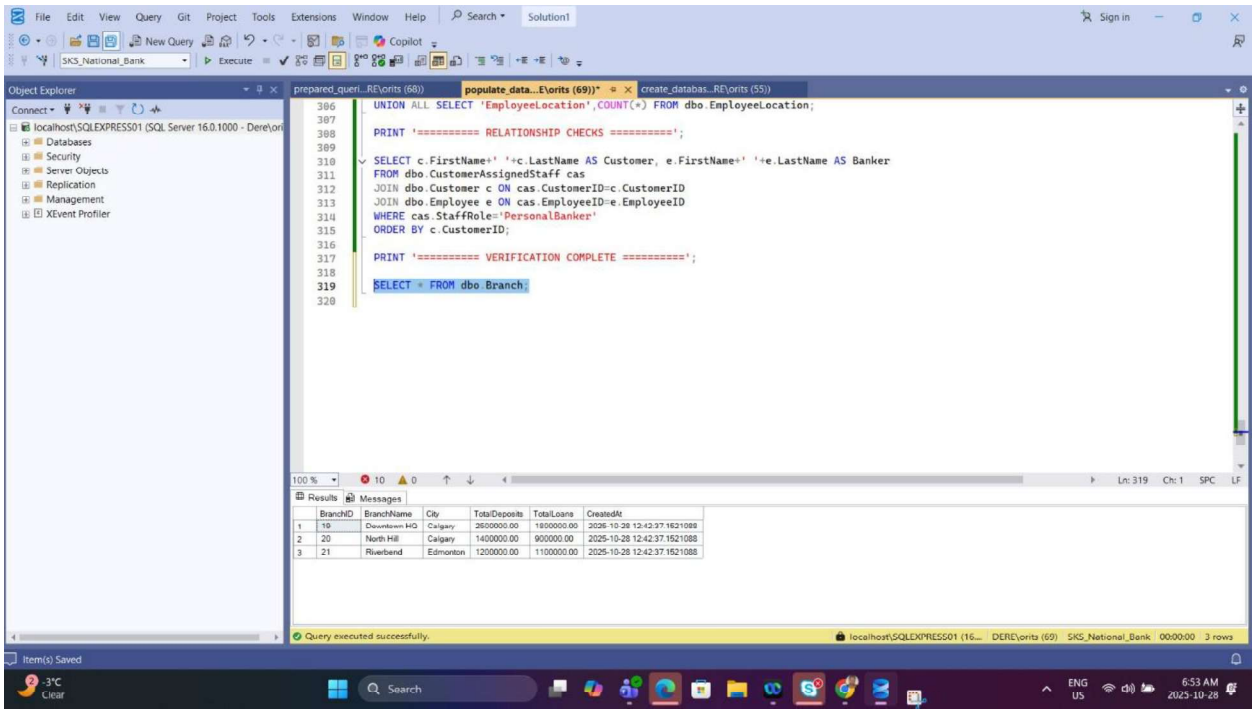
11) populate_database.sql Loan Table-Final Result



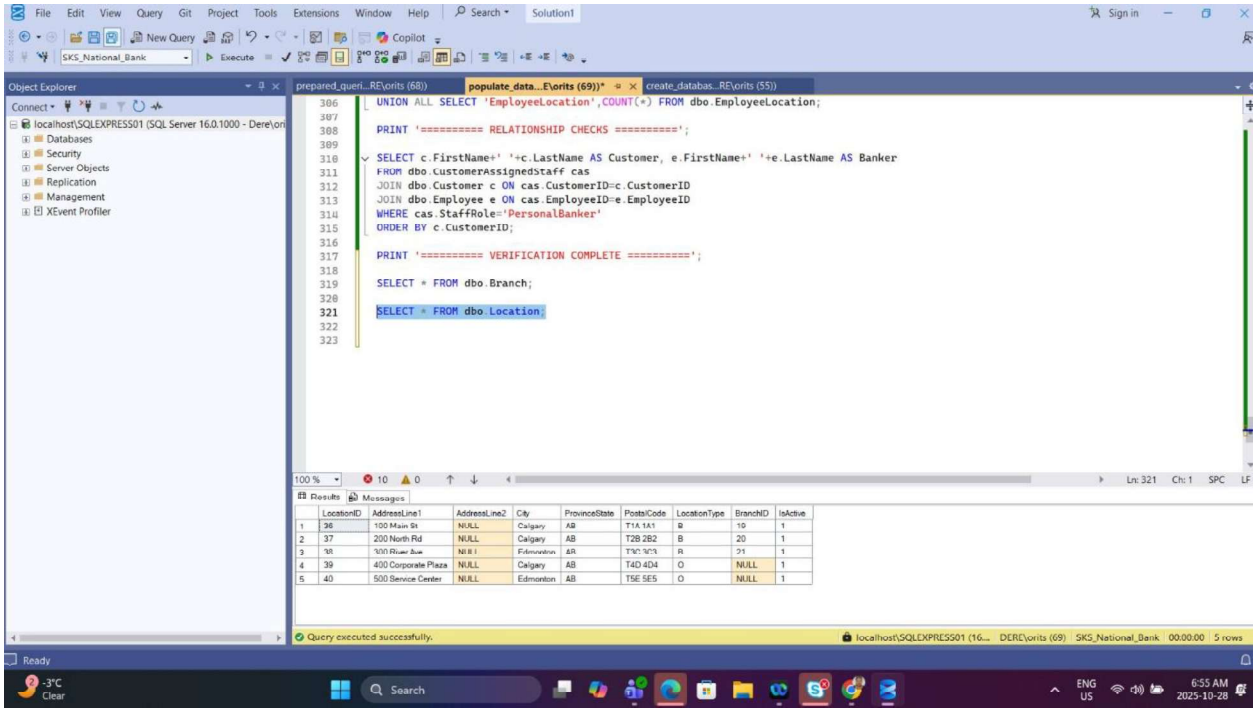
12) populate_database.sql Loan Table-Confirmation



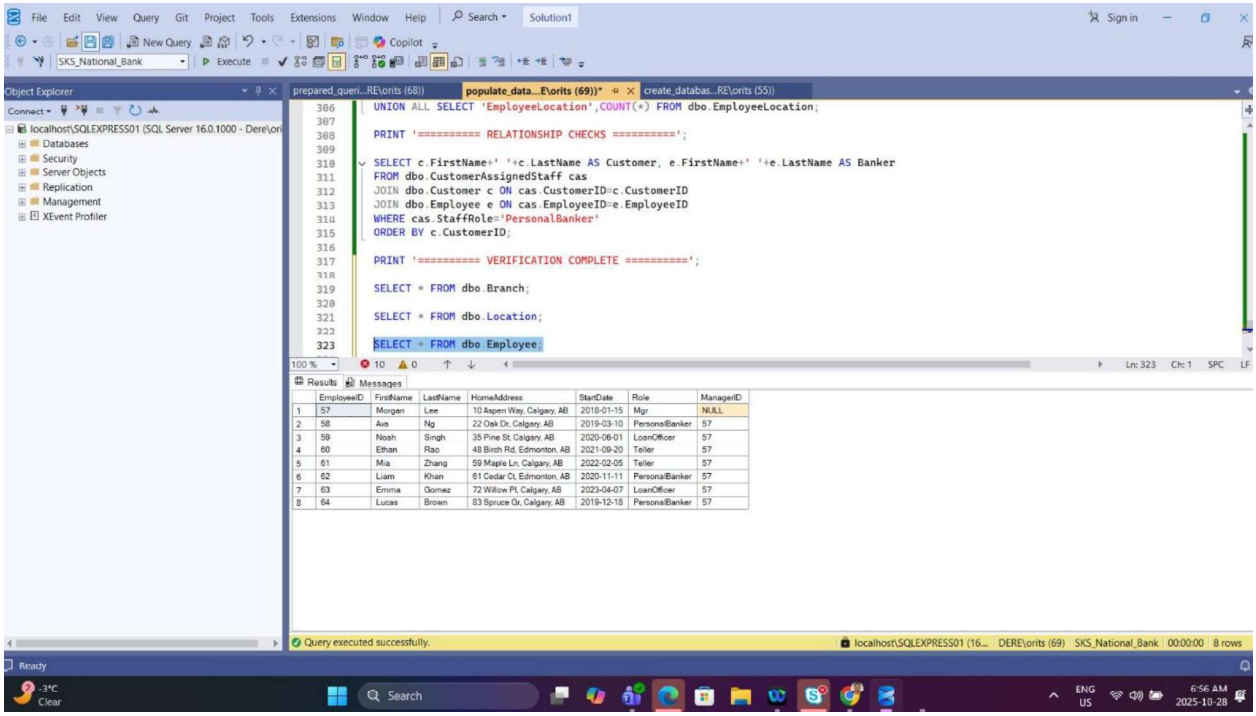
13) populate_database.sql TestBranch



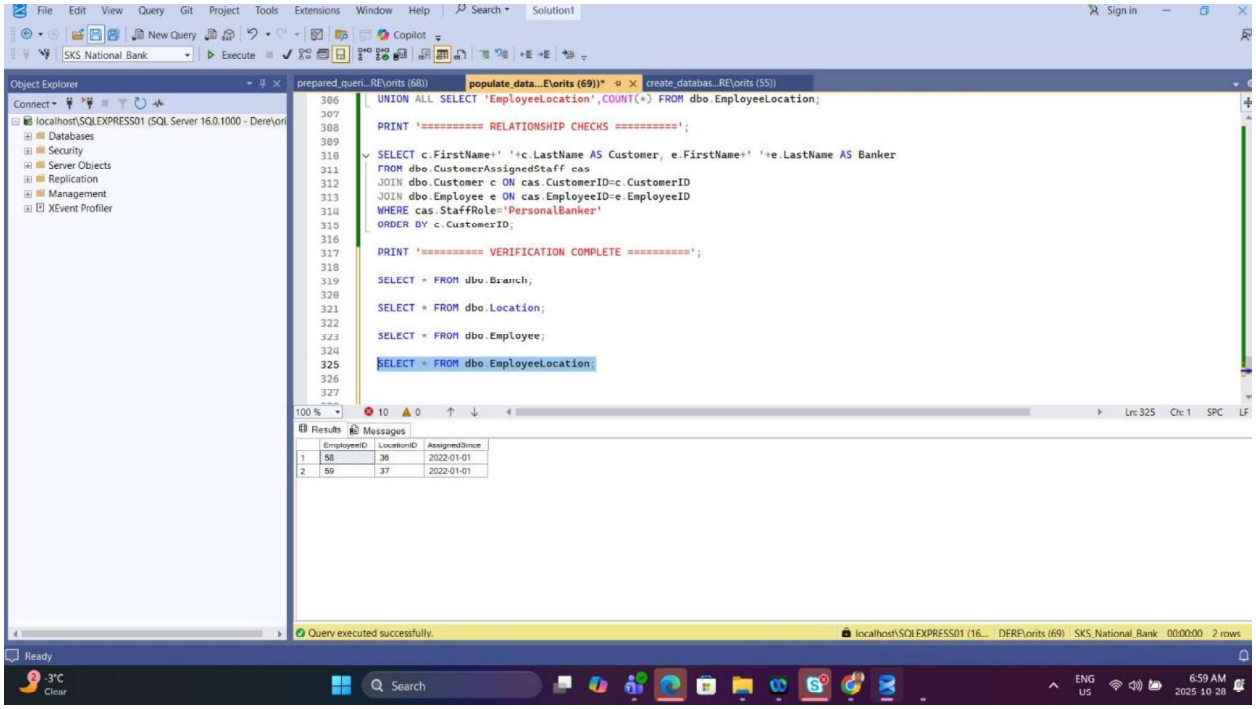
14) populate_database.sql TestLocation



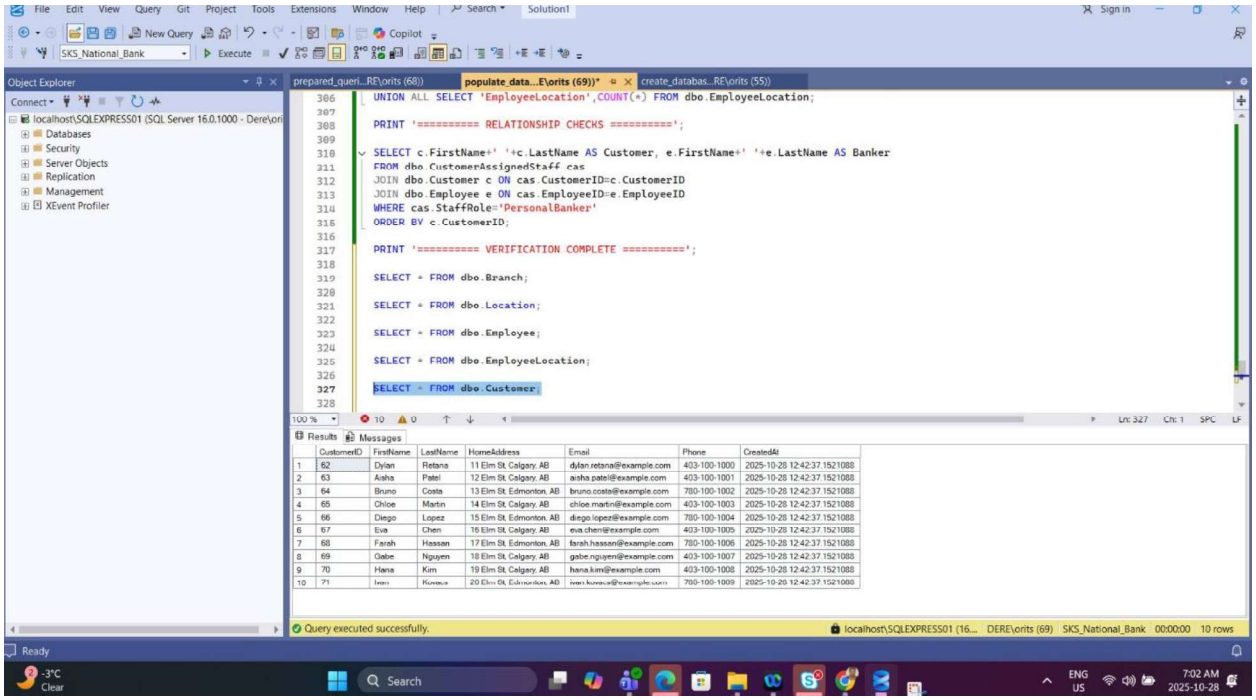
15) populate_database.sql TestEmployee



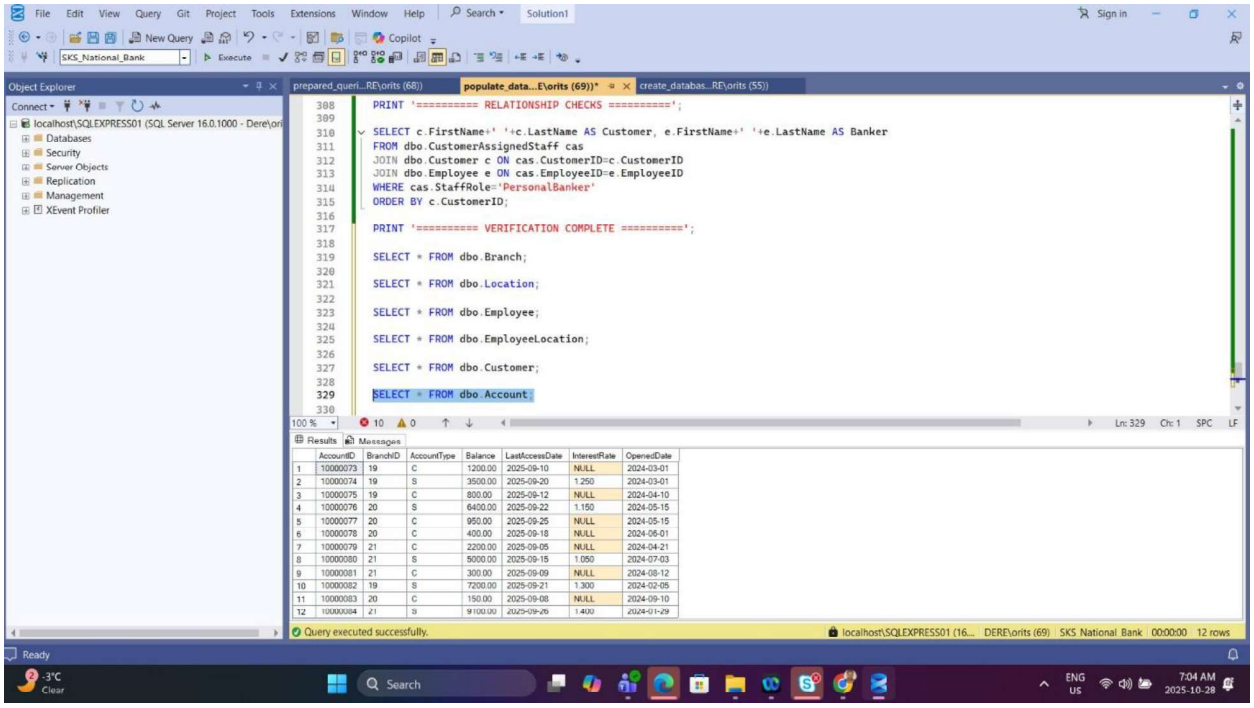
16) populate_database.sql EmployeeLocation



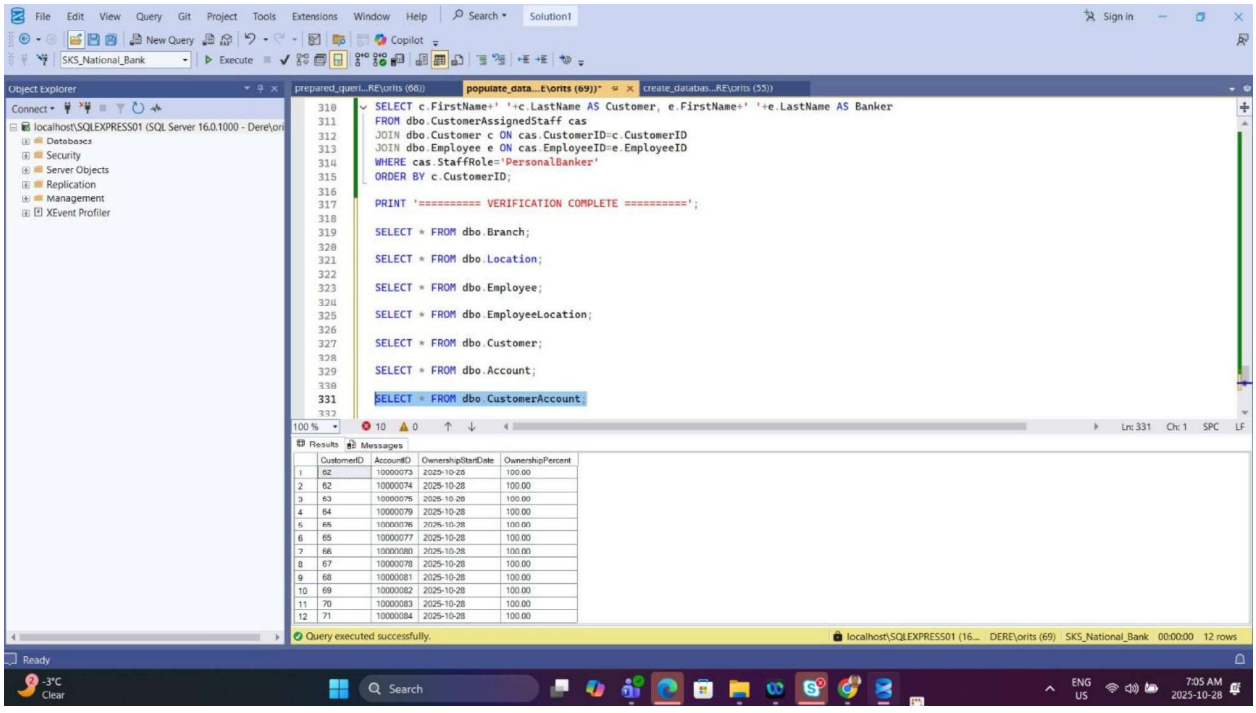
17) populate_database.sql Customer



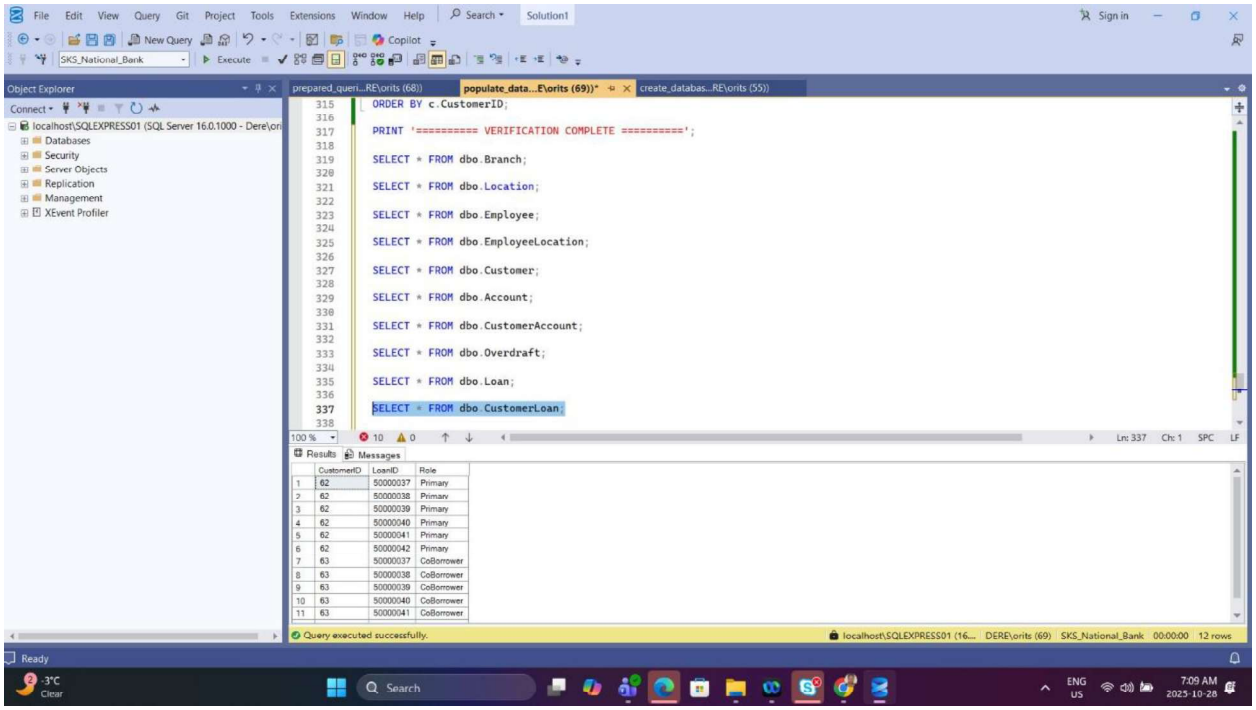
18) populate_database.sql Account



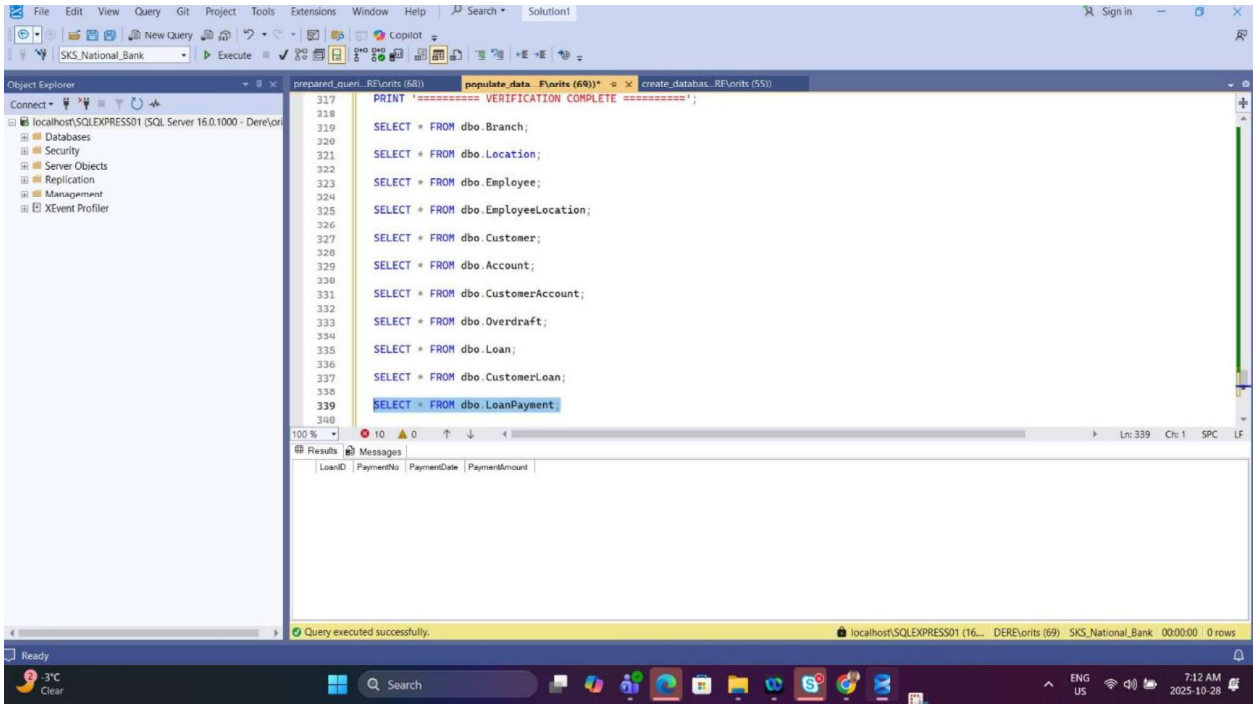
19) populate_database.sql CustomerAccount



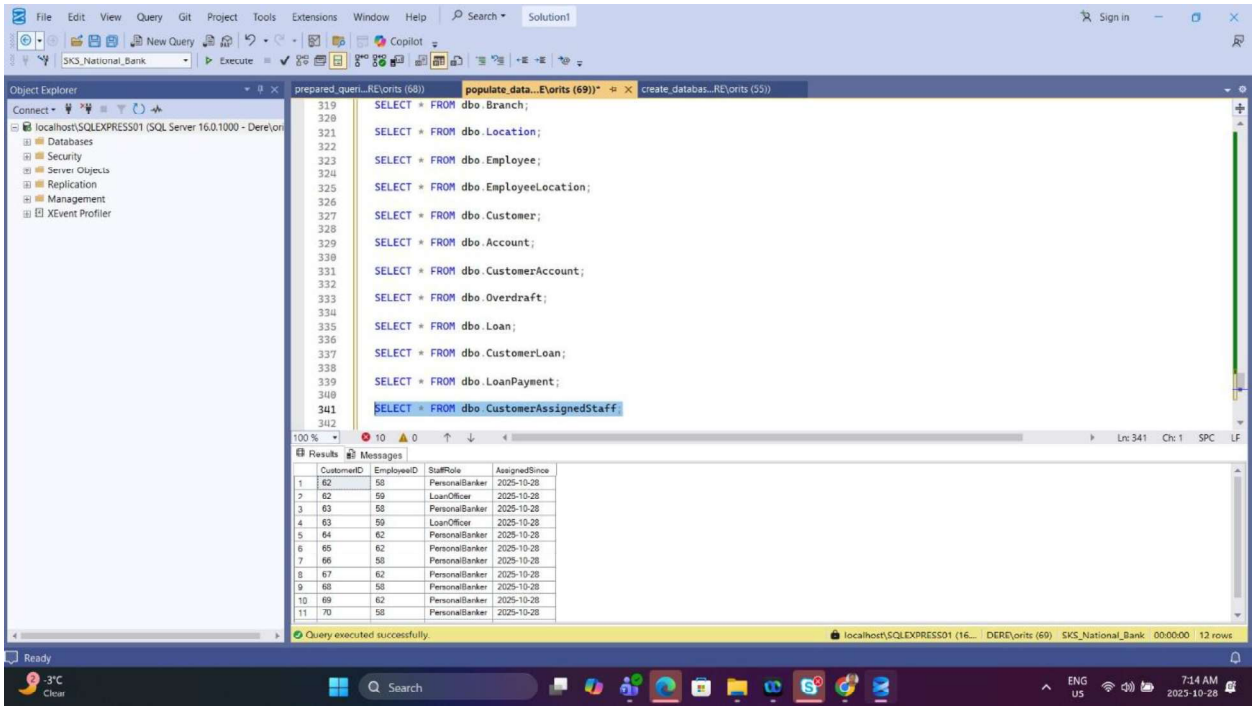
20) populate_database.sql CustomerLoan



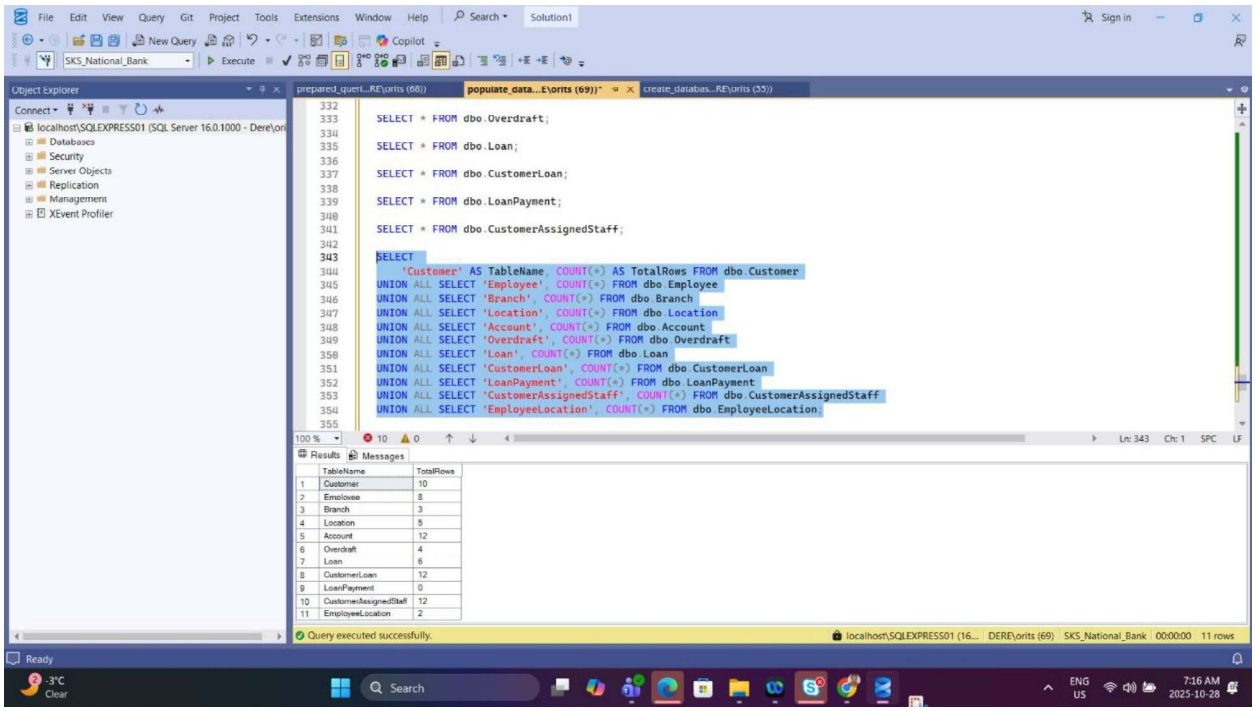
21) populate_database.sql LoanRepayment



22) populate_database.sql CustomerAssignedStaff

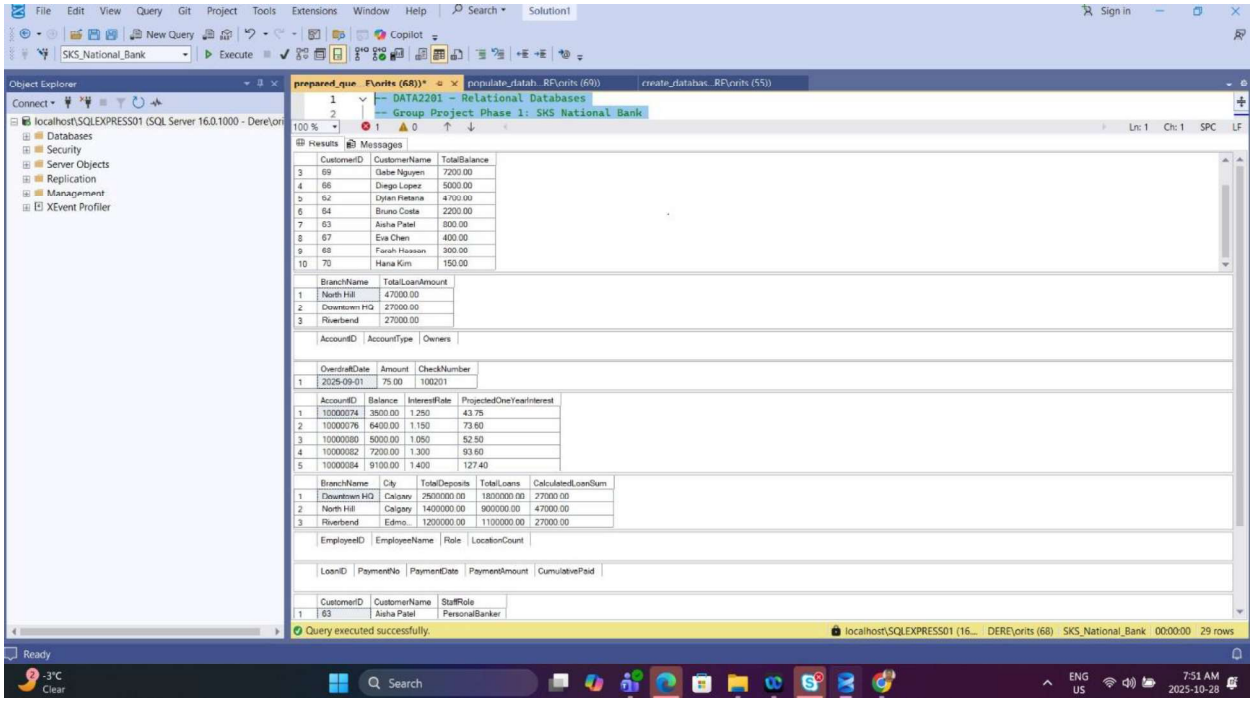


23) populate_database.sql Verification

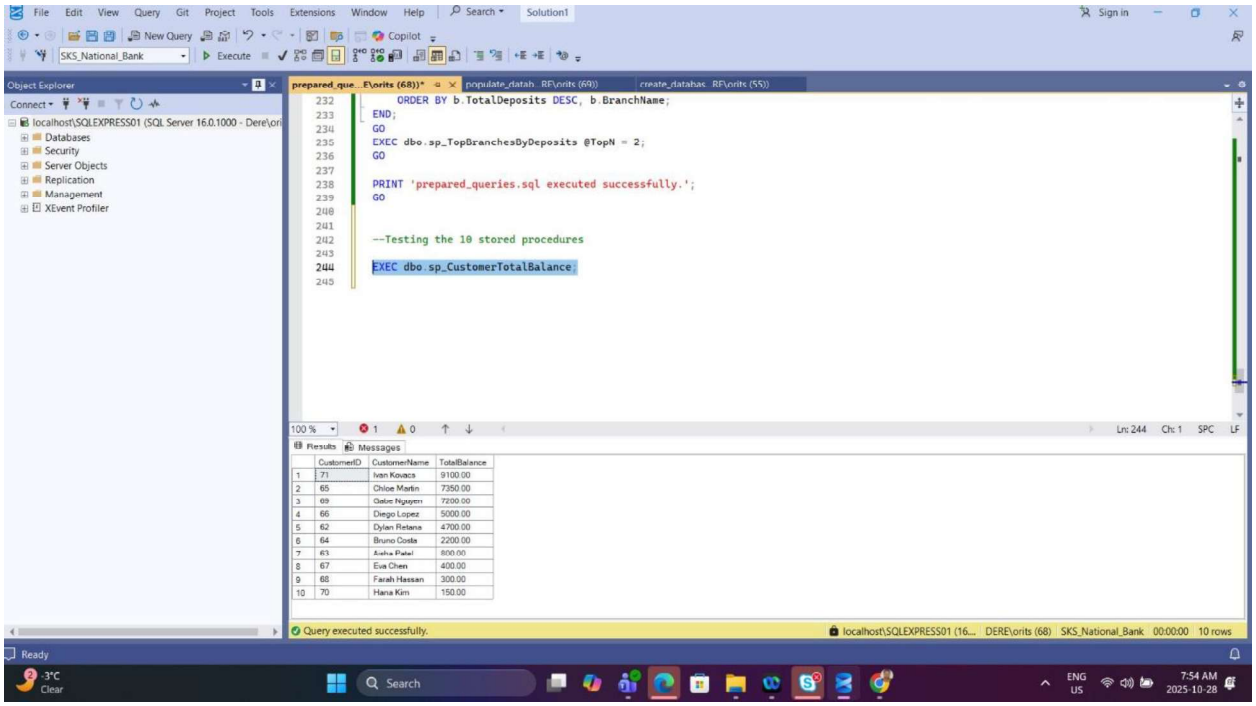


prepare_queries_database

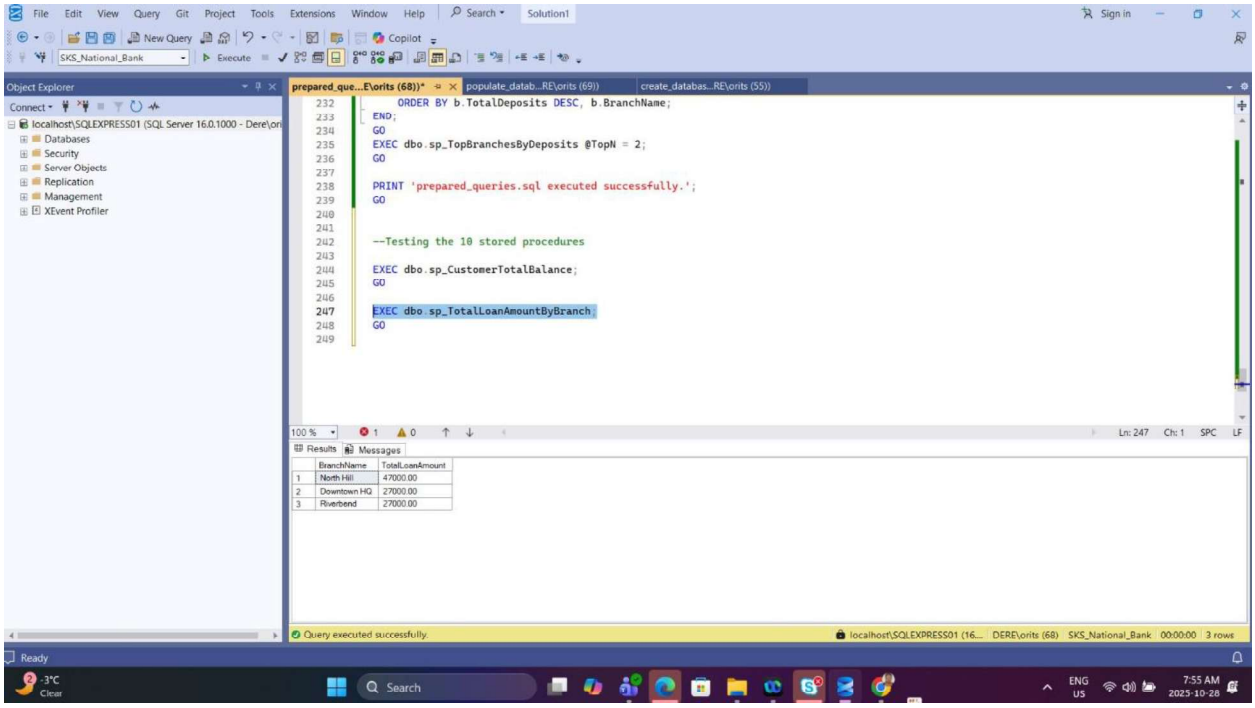
1) prepeare_queries.sql



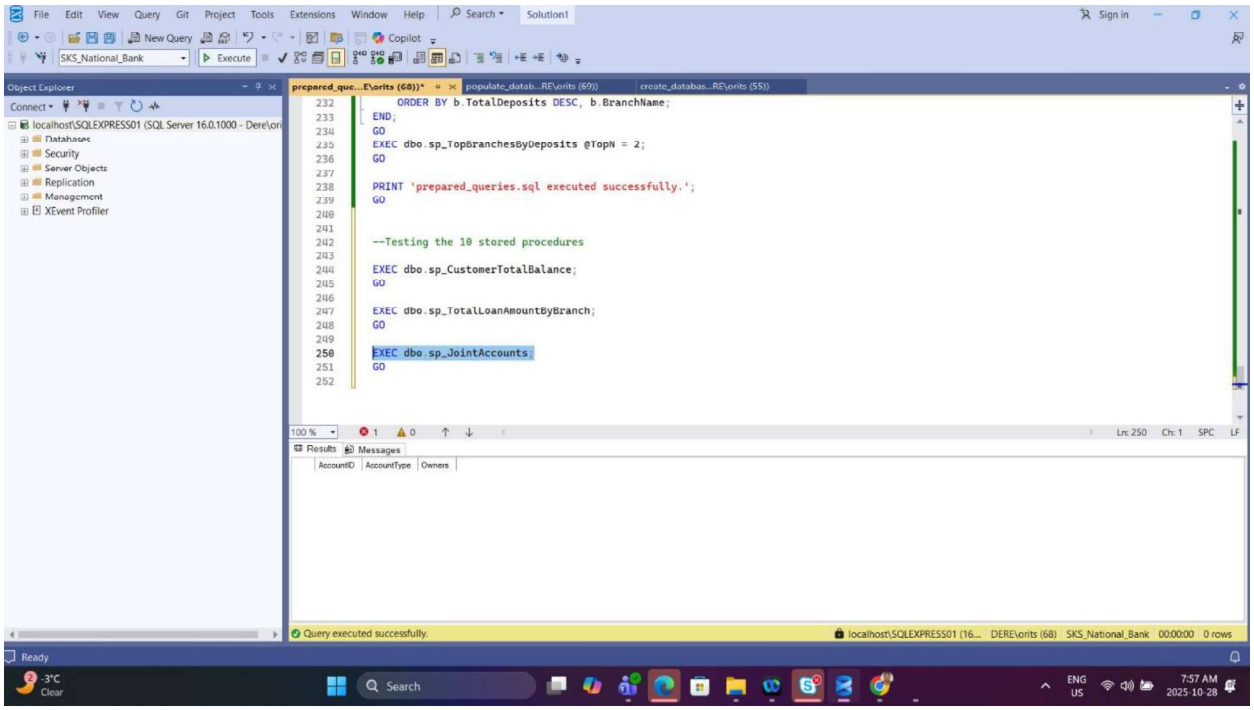
2) sp_CustomerTotalBalance



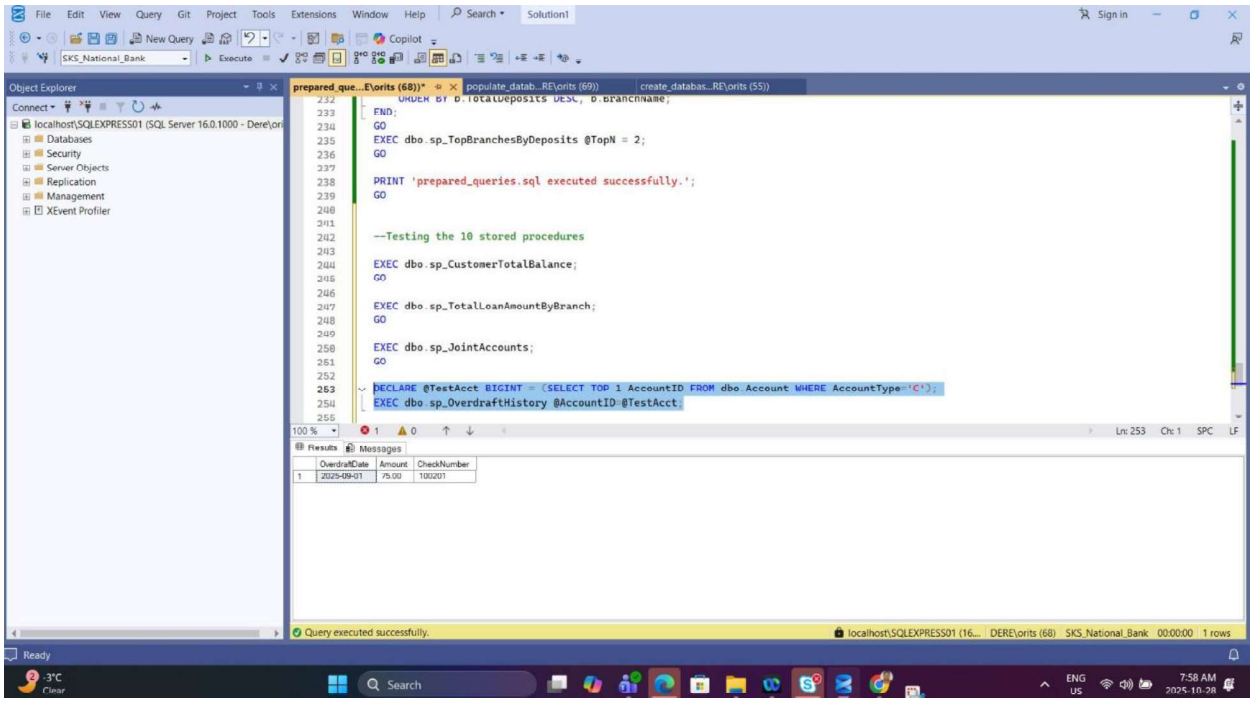
3) sp_TotalLoanAmountByBranch



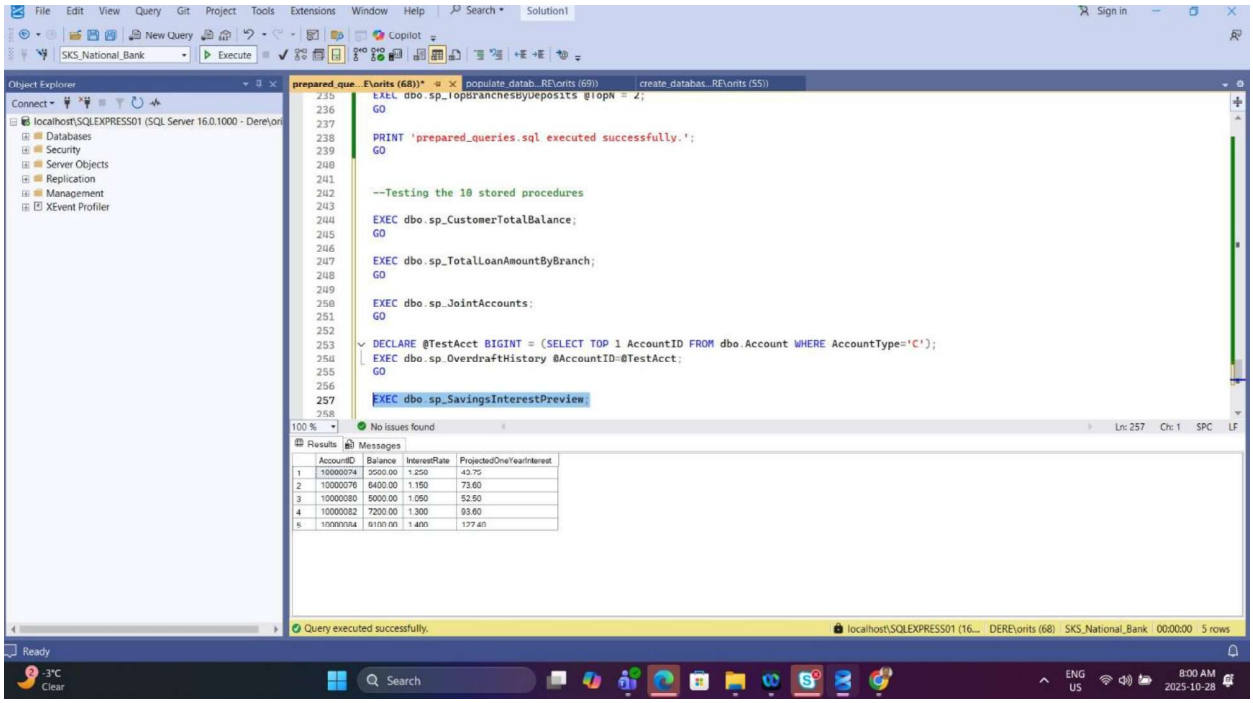
4) sp_JointAccounts



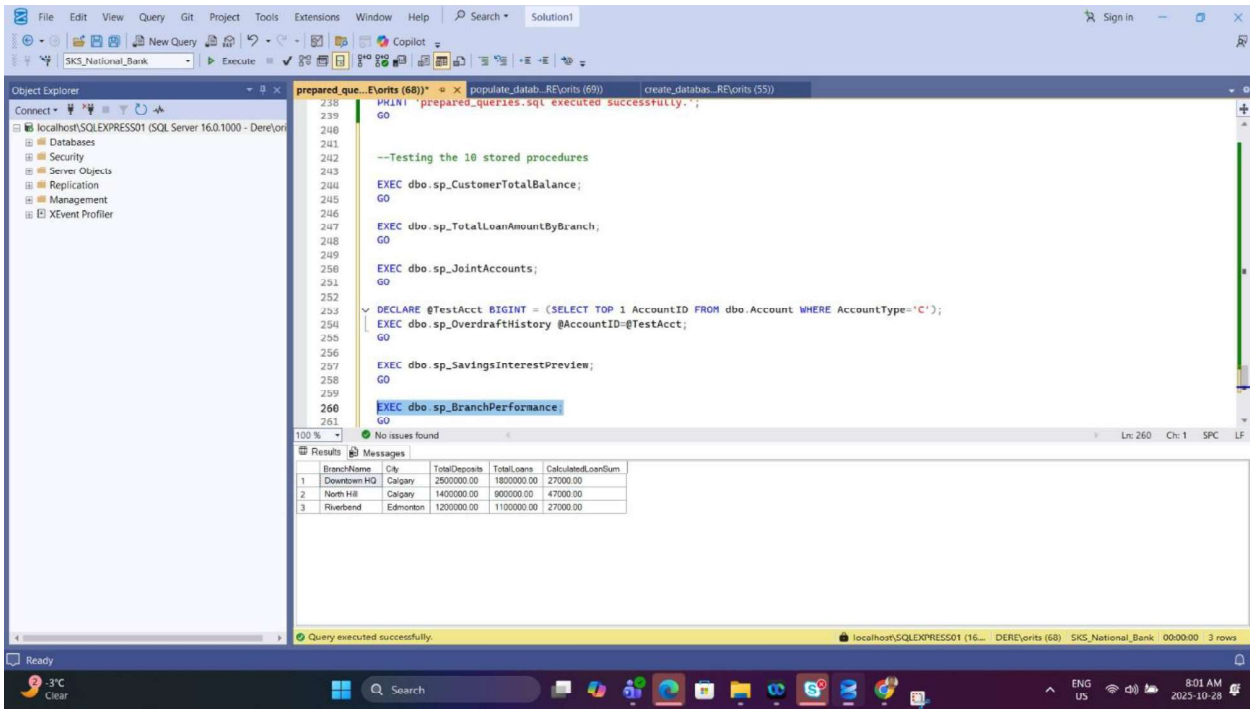
5) sp_OverdraftHistory



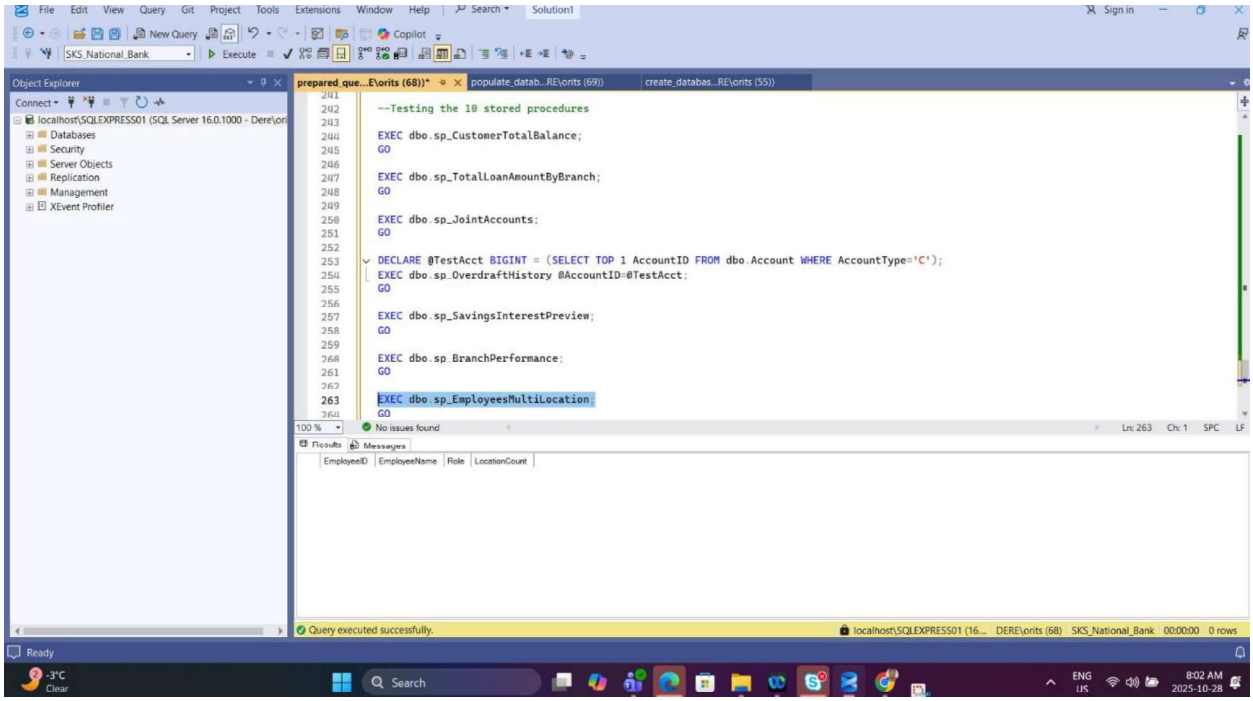
6) sp_SavingsInterestPreview



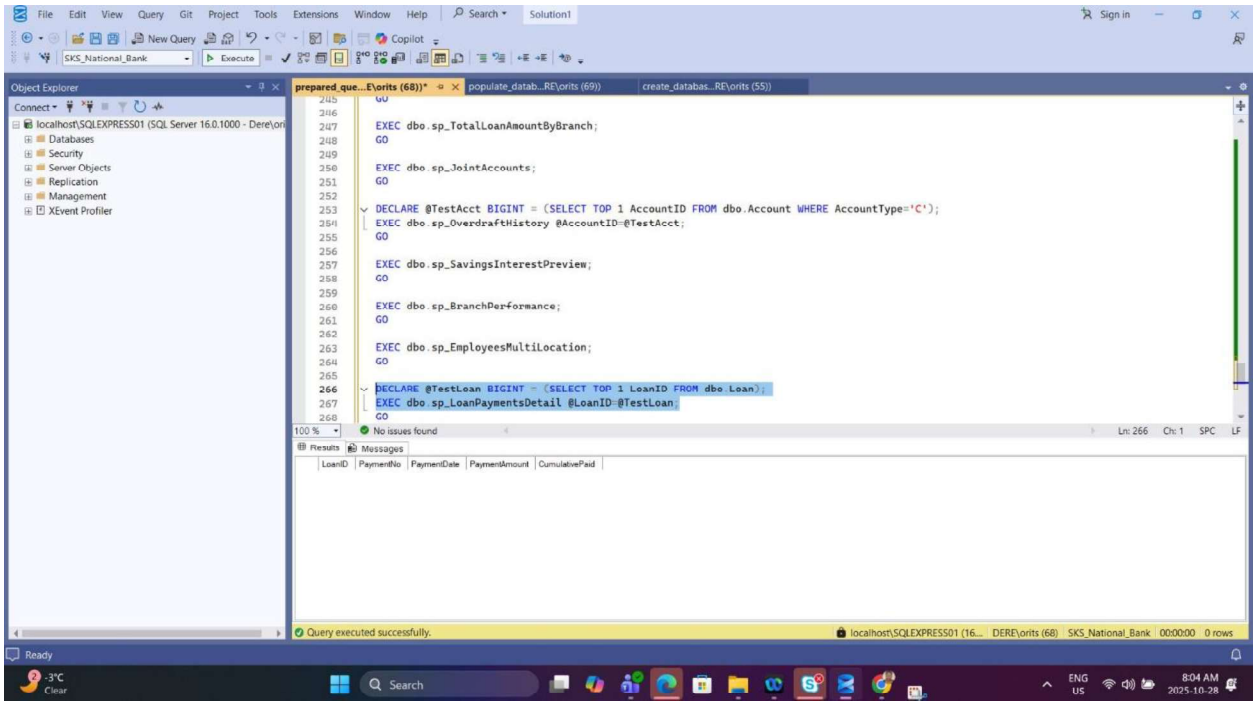
7) sp_BranchPerformance



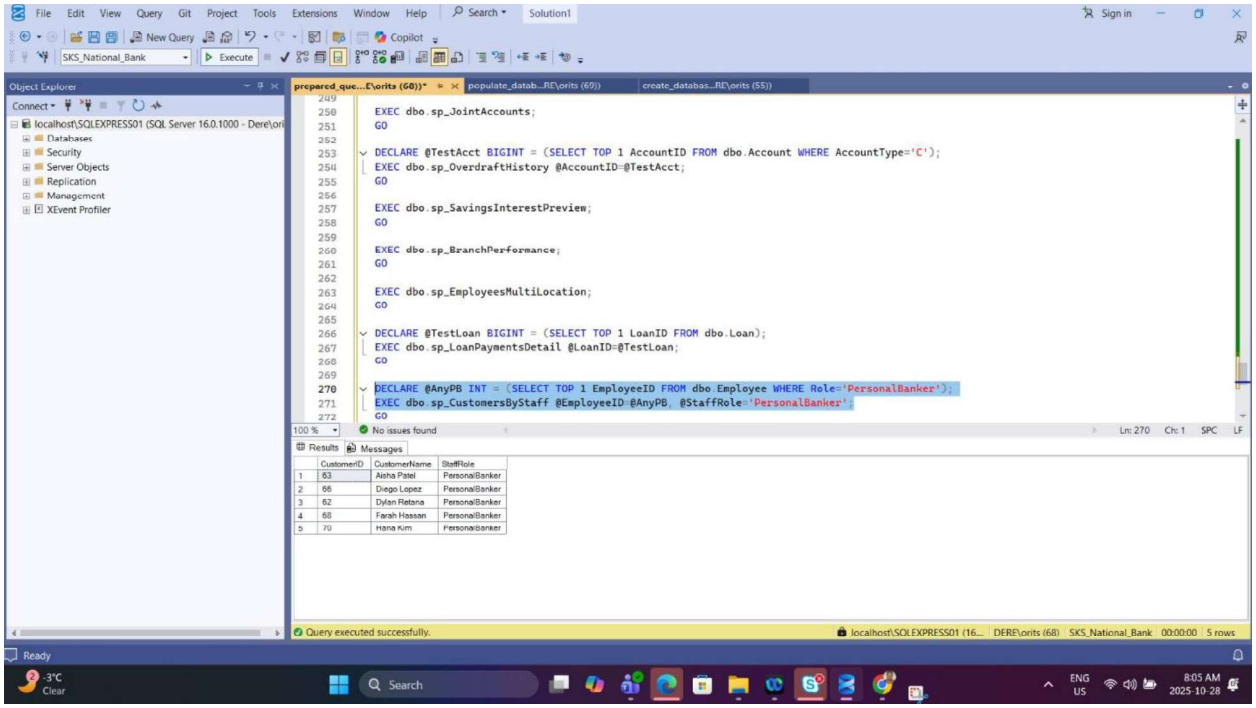
8) sp_EmployeesMultiLocation



9) sp_LoanPaymentsDetail



10) sp_CustomersByStaff



11) sp_TopBranchesByDeposits