Database Functions Assignment

Introduction;

This report demonstrates the creation and usage of SQL functions to retrieve data from the AdventureWorks database. The task involved creating:

1. A **Table-Valued Function** to find employees by job title and arrange them by vacation hours.
2. A **Scalar-Valued Function** to retrieve an employee's salary rate based on their Person ID.

Both functions were implemented, tested, and the results are documented below.

Table-Valued Function:

Objective:
This function retrieves employee details (FirstName, LastName, VacationHours) from the Employee and Person tables filtered by JobTitle and outputs the data unsorted. Sorting is applied during function execution.

SQL Code

```
CREATE FUNCTION dbo.GetEmployeesByJobTitle
(
@JobTitle NVARCHAR(50) -- Input parameter for the job title
)
RETURNS TABLE
AS
RETURN
(
SELECT
p.FirstName,
p.LastName,
e.VacationHours
FROM
```

HumanResources.Employee e

INNER JOIN

Person.Person p

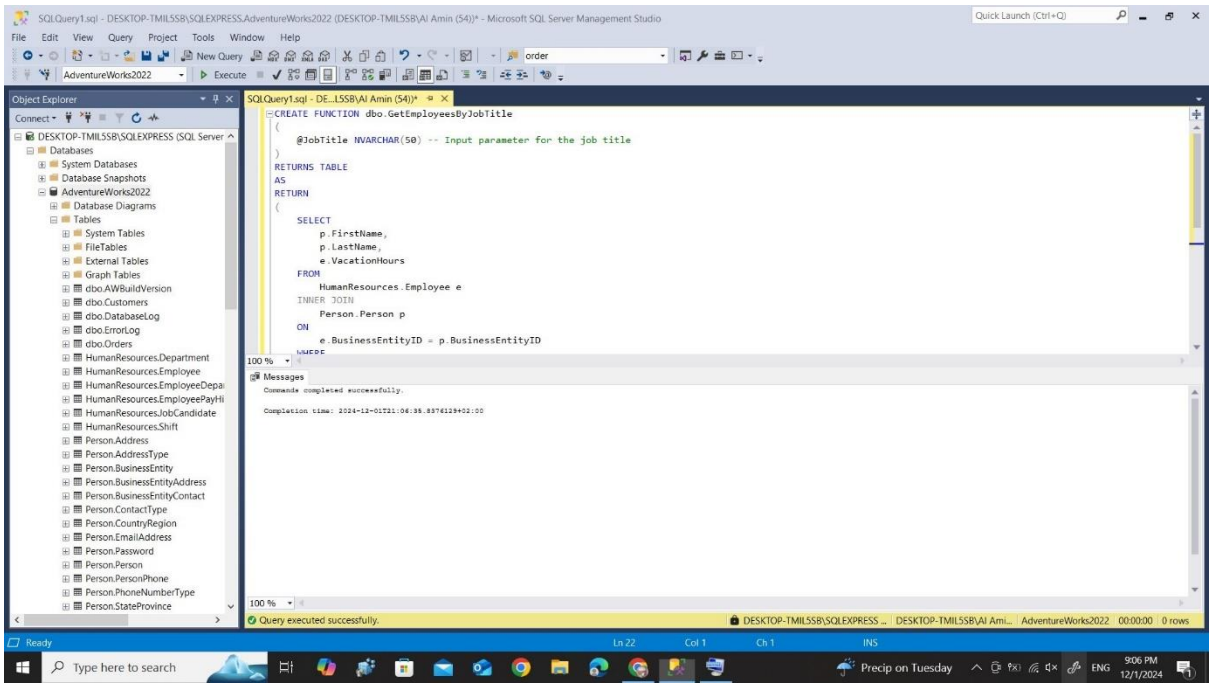
ON

e.BusinessEntityID = p.BusinessEntityID

WHERE

e.JobTitle = @JobTitle -- Filters by the specified job title

);



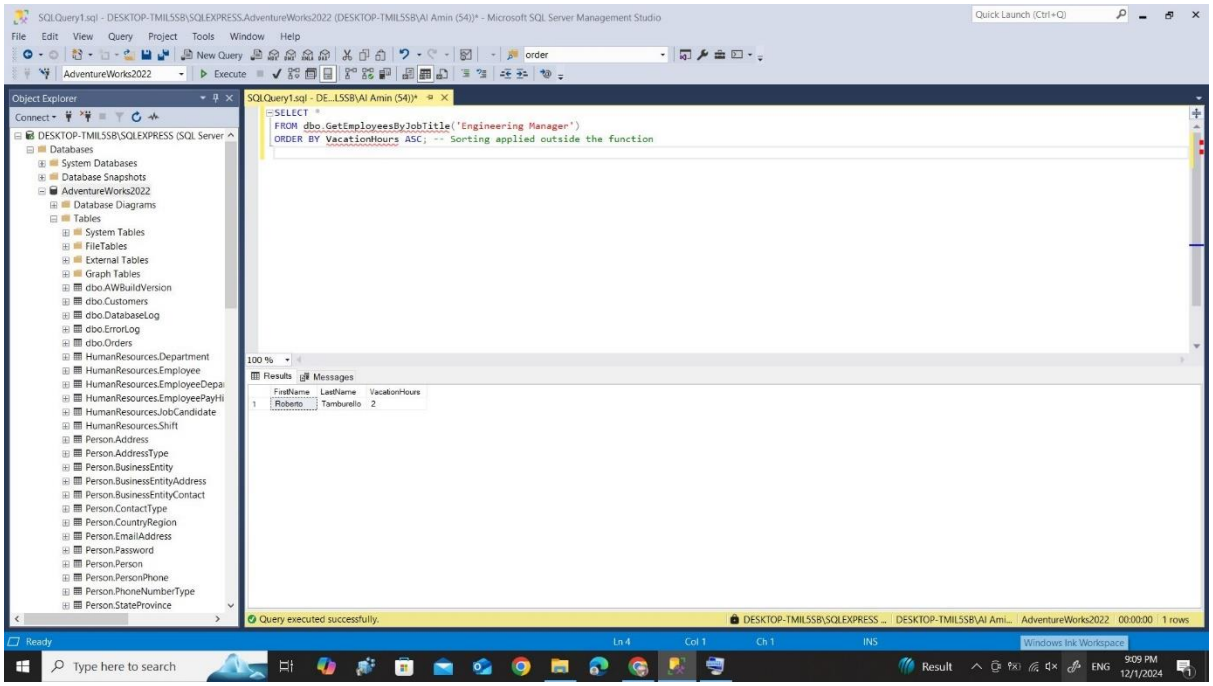
Execution Example:

SELECT *

FROM dbo.GetEmployeesByJobTitle('Engineering Manager')

ORDER BY VacationHours ASC; -- Sorting applied here

Screenshot of Results:



Scalar-Valued Function:

Objective:

This function retrieves the salary rate (Rate) of an employee from the EmployeePayHistory table based on their PersonID.

SQL Code

```
CREATE FUNCTION dbo.GetEmployeeSalaryRate
(
@PersonID INT -- Input parameter for the person's ID
)
RETURNS DECIMAL(10, 2)
AS
BEGIN
DECLARE @SalaryRate DECIMAL(10, 2); -- Variable to store the salary rate

SELECT
@SalaryRate = eph.Rate
```

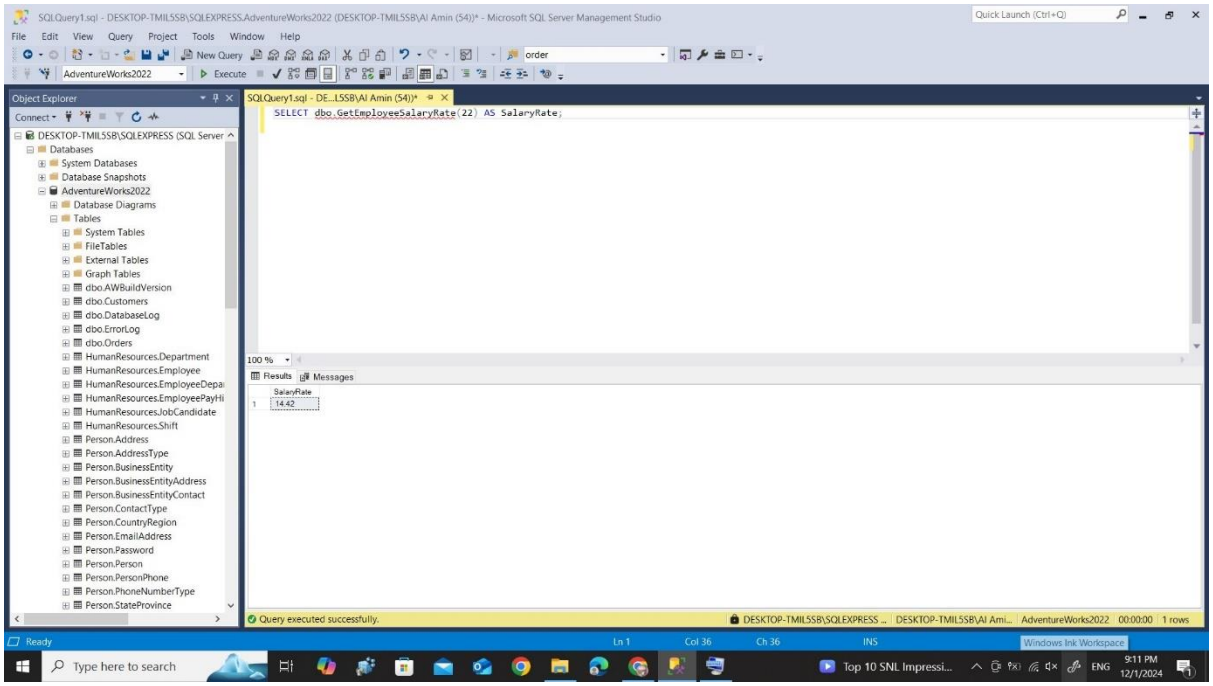
```
FROM
HumanResources.EmployeePayHistory eph
INNER JOIN
HumanResources.Employee e
ON
eph.BusinessEntityID = e.BusinessEntityID
WHERE
e.BusinessEntityID = @PersonID;

RETURN @SalaryRate;
END;
```

Execution Example

```
SELECT dbo.GetEmployeeSalaryRate(1) AS SalaryRate;
```

Screenshot of Results:



Conclusion:

Both functions were successfully created and tested. The following were accomplished:

1. **Table-Valued Function:** Retrieves employee details filtered by JobTitle, and sorting is applied during execution.
2. **Scalar-Valued Function:** Retrieves the salary rate of an employee based on their PersonID.

The screenshots of the test results are attached for reference.