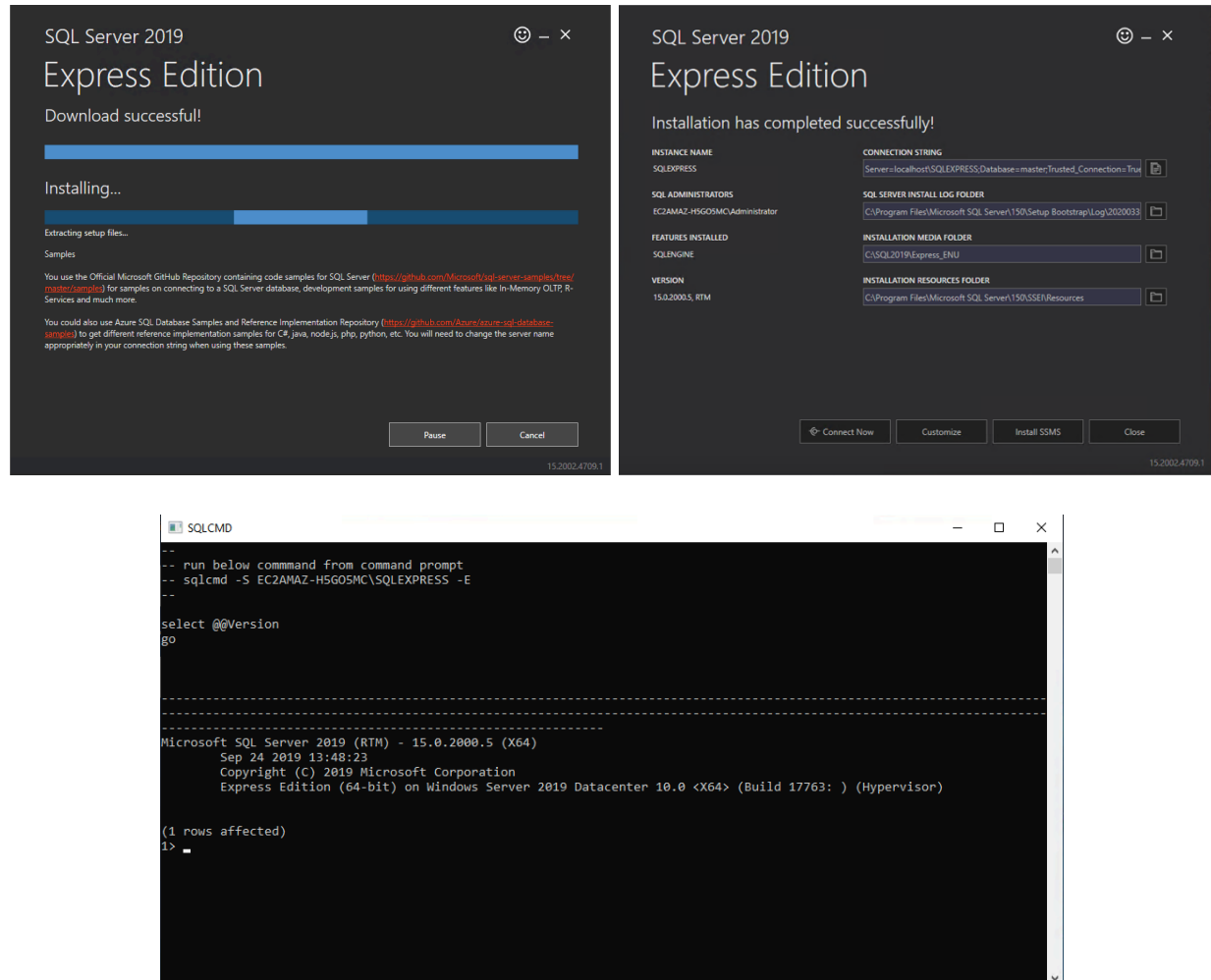


MSDE631 - Lab 2

Etana Disasa

Part 1: Part 1 - Installing and using the MS SQL Server Environment

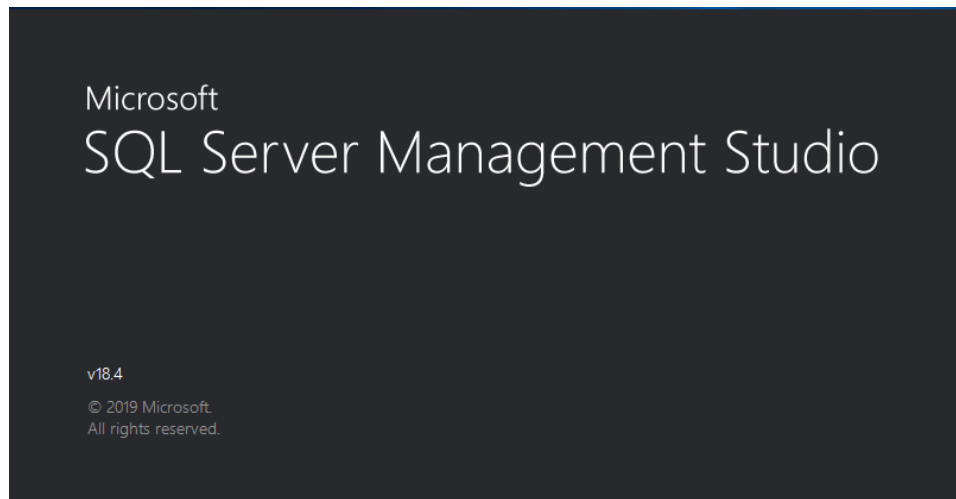
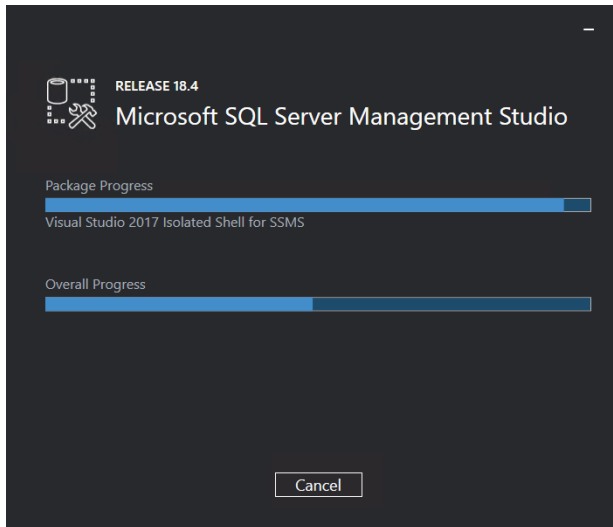
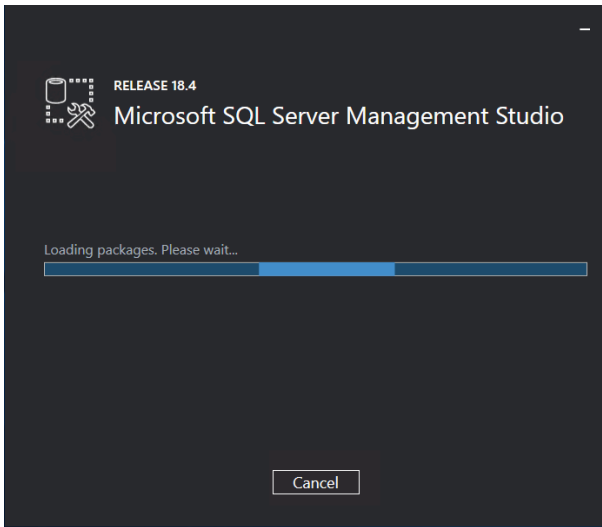
Installing SQL Server 2019



MSDE631 - Lab 2

Etana Disasa

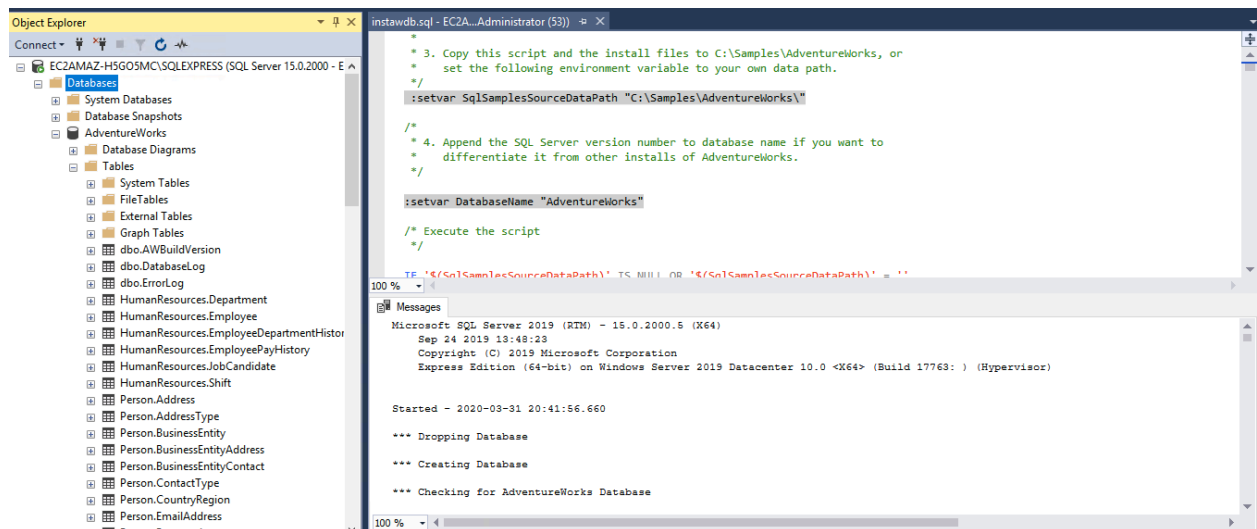
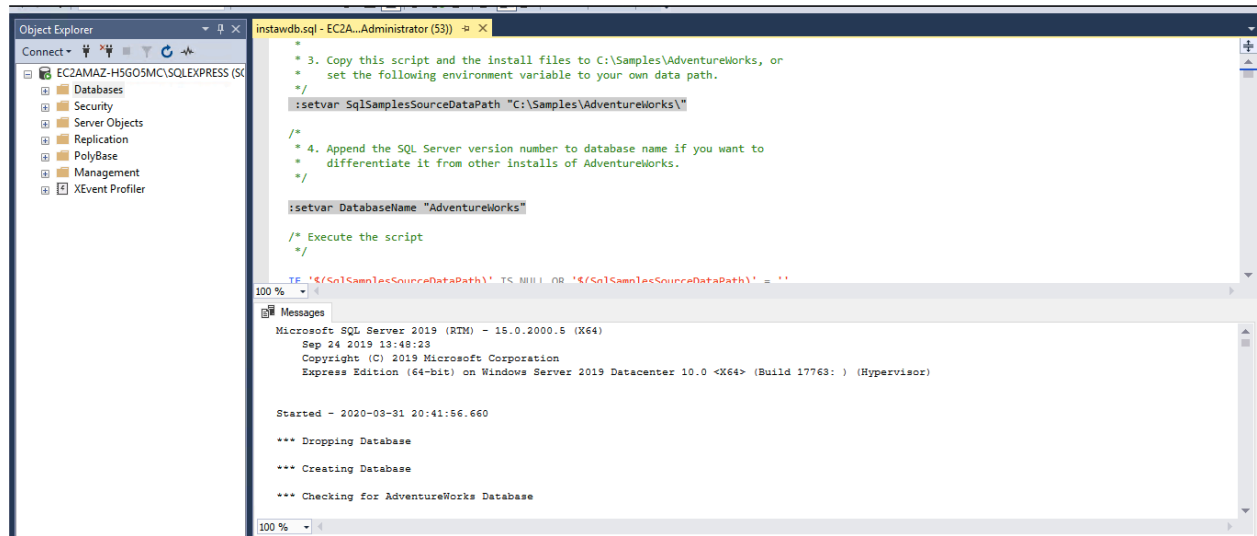
Install and Use SSMS



MSDE631 - Lab 2

Etana Disasa

Install the Adventure Works Database



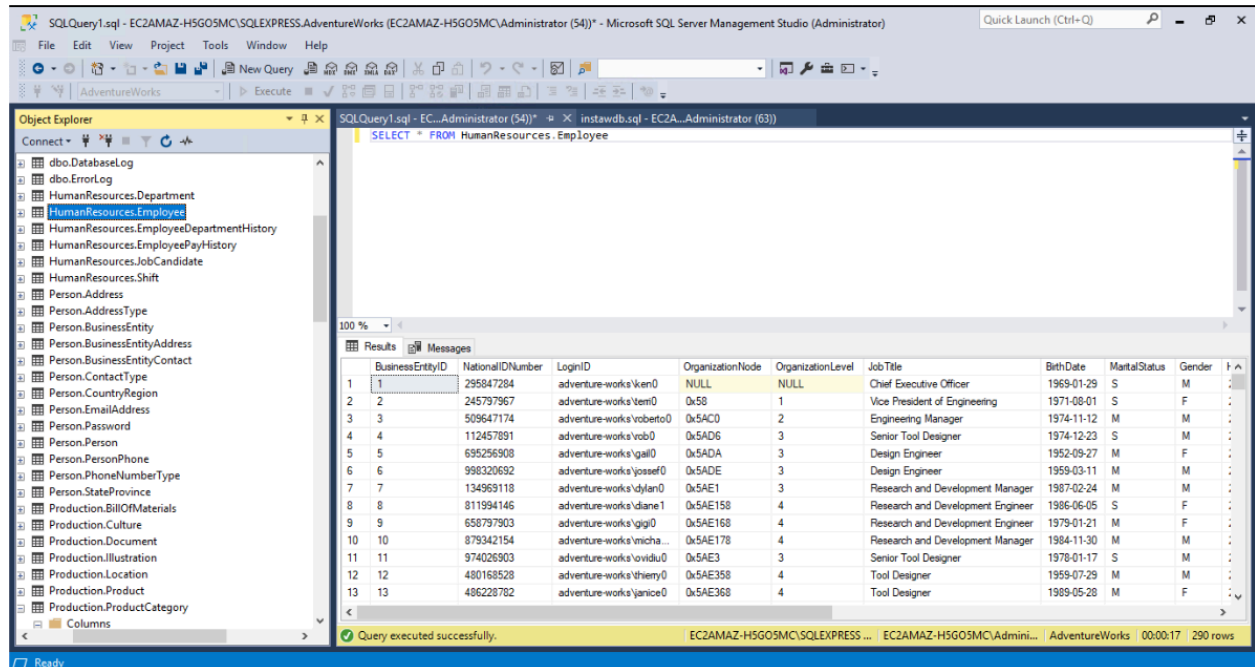
End Part 1

MSDE631 - Lab 2

Etana Disasa

Part 2: Query MS SQL Server Using SSMS to Query Data

```
SELECT * FROM HumanResources.Employee
```



The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The top menu bar includes File, Edit, View, Project, Tools, Window, and Help. The toolbar contains various icons for file operations, query execution, and formatting. The Object Explorer on the left shows the database structure, with the 'HumanResources' database selected and the 'Employee' table highlighted. The central query window contains the SQL statement: `SELECT * FROM HumanResources.Employee`. The Results pane at the bottom shows the query output as a table with 13 rows and 9 columns. The status bar at the bottom indicates 'Query executed successfully.' and '290 rows'.

	BusinessEntityID	NationalIDNumber	LoginID	OrganizationNode	OrganizationLevel	JobTitle	BirthDate	MaritalStatus	Gender
1	1	295847284	adventure-works\ken0	NULL	NULL	Chief Executive Officer	1969-01-29	S	M
2	2	245797967	adventure-works\ven0	0x58	1	Vice President of Engineering	1971-08-01	S	F
3	3	509647174	adventure-works\vobeto0	0x5AC0	2	Engineering Manager	1974-11-12	M	M
4	4	112457891	adventure-works\vrob0	0x5AD6	3	Senior Tool Designer	1974-12-23	S	M
5	5	695256908	adventure-works\gail0	0x5ADA	3	Design Engineer	1952-09-27	M	F
6	6	998320692	adventure-works\josel0	0x5ADE	3	Design Engineer	1959-03-11	M	M
7	7	134963118	adventure-works\dylan0	0x5AE1	3	Research and Development Manager	1987-02-24	M	M
8	8	811994146	adventure-works\diane1	0x5AE158	4	Research and Development Engineer	1986-06-05	S	F
9	9	658797903	adventure-works\gigi0	0x5AE168	4	Research and Development Engineer	1979-01-21	M	F
10	10	879342154	adventure-works\micha...	0x5AE178	4	Research and Development Manager	1984-11-30	M	M
11	11	974026903	adventure-works\ovidu0	0x5AE3	3	Senior Tool Designer	1978-01-17	S	M
12	12	480168528	adventure-works\thieny0	0x5AE358	4	Tool Designer	1959-07-29	M	M
13	13	486228782	adventure-works\janice0	0x5AE368	4	Tool Designer	1989-05-28	M	F

MSDE631 - Lab 2

Etana Disasa

```
SELECT JobTitle, HireDate, Gender  
FROM HumanResources.Employee
```

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The 'Object Explorer' on the left shows the database structure, with 'HumanResources.Employee' selected. The 'Query Editor' in the center contains the SQL query: `SELECT JobTitle, HireDate, Gender FROM HumanResources.Employee`. The 'Results' pane at the bottom shows the output of the query, which is a table with 14 rows and 3 columns: JobTitle, HireDate, and Gender. The status bar at the bottom indicates that the query was executed successfully and returned 290 rows.

	JobTitle	HireDate	Gender
1	Chief Executive Officer	2009-01-14	M
2	Vice President of Engineering	2008-01-31	F
3	Engineering Manager	2007-11-11	M
4	Senior Tool Designer	2007-12-05	M
5	Design Engineer	2008-01-06	F
6	Design Engineer	2008-01-24	M
7	Research and Development Manager	2009-02-08	M
8	Research and Development Engineer	2008-12-29	F
9	Research and Development Engineer	2009-01-16	F
10	Research and Development Manager	2009-05-03	M
11	Senior Tool Designer	2010-12-05	M
12	Tool Designer	2007-12-11	M
13	Tool Designer	2010-12-23	F
14	Senior Design Engineer	2010-12-30	M

MSDE631 - Lab 2

Etana Disasa

```
SELECT JobTitle, HireDate, Gender
FROM HumanResources.Employee
WHERE JobTitle like '%Marketing%'
```

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the connection is to 'AdventureWorks' on 'EC2AMAZ-H5G05MC\SQLEXPRESS'. The 'Object Explorer' on the left shows the database structure, including 'HumanResources.Employee'. The 'Query Editor' in the center contains the following SQL query:

```
SELECT JobTitle, HireDate, Gender
FROM HumanResources.Employee
WHERE JobTitle like '%Marketing%'
```

The 'Results' pane at the bottom shows the output of the query, which consists of 9 rows of data. The status bar at the bottom indicates 'Query executed successfully.' and '9 rows'.

	JobTitle	HireDate	Gender
1	Marketing Manager	2007-12-20	M
2	Marketing Assistant	2007-01-26	M
3	Marketing Specialist	2011-02-07	M
4	Marketing Assistant	2011-02-14	F
5	Marketing Assistant	2011-01-07	F
6	Marketing Specialist	2009-03-02	M
7	Marketing Specialist	2008-12-12	M
8	Marketing Specialist	2009-01-12	F
9	Marketing Specialist	2009-01-18	F

MSDE631 - Lab 2

Etana Disasa

```
SELECT JobTitle, HireDate, Gender
FROM HumanResources.Employee
WHERE JobTitle like '%MARKETING%'
```

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the connection to 'AdventureWorks' on 'EC2AMAZ-H5G05MC\SQLEXPRESS'. The 'Object Explorer' on the left shows the database structure, including tables like 'HumanResources.Employee'. The 'Query Editor' in the center contains the following SQL query:

```
SELECT JobTitle, HireDate, Gender
FROM HumanResources.Employee
WHERE JobTitle like '%MARKETING%'
```

The 'Results' pane at the bottom shows the output of the query, displaying 9 rows of data. The columns are 'JobTitle', 'HireDate', and 'Gender'.

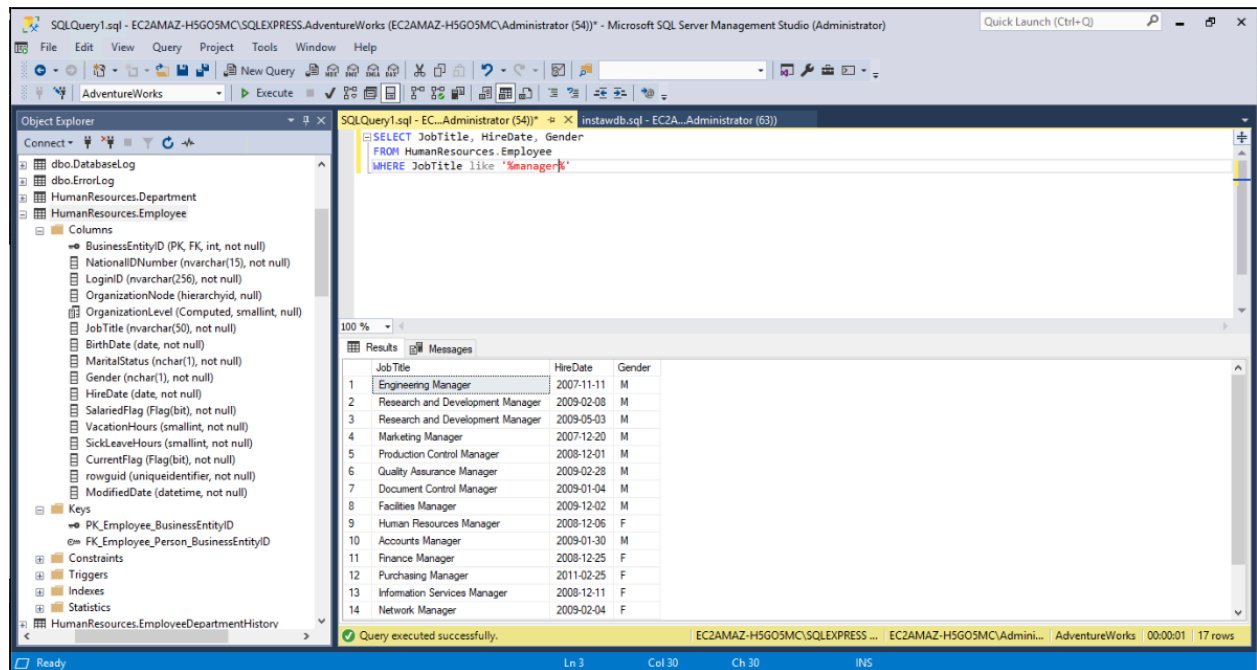
	JobTitle	HireDate	Gender
1	Marketing Manager	2007-12-20	M
2	Marketing Assistant	2007-01-26	M
3	Marketing Specialist	2011-02-07	M
4	Marketing Assistant	2011-02-14	F
5	Marketing Assistant	2011-01-07	F
6	Marketing Specialist	2009-03-02	M
7	Marketing Specialist	2008-12-12	M
8	Marketing Specialist	2009-01-12	F
9	Marketing Specialist	2009-01-18	F

The status bar at the bottom indicates 'Query executed successfully.' and shows the execution time as '00:00:01' for 9 rows.

MSDE631 - Lab 2

Etana Disasa

```
SELECT JobTitle, HireDate, Gender
FROM HumanResources.Employee
WHERE JobTitle like '%manager%'
```



The screenshot shows the Microsoft SQL Server Management Studio (SSMS) interface. The query editor displays the following SQL query:

```
SELECT JobTitle, HireDate, Gender
FROM HumanResources.Employee
WHERE JobTitle like '%manager%'
```

The query has been executed successfully, and the results are shown in the Results pane. The results table contains 17 rows of data, including JobTitle, HireDate, and Gender.

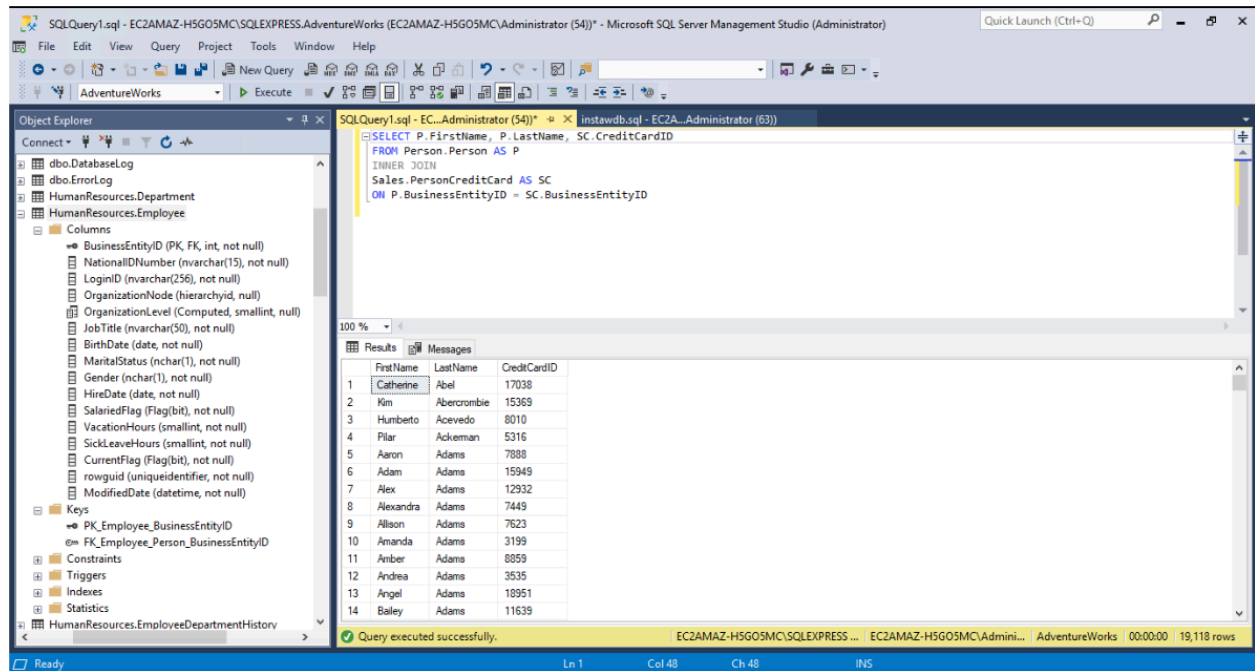
JobTitle	HireDate	Gender
Engineering Manager	2007-11-11	M
Research and Development Manager	2009-02-08	M
Research and Development Manager	2009-05-03	M
Marketing Manager	2007-12-20	M
Production Control Manager	2008-12-01	M
Quality Assurance Manager	2009-02-28	M
Document Control Manager	2009-01-04	M
Facilities Manager	2009-12-02	M
Human Resources Manager	2008-12-06	F
Accounts Manager	2009-01-30	M
Finance Manager	2008-12-25	F
Purchasing Manager	2011-02-25	F
Information Services Manager	2008-12-11	F
Network Manager	2009-02-04	F

MSDE631 - Lab 2

Etana Disasa

Join Tables

```
SELECT P.FirstName, P.LastName, SC.CreditCardID
FROM Person.Person AS P
INNER JOIN
Sales.PersonCreditCard AS SC
ON P.BusinessEntityID = SC.BusinessEntityID
```



The screenshot displays the Microsoft SQL Server Management Studio interface. The query editor shows the following SQL query:

```
SELECT P.FirstName, P.LastName, SC.CreditCardID
FROM Person.Person AS P
INNER JOIN
Sales.PersonCreditCard AS SC
ON P.BusinessEntityID = SC.BusinessEntityID
```

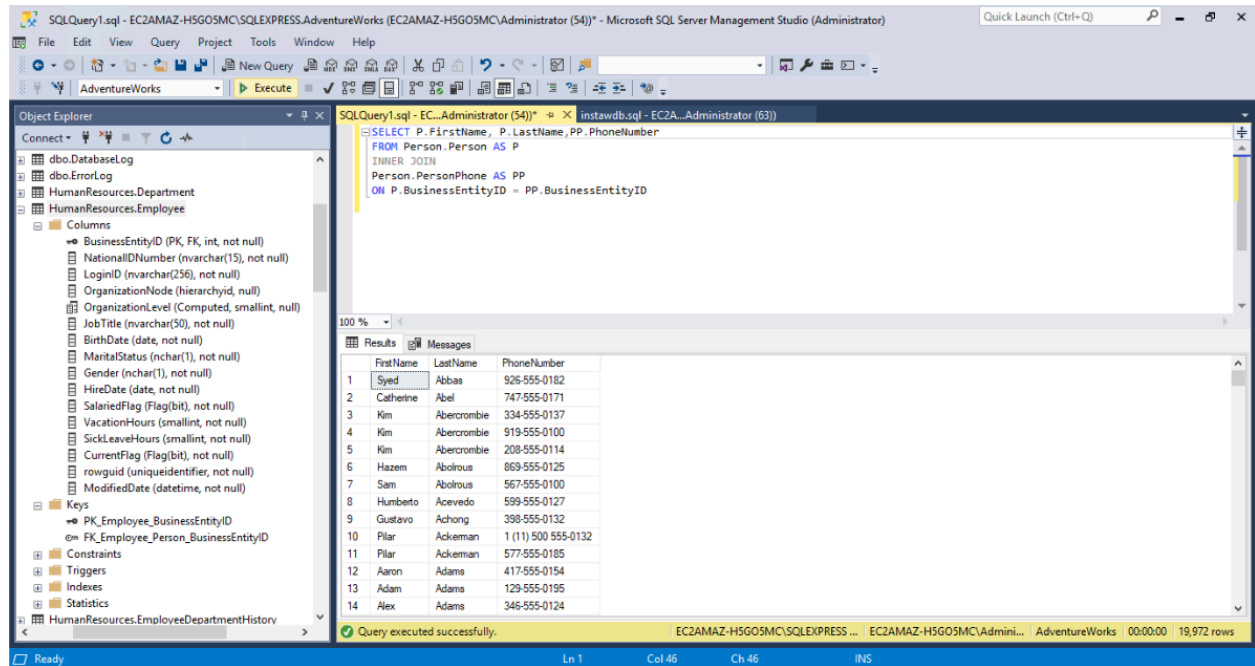
The Object Explorer on the left shows the database structure, including the 'Person' and 'Sales' schemas. The Results pane at the bottom right displays the output of the query, showing 14 rows of data. The status bar at the bottom indicates that the query was executed successfully, returning 19,118 rows.

	FirstName	LastName	CreditCardID
1	Catherine	Abel	17038
2	Kim	Abercrombie	15369
3	Humberto	Acevedo	8010
4	Pilar	Ackerman	5316
5	Aaron	Adams	7888
6	Adam	Adams	15949
7	Alex	Adams	12932
8	Alexandra	Adams	7449
9	Allison	Adams	7623
10	Amanda	Adams	3199
11	Amber	Adams	8859
12	Andrea	Adams	3535
13	Angel	Adams	18951
14	Bailey	Adams	11639

MSDE631 - Lab 2

Etana Disasa

```
SELECT P.FirstName, P.LastName, PP.PhoneNumber
FROM Person.Person AS P
INNER JOIN
Person.PersonPhone AS PP
ON P.BusinessEntityID = PP.BusinessEntityID
```



The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The query editor shows the following SQL query:

```
SELECT P.FirstName, P.LastName, PP.PhoneNumber
FROM Person.Person AS P
INNER JOIN
Person.PersonPhone AS PP
ON P.BusinessEntityID = PP.BusinessEntityID
```

The query has been executed successfully, and the results are displayed in the Results pane. The results show 14 rows of data with columns: FirstName, LastName, and PhoneNumber.

FirstName	LastName	PhoneNumber
Syed	Abbas	926-555-0182
Catherine	Abel	747-555-0171
Kim	Abercrombie	334-555-0137
Kim	Abercrombie	519-555-0100
Kim	Abercrombie	208-555-0114
Hazem	Abokrous	869-555-0125
Sam	Abokrous	567-555-0100
Humberto	Acevedo	599-555-0127
Gustavo	Achong	398-555-0132
Pilar	Ackerman	1 (711) 500-555-0132
Pilar	Ackerman	577-555-0185
Aaron	Adams	417-555-0154
Adam	Adams	129-555-0195
Alex	Adams	348-555-0124

The status bar at the bottom indicates: Query executed successfully. EC2AMAZ-HSG05MC\SQLEXPRESS ... EC2AMAZ-HSG05MC\Admini... AdventureWorks 00:00:00 19,972 rows

MSDE631 - Lab 2

Etana Disasa

```
SELECT P.FirstName, P.LastName, PP.PhoneNumber, PNT.Name Type
FROM Person.Person AS P
INNER JOIN
Person.PersonPhone AS PP
ON P.BusinessEntityID = PP.BusinessEntityID
INNER JOIN
Person.PhoneNumberType AS PNT
ON PNT.PhoneNumberTypeID = PP.PhoneNumberTypeID
```

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The left pane shows the 'Object Explorer' with the 'AdventureWorks' database selected, specifically the 'HumanResources.Employee' table. The central pane shows a SQL query window with the following query:

```
SELECT P.FirstName, P.LastName, PP.PhoneNumber, PNT.Name Type
FROM Person.Person AS P
INNER JOIN
Person.PersonPhone AS PP
ON P.BusinessEntityID = PP.BusinessEntityID
INNER JOIN
Person.PhoneNumberType AS PNT
ON PNT.PhoneNumberTypeID = PP.PhoneNumberTypeID
```

The right pane shows the 'Results' tab with the following data:

	FirstName	LastName	PhoneNumber	Type
1	Syed	Abbas	926-555-0182	Work
2	Catherine	Abel	747-555-0171	Cell
3	Kim	Abercrombie	334-555-0137	Work
4	Kim	Abercrombie	919-555-0100	Work
5	Kim	Abercrombie	208-555-0114	Cell
6	Hazem	Abolrous	869-555-0125	Work
7	Sam	Abolrous	567-555-0100	Work
8	Humberto	Acevedo	599-555-0127	Cell
9	Gustavo	Achong	398-555-0132	Cell
10	Pilar	Ackerman	1 (11) 500 555-0132	Cell
11	Pilar	Ackerman	577-555-0185	Work
12	Aaron	Adams	417-555-0154	Cell
13	Adam	Adams	129-555-0195	Home
14	Alex	Adams	346-555-0124	Cell

The status bar at the bottom indicates 'Query executed successfully.' and '19,972 rows'.

MSDE631 - Lab 2

Etana Disasa

PROBLEM

At this point, you will create your own query that will join 5 tables together. The `Production.Product` has four foreign keys as shown below. Write a query that joins the `Product` table with the four other tables using `INNER JOINS`. Select the columns from other tables that will validate that the joins to all four tables are working correctly; make the query results make sense. Include the `Product name`, `Product Number`, and `ListPrice` as part of the result set (plus at least one other column from the four other tables).

Solution

For this problem, I decided to join six tables namely `Production.Product`, `Production.ProductCostHistory`, `Production.ProductModel`, `Production.ProductSubcategory`, `Production.ProductCategory` and `Production.ProductReview`. This new table has six columns with helpful information about the product we are seeing. The query is from below:

```
SELECT P1.Name, P1.ProductNumber, P1.Color, P1.Size, P1.ListPrice, P3.Name Model, P5.Name
Category, P4.Name "Sub Category", P6.Rating "Star Review"
FROM Production.Product AS P1
INNER JOIN
Production.ProductCostHistory AS P2
ON P1.ProductID = P2.ProductID
INNER JOIN
Production.ProductModel AS P3
ON P1.ProductModelID = P3.ProductModelID
INNER JOIN
Production.ProductSubcategory AS P4
ON P1.ProductSubcategoryID = P4.ProductSubcategoryID
INNER JOIN
Production.ProductCategory AS P5
ON P4.ProductCategoryID = P5.ProductCategoryID
INNER JOIN
Production.ProductReview AS P6
ON P1.ProductID = P6.ProductID
```

The outcome is from below with 5 observations

Mountain Bike Socks, M	SO-B909-M	White	M	9.50	Mountain Bike Socks	Clothing	Socks	5
HL Mountain Pedal	PD-M562	Silver/Black	NULL	80.99	HL Mountain Pedal	Components	Pedals	4
HL Mountain Pedal	PD-M562	Silver/Black	NULL	80.99	HL Mountain Pedal	Components	Pedals	2
Road-550-W Yellow, 40	BK-R64Y-40	Yellow	40	1120.49	Road-550-W Bikes	Road Bikes		5
Road-550-W Yellow, 40	BK-R64Y-40	Yellow	40	1120.49	Road-550-W Bikes	Road Bikes		5

MSDE631 - Lab 2

Etana Disasa

The screenshot of the final outcome looks like this.

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the connection to 'EC2AMAZ-H5G05MC\SQLEXPRESS:AdventureWorks (EC2AMAZ-H5G05MC\Administrator (54))'.

The **Object Explorer** on the left shows the 'Columns' list for the 'Product' table, including fields like ProductID, Name, ProductNumber, Color, Size, ListPrice, Model, Category, Sub Category, and Rating.

The **SQL Query Editor** in the center contains the following query:

```
SELECT P1.Name, P1.ProductNumber, P1.Color, P1.Size, P1.ListPrice, P3.Name Model, P5.Name Category, P4.Name "Sub Category", P6.Rating
FROM Production.Product AS P1
INNER JOIN
    Production.ProductCostHistory AS P2
ON P1.ProductID = P2.ProductID
INNER JOIN
    Production.ProductModel AS P3
ON P1.ProductModelID = P3.ProductModelID
INNER JOIN
    Production.ProductSubcategory AS P4
ON P1.ProductSubcategoryID = P4.ProductSubcategoryID
INNER JOIN
    Production.ProductCategory AS P5
ON P4.ProductCategoryID = P5.ProductCategoryID
INNER JOIN
    Production.ProductReview AS P6
ON P1.ProductID = P6.ProductID
```

The **Results** pane at the bottom shows the output of the query, which is a table with 9 columns: Name, ProductNumber, Color, Size, ListPrice, Model, Category, Sub Category, and Star Review. The results are as follows:

	Name	ProductNumber	Color	Size	ListPrice	Model	Category	Sub Category	Star Review
1	Mountain Bike Socks, M	SO-8909-M	White	M	9.50	Mountain Bike Socks	Clothing	Socks	5
2	HL Mountain Pedal	PD-M562	Silver/Black	NULL	80.99	HL Mountain Pedal	Components	Pedals	4
3	HL Mountain Pedal	PD-M562	Silver/Black	NULL	80.99	HL Mountain Pedal	Components	Pedals	2
4	Road-550-W Yellow, 40	BK-RS4Y-40	Yellow	40	1120.49	Road-550-W	Bikes	Road Bikes	5
5	Road-550-W Yellow, 40	BK-RS4Y-40	Yellow	40	1120.49	Road-550-W	Bikes	Road Bikes	5

The status bar at the bottom indicates 'Query executed successfully.' and shows the execution time as 00:00:02 with 5 rows returned.

End of Part 2