

Project 1:

Querying a Large Relational Database

Problem Statement:

How to get details about customers by querying a database?

Topics:

In this project, you will work on downloading a database and restoring it on the server. You will then query the database to get customer details like name, phone number, email ID, sales made in a particular month, increase in month-on-month sales and even the total sales made to a particular customer.

Highlights:

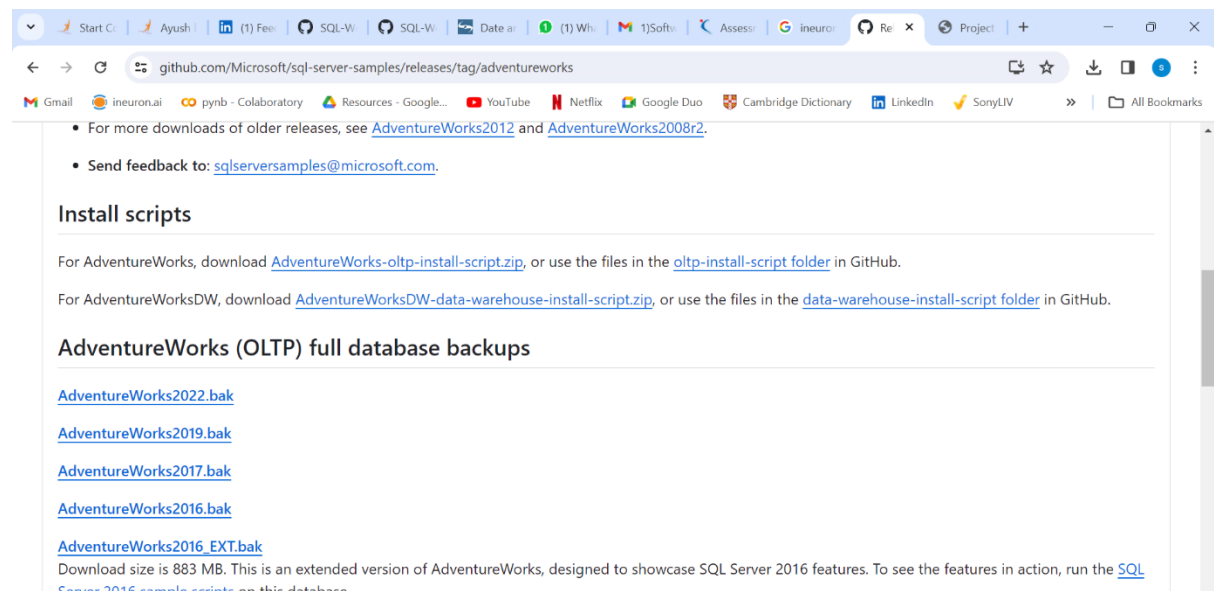
- Table basics and data types
- Various SQL operators
- Various SQL functions

Tasks To Be Performed:

1. Download the AdventureWorks database from the following location and restore it in your server:

Location:

<https://github.com/Microsoft/sql-server-samples/releases/tag/adventureworks>



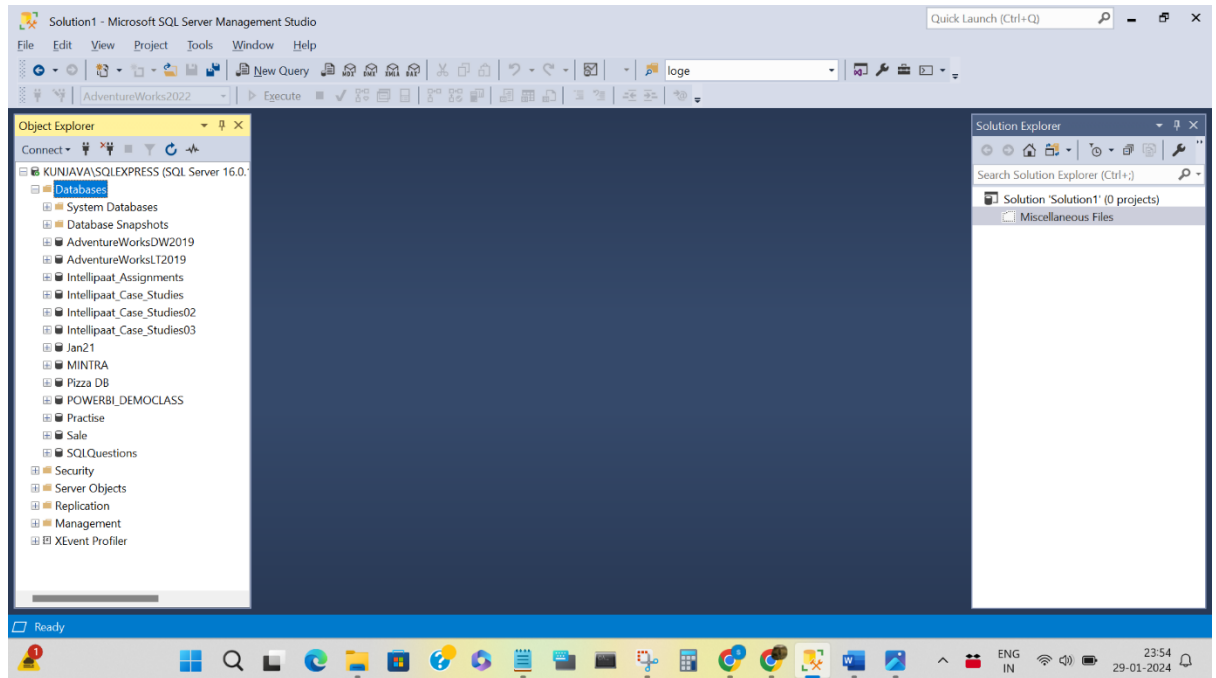
File Name: AdventureWorks2012.bak

AdventureWorks is a sample database shipped with SQL Server and it can be downloaded from the GitHub site. AdventureWorks has replaced Northwind and Pubs sample databases that were available in SQL Server in 2005. Microsoft keeps updating the sample database as it releases new versions.

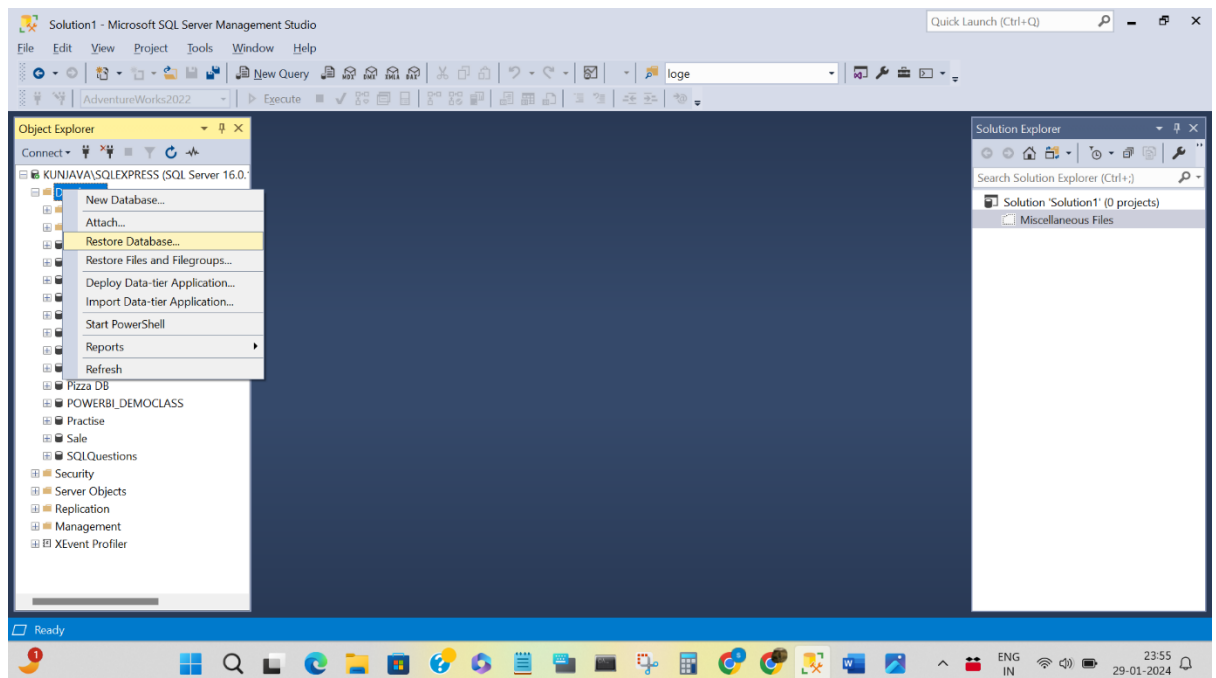
2. Restore Backup:

Follow the below steps to restore a backup of your database using SQL Server Management Studio:

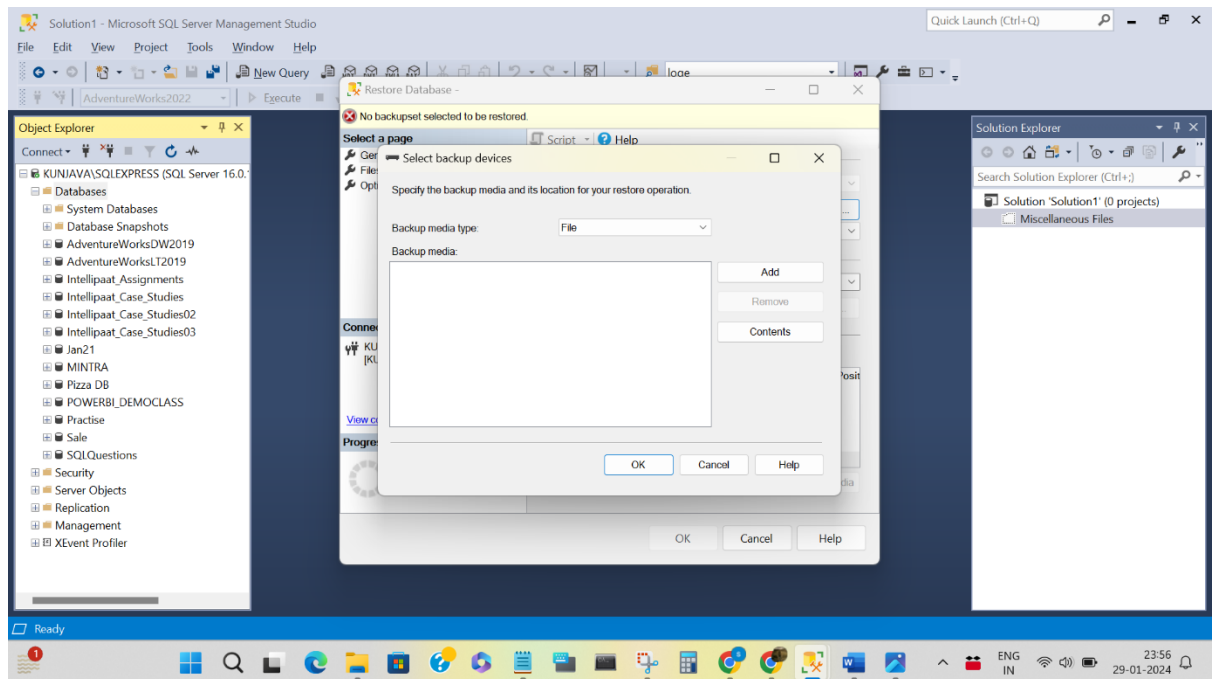
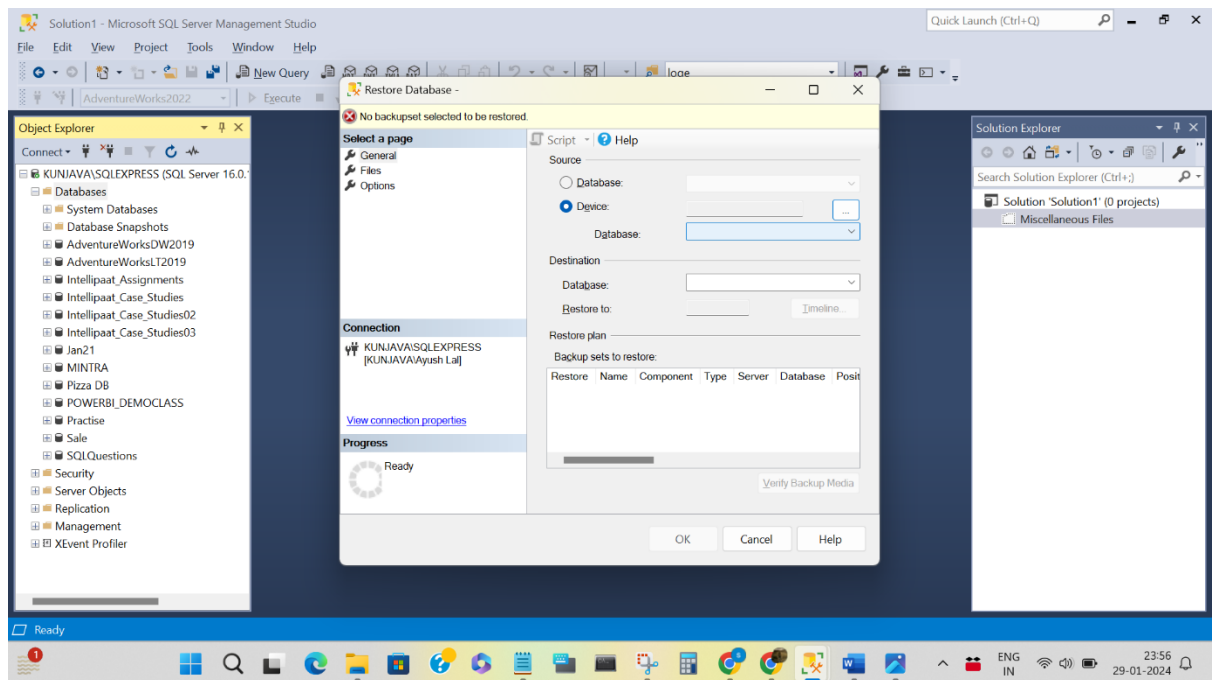
a. Open SQL Server Management Studio and connect to the target SQL Server instance



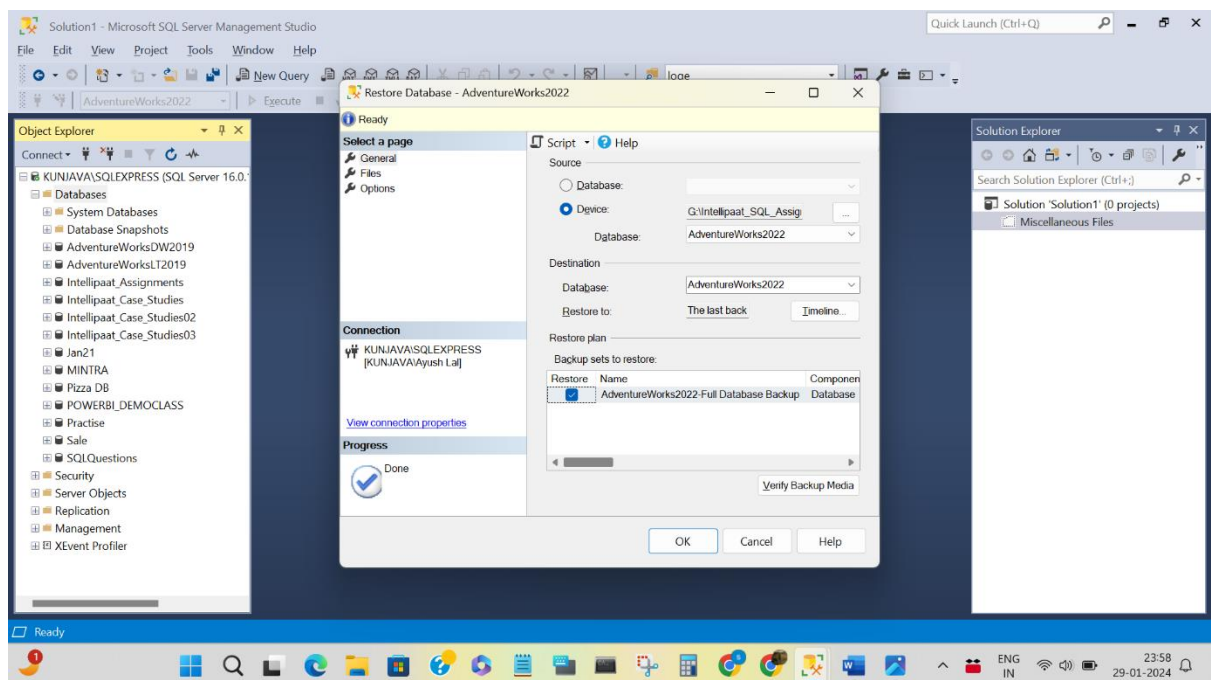
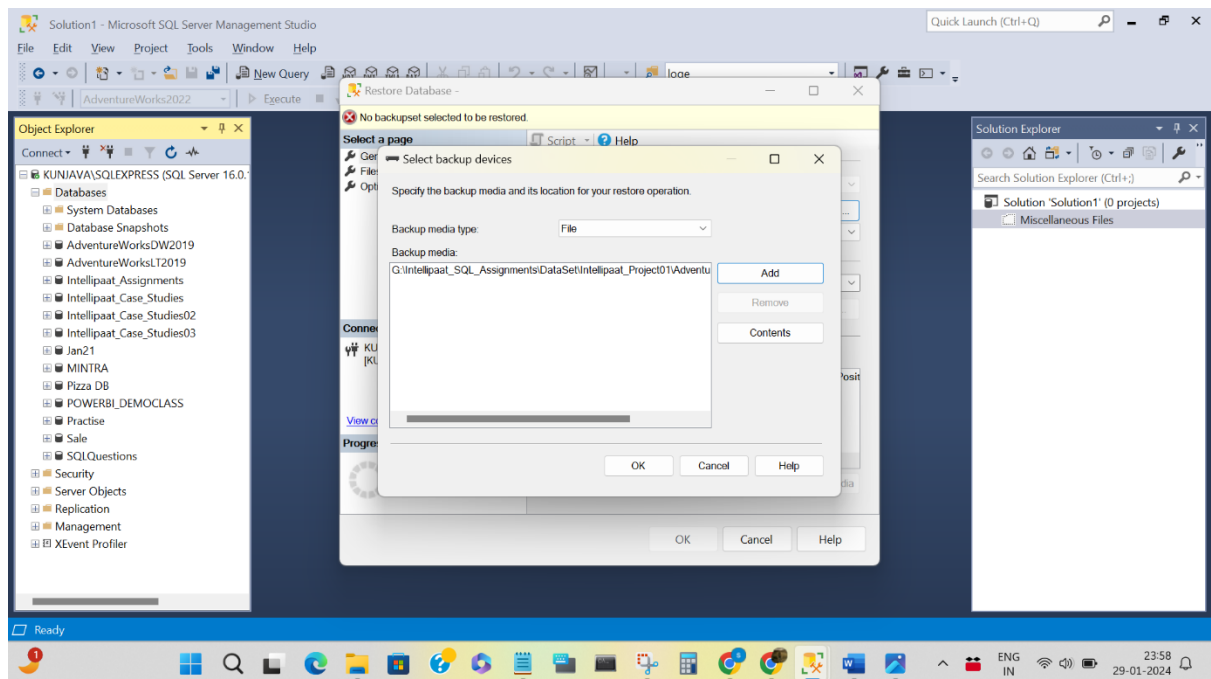
b. Right-click on the Databases Node and select Restore Database



c. Select Device and click on the ellipsis (...)

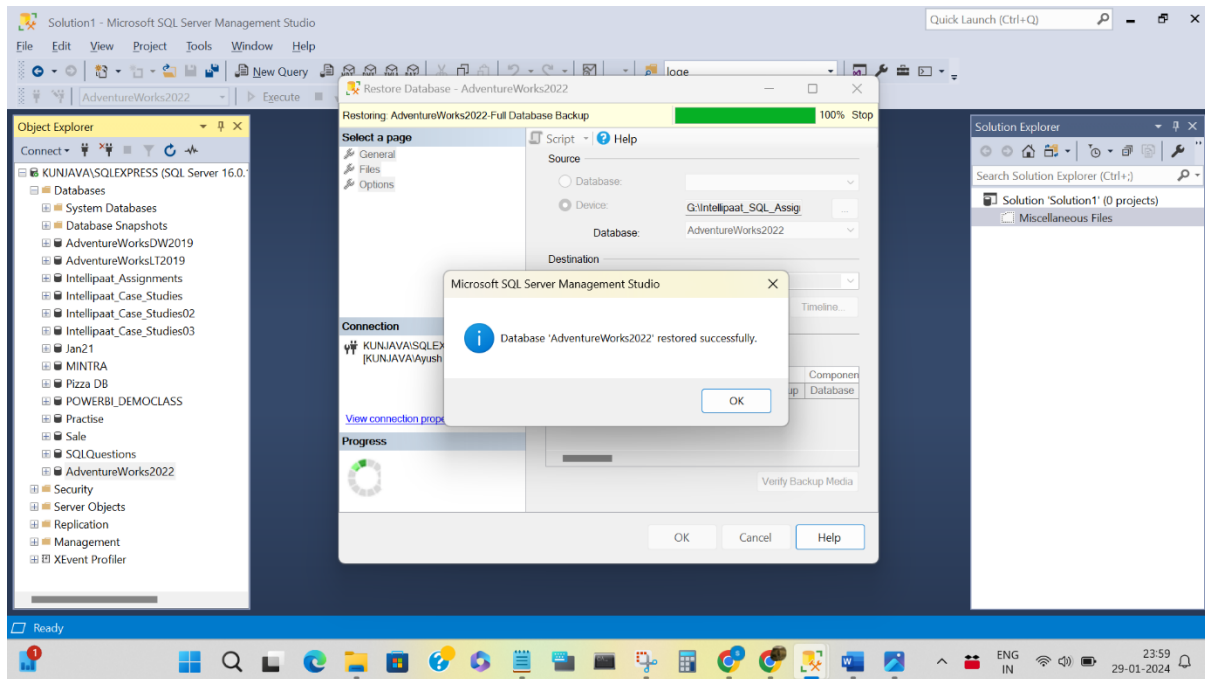


- d. In the dialog box, select Backup devices, click on Add, navigate to the database backup in the file system of the server, select the backup, and click on OK.



- e. If needed, change the target location for the data and log files in the Files pane Note: It is a best practice to place the data and log files on different drives.

f. Now, click on OK This will initiate the database restore. After it completes, you will have the AdventureWorks database installed on your SQL Server instance.



3. Perform the following with help of the above database:

a. Get all the details from the person table including email ID, phone number and phone number type

- ```
Select P.*, E.EmailAddress, PP.PhoneNumber, T.Name as [Phone Number Type]
From Person.Person As P
Join Person.EmailAddress As E On E.BusinessEntityID = P.BusinessEntityID
Join Person.PersonPhone As PP On PP.BusinessEntityID = P.BusinessEntityID
Join Person.PhoneNumberType As T On T.PhoneNumberTypeID = PP.PhoneNumberTypeID
```

|    | id                                | ModifiedDate            | EmailAddress                 | PhoneNumber  | Phone Number Type |
|----|-----------------------------------|-------------------------|------------------------------|--------------|-------------------|
| 1  | 1279F-1207-48A3-8448-4636514EB7E2 | 2009-01-07 00:00:00.000 | ken0@adventure-works.com     | 697-555-0142 | Cell              |
| 2  | 13459-8AA8-47CC-AFF7-C9079AF79033 | 2008-01-24 00:00:00.000 | terri0@adventure-works.com   | 819-555-0175 | Work              |
| 3  | 2555E-0828-434B-A33B-6F38136A37DE | 2007-11-04 00:00:00.000 | roberto0@adventure-works.com | 212-555-0187 | Cell              |
| 4  | 7CE06-38B3-4357-805B-F4B6B71C01FF | 2007-11-28 00:00:00.000 | rob0@adventure-works.com     | 612-555-0100 | Cell              |
| 5  | 3F6B4-AE3B-430C-A754-9F2231BA6FEF | 2007-12-30 00:00:00.000 | gail0@adventure-works.com    | 849-555-0139 | Cell              |
| 6  | A28FD-EFFE-482A-AFD3-B7E8F199D56F | 2013-12-16 00:00:00.000 | josef0@adventure-works.com   | 122-555-0189 | Work              |
| 7  | 58AB8-01BE-4B76-B215-820C8368181A | 2009-02-01 00:00:00.000 | dylan0@adventure-works.com   | 181-555-0156 | Work              |
| 8  | 1E590-4A56-45A9-BC9A-160A1CC9D990 | 2008-12-22 00:00:00.000 | diane1@adventure-works.com   | 815-555-0138 | Cell              |
| 9  | 28C0E-6D36-4252-9846-05CAA0B1F6C5 | 2009-01-09 00:00:00.000 | gigi0@adventure-works.com    | 185-555-0186 | Cell              |
| 10 | 2740E-75B2-420C-9D4B-E3CBC6609604 | 2009-04-26 00:00:00.000 | michael6@adventure-works.com | 330-555-2568 | Work              |

b. Get the details of the sales header order made in May 2011

- ```
Select * From Sales.SalesOrderHeader
Where DATENAME(MONTH, OrderDate) = 'May' And Year(OrderDate) = 2011
```

	SalesOrderID	RevisionNumber	OrderDate	DueDate	ShipDate	Status	OnlineOrderFlag
1	43659	8	2011-05-31 00:00:00.000	2011-06-12 00:00:00.000	2011-06-07 00:00:00.000	5	0
2	43660	8	2011-05-31 00:00:00.000	2011-06-12 00:00:00.000	2011-06-07 00:00:00.000	5	0
3	43661	8	2011-05-31 00:00:00.000	2011-06-12 00:00:00.000	2011-06-07 00:00:00.000	5	0
4	43662	8	2011-05-31 00:00:00.000	2011-06-12 00:00:00.000	2011-06-07 00:00:00.000	5	0
5	43663	8	2011-05-31 00:00:00.000	2011-06-12 00:00:00.000	2011-06-07 00:00:00.000	5	0
6	43664	8	2011-05-31 00:00:00.000	2011-06-12 00:00:00.000	2011-06-07 00:00:00.000	5	0
7	43665	8	2011-05-31 00:00:00.000	2011-06-12 00:00:00.000	2011-06-07 00:00:00.000	5	0
8	43666	8	2011-05-31 00:00:00.000	2011-06-12 00:00:00.000	2011-06-07 00:00:00.000	5	0
9	43667	8	2011-05-31 00:00:00.000	2011-06-12 00:00:00.000	2011-06-07 00:00:00.000	5	0

c. Get the details of the sales details order made in the month of May 2011

- `Select S.* From Sales.SalesOrderDetail As S
Join Sales.SalesOrderHeader As H
On S.SalesOrderID = H.SalesOrderID
Where DATENAME(MONTH,OrderDate) = 'May' And Year(OrderDate) = 2011`

d. Get the total sales made in May 2011

- `Select Sum(LineTotal) As [Total Sales] From Sales.SalesOrderDetail As S
Join Sales.SalesOrderHeader As H
On S.SalesOrderID = H.SalesOrderID
Where DATENAME(MONTH,OrderDate) = 'May' And Year(OrderDate) = 2011`

e. Get the total sales made in the year 2011 by month order by increasing sales

- `Select DATENAME(Month,H.OrderDate) As Months,Sum(LineTotal) As [Total Sales]
From Sales.SalesOrderDetail As S
Join Sales.SalesOrderHeader As H
On S.SalesOrderID = H.SalesOrderID
Where Year(H.OrderDate) = 2011
Group By DATENAME(Month,H.OrderDate)
Order By [Total Sales] Asc`

f. Get the total sales made to the customer with FirstName='Gustavo' and LastName ='Achong'

```
select LastName, SalesYTD, SalesLastYear
from HumanResources.Employee as e
inner join Person.Person as p on e.BusinessEntityID = p.BusinessEntityID
inner join Sales.SalesPerson as s on e.BusinessEntityID = s.BusinessEntityID
where FirstName='Gustavo' and LastName='Achong';
```