

Resumo do Projeto

1. Baixar o SQL Server 2022 Express

Acesse o link: [SQL Server 2022 Express](#)

2. Instalar o SQL Server Management Studio (SSMS)

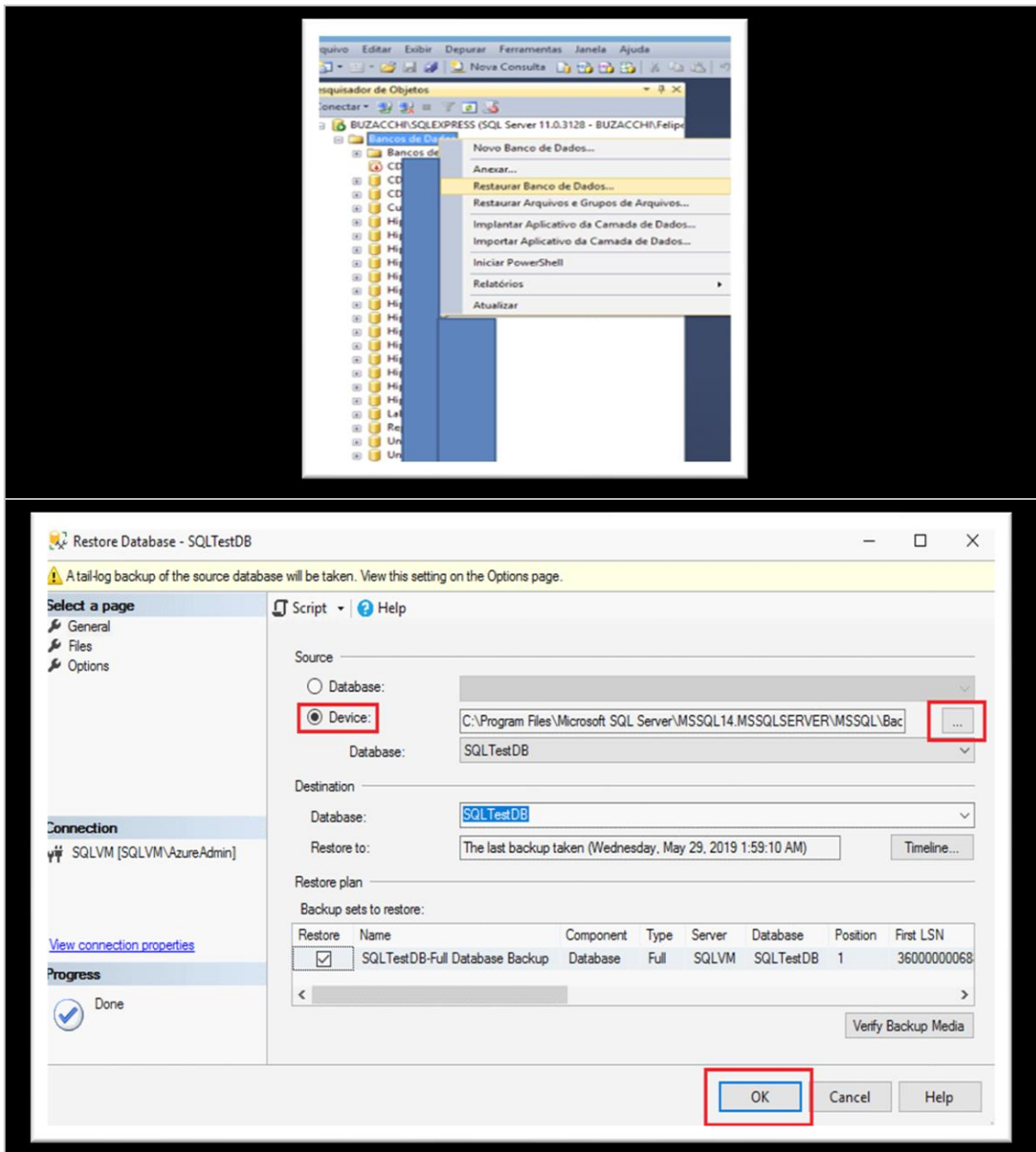
Baixe através do link: [SQL Server Management Studio](#)

3. Baixar o Banco de Dados AdventureWorks2022

Siga as instruções disponíveis em: [AdventureWorks2022 - Instalação e Configuração](#)

4. Restaurar o Banco de Dados no SQL Server Management Studio

Utilize o SSMS para restaurar o banco de dados conforme as instruções fornecidas na Imagem a seguir.



2) Consulta SQL para Carregar Dados de Vendas

Aqui está uma consulta SQL otimizada que busca as informações solicitadas das tabelas Sales.SalesOrderHeader, Sales.SalesOrderDetail, Person.Address, e Production.Product:

```
1)
SELECT
    SOH.OrderDate,
    SUM(SOH.TotalDue) AS Valor_total,
    A.StateProvinceID,
    A.AddressLine1 AS Nome,
    A.City AS Endereco,
    P.Name AS ProdutoNome,
    P.ProductNumber
FROM
    Sales.SalesOrderHeader AS SOH
INNER JOIN
    Sales.SalesOrderDetail AS SOD ON
    SOH.SalesOrderID =
    SOD.SalesOrderID
INNER JOIN
    Production.Product AS P ON
    SOD.ProductID = P.ProductID
INNER JOIN
    Person.Address AS A ON
    SOH.ShipToAddressID = A.AddressID
GROUP BY
    SOH.OrderDate,
    A.StateProvinceID,
    A.AddressLine1,
    A.City,
    P.Name,
    P.ProductNumber;
```

```
2)
SELECT
    SOH.OrderDate,
    SUM(SOH.TotalDue) AS Valor_total,
    A.StateProvinceID,
    A.AddressLine1 AS Nome,
    A.City AS Endereco,
    SST.Name AS Territorio,
    P.Name AS ProdutoNome,
    P.ProductNumber
FROM
    Sales.SalesOrderHeader AS SOH
INNER JOIN
    Sales.SalesTerritory AS SST ON
    SOH.TerritoryID = SST.TerritoryID
INNER JOIN
    Sales.SalesOrderDetail AS SOD ON
    SOH.SalesOrderID =
    SOD.SalesOrderID
INNER JOIN
    Production.Product AS P ON
    SOD.ProductID = P.ProductID
INNER JOIN
    Person.Address AS A ON
    SOH.ShipToAddressID = A.AddressID
GROUP BY
    SOH.OrderDate,
    A.StateProvinceID,
    A.AddressLine1,
    A.City,
    SST.Name,
    P.Name,
    P.ProductNumber
```

Observações sobre as Consultas

A diferença principal entre as duas consultas está na inclusão da coluna **Território** na segunda consulta. Isso oferece uma perspectiva mais ampla em relação à

região de vendas, já que o StateProvinceID pode não fornecer informações suficientes para análises mais detalhadas.

resumo		messages					
	OrderDate	Valor_total	StateProvinceID	Nome	Endereco	ProdutoNome	ProductNumbe
1	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	AWC Logo Cap	CA-1098
2	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	LL Road Frame - Black, 52	FR-R38B-52
3	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	LL Road Frame - Black, 58	FR-R38B-58
4	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	LL Road Frame - Red, 44	FR-R38R-44
5	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	LL Road Frame - Red, 48	FR-R38R-48
6	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	LL Road Frame - Red, 60	FR-R38R-60
7	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	LL Road Frame - Red, 62	FR-R38R-62
8	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Long-Sleeve Logo Jersey, L	LJ-0192-L
9	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Long-Sleeve Logo Jersey, M	LJ-0192-M
10	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Long-Sleeve Logo Jersey, XL	LJ-0192-X
11	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	ML Road Frame - Red, 48	FR-R72R-48
12	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	ML Road Frame - Red, 52	FR-R72R-52
13	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-150 Red, 56	BK-R93R-56
14	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-450 Red, 44	BK-R68R-44
15	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-450 Red, 52	BK-R68R-52
16	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-450 Red, 58	BK-R68R-58
17	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-450 Red, 60	BK-R68R-60
18	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-650 Black, 44	BK-R50B-44
19	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-650 Black, 52	BK-R50B-52
20	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-650 Black, 58	BK-R50B-58
21	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-650 Black, 60	BK-R50B-60
22	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-650 Red, 44	BK-R50R-44
23	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Road-650 Red, 48	BK-R50R-48

	OrderDate	Valor_total	StateProvinceID	Nome	Endereco	Territorio	ProdutoNome	ProductNumbe
1	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	AWC Logo Cap	CA-1098
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9	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	Long-Sleeve Logo Jersey, M	LJ-0192-M
10	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	Long-Sleeve Logo Jersey, XL	LJ-0192-X
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19	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	Road-650 Black, 52	BK-R50B-52
20	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	Road-650 Black, 58	BK-R50B-58
21	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	Road-650 Black, 60	BK-R50B-60
22	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	Road-650 Red, 44	BK-R50R-44
23	2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	Road-650 Red, 48	BK-R50R-48

3) Acesso ao Jupyter Notebook

Após salvar o arquivo, você pode utilizar o Jupyter Notebook. Para isso, é necessário ter o Anaconda instalado, bem como algumas bibliotecas adicionais. Utilize o terminal (CMD) e execute os seguintes comandos:

Use o CMD.

1 - pip install --upgrade pip setuptools

2 - conda install -c conda-forge notebook jupyter_contrib_nbextensions

3 - pip install jupyter_contrib_nbextensions --no-cache-dir

4 - pip install jupyter_contrib_nbextensions==0.5.1

5 - pip install ipywidgets

Seguindo estas etapas, você terá acesso à parte de filtragem com widgets, permitindo manipular filtros de datas, regiões, produtos e valores. O arquivo Case.ipynb é autoexplicativo e responde às questões solicitadas.

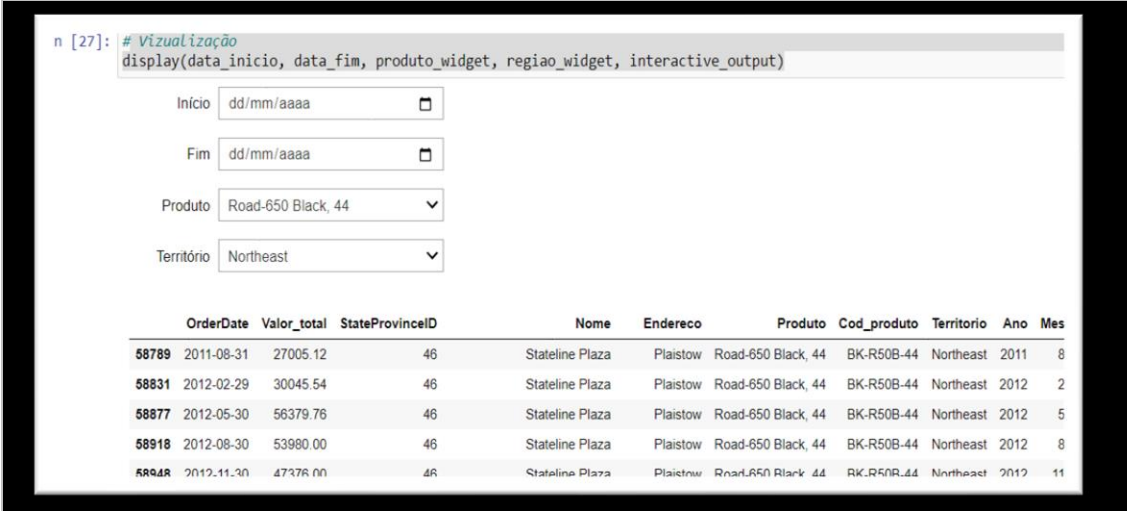
3) Visualização com Streamlit

Para executar a visualização com Streamlit, abra o terminal (CMD) e digite os seguintes comandos:

1. cd Caminho\Case - BI
2. streamlit run Dashboard_completo.py

4) Manipulação e Análise de Dados com Python

Nesta seção, crie filtros que permitam aos usuários selecionar intervalos de datas, produtos e regiões. Em algumas situações, a execução pode não ocorrer na primeira tentativa devido à versão do software. Caso isso aconteça, basta reproduzir a célula novamente para resolver o problema.



```
n [27]: # Visualização
display(data_inicio, data_fim, produto_widget, regio_widget, interactive_output)
```

	OrderDate	Valor_total	StateProvinceID	Nome	Endereco	Produto	Cod_produto	Territorio	Ano	Mes
58789	2011-08-31	27005.12	46	Stateline Plaza	Plaistow	Road-650 Black, 44	BK-R50B-44	Northeast	2011	8
58831	2012-02-29	30045.54	46	Stateline Plaza	Plaistow	Road-650 Black, 44	BK-R50B-44	Northeast	2012	2
58877	2012-05-30	56379.76	46	Stateline Plaza	Plaistow	Road-650 Black, 44	BK-R50B-44	Northeast	2012	5
58918	2012-08-30	53980.00	46	Stateline Plaza	Plaistow	Road-650 Black, 44	BK-R50B-44	Northeast	2012	8
58948	2012-11-30	47376.00	46	Stateline Plaza	Plaistow	Road-650 Black, 44	BK-R50B-44	Northeast	2012	11