

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)

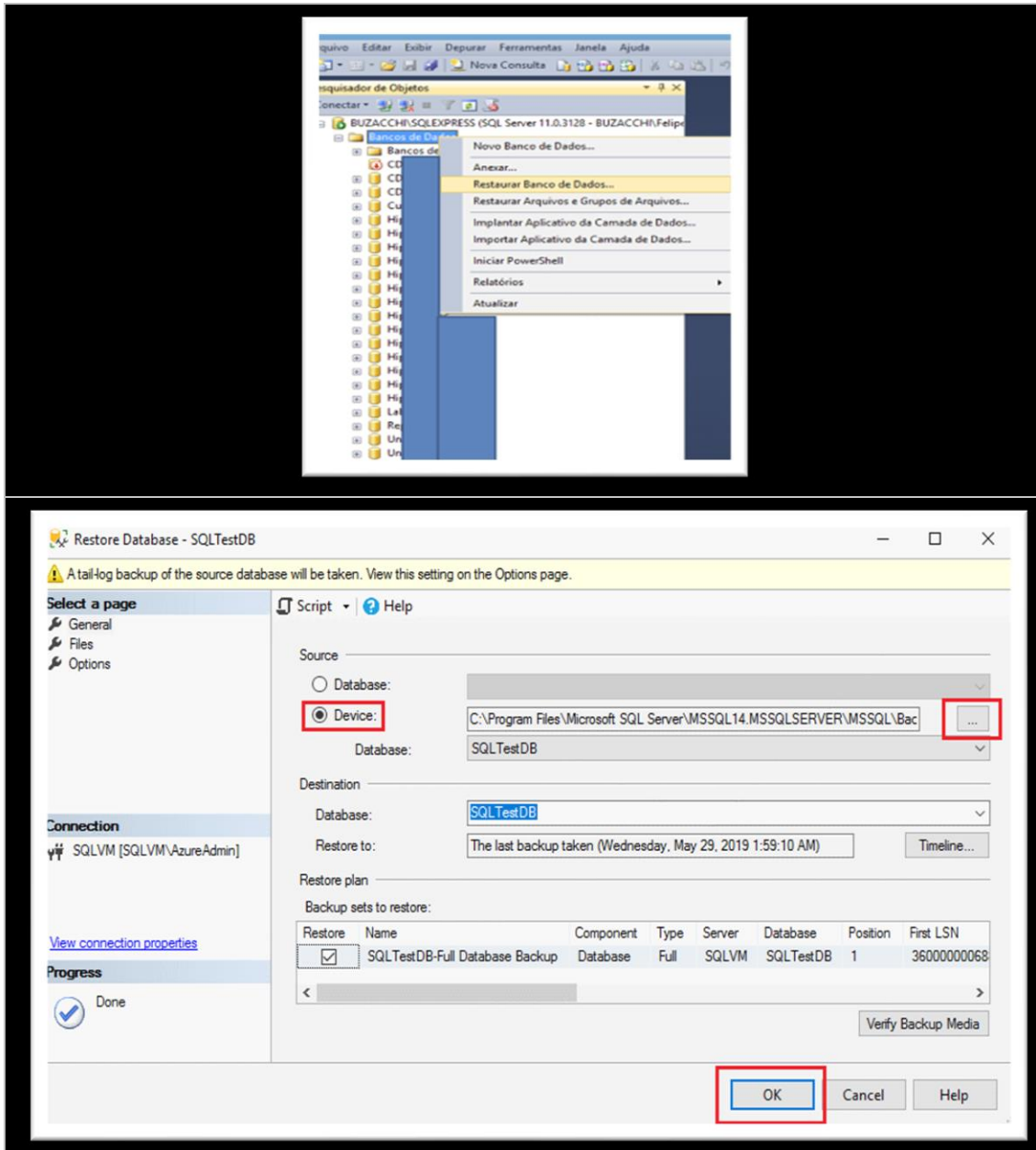
Baixe através do link: [SQL Server Management Studio](#)

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.



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:

<pre>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;</pre>	<pre>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</pre>
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Foi um pouco confuso em relação à parte da região! Acredito que o StateProvinceID não forneceria informações suficientes para análises. Ambos os códigos respondem exatamente ao que foi solicitado, mas a diferença está na coluna (Territorio) utilizada para responder às perguntas a seguir.

messages		OrderDate	Valor_total	StateProvinceID	Nome	Endereco	ProdutoNome	ProductNumber
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	ProductNumber
1		2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	AWC Logo Cap	CA-1098
2		2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	LL Road Frame - Black, 52	FR-R38B-52
3		2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	LL Road Frame - Black, 58	FR-R38B-58
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8		2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	Long-Sleeve Logo Jersey, L	LJ-0192-L
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
11		2011-05-31 00:00:00.000	40487,7233	7	254480 River Rd	Richmond	Canada	ML Road Frame - Red, 48	FR-R72R-48
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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
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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

Salvei o arquivo e fui para o Jupyter Notebook. Para as próximas etapas, é necessário ter o **Anaconda** instalado para acessar os **arquivos .ipynb e py**. Além do Anaconda, algumas bibliotecas, como **Streamlit e widgets**, também precisam ser instaladas.

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

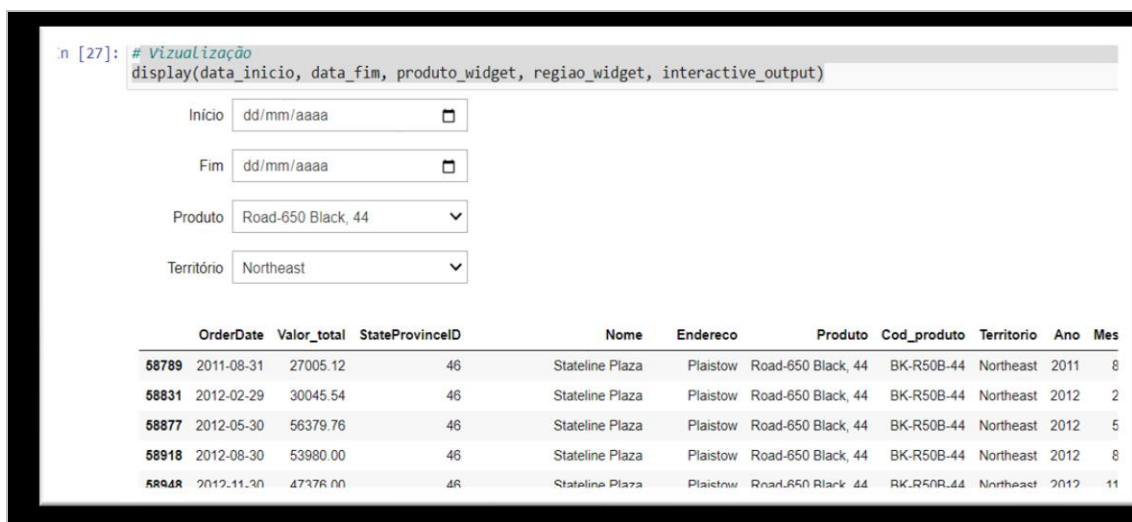
Ao seguir essas etapas, você conseguirá acessar a parte de filtragem com widgets para manipular filtros, regiões, produtos e valores. O arquivo Case.ipynb é autoexplicativo e responde às questões solicitadas.

Última questão sobre a visualização com Streamlit: para executá-la, basta abrir o CMD e digitar os seguintes comandos:

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

Manipulação e Análise de Dados com Python

Nesta seção, crie filtros que permitam aos usuários selecionar intervalos de datas, produtos e regiões. Às vezes, a execução pode não ocorrer na primeira tentativa, possivelmente devido à versão. No entanto, é só reproduzir a célula novamente para resolver o problema.



```
In [27]: # Visualização
display(data_inicio, data_fim, produto_widget, regioao_widget, interactive_output)
```

Inicio

Fim

Produto

Território

	OrderDate	Valor_total	StateProvinceID	Nome	Endereco	Produto	Cod_produto	Território	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