

Course:
Strategic Business Intelligence
(BUS0007)

Student:
Irina Salikhova (041-025-826)

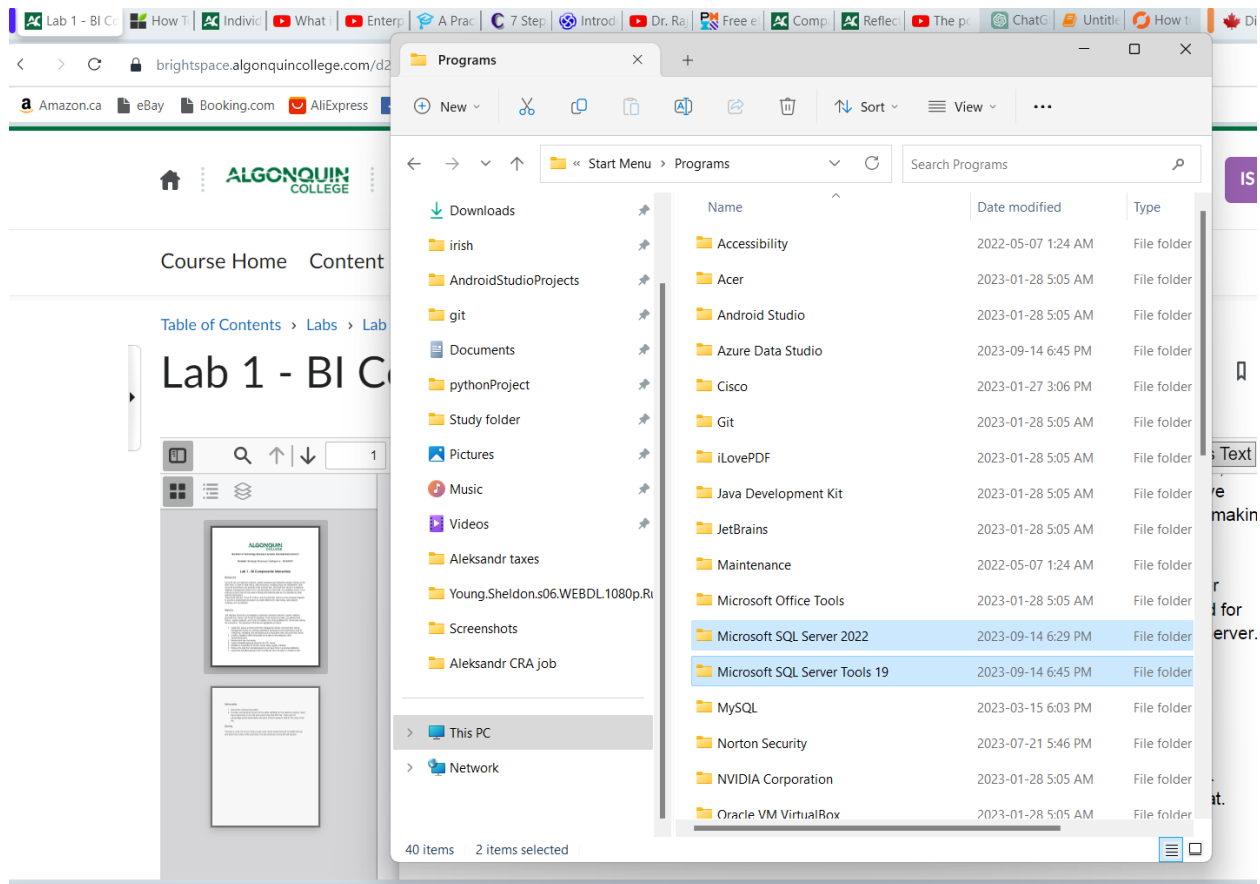
Lab 1 - BI Components Interaction

Objectives:

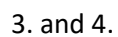
1. Install SQL Server and Microsoft SQL Management Studio. Microsoft SQL Server Management Studio is a software application developed by Microsoft that is used for configuring, managing, and administering all components within Microsoft SQL Server.
2. Create a database called SampleDB and a table in that database called SampleSuperstore.
3. Retrieve and view the results.
4. Upload SampleSuperstore table into the SQL Server.
5. Establish a connection to the SQL server using Jupyter notebook.
6. Retrieve the data from SampleSuperstore and save them in a pandas dataframe.
7. Upload the SampleSuperstore into PowerBI and show the data in a tabular format.

Screenshots:

- 1.



2.



3. and 4.

SQLQuery4.sql - LAPTOP-A1GBOLQQ\SQLEXPRESS.SampleDB (LAPTOP-A1GBOLQQ\irish (54)) - Microsoft SQL Server Management Studio

Quick Launch (Ctrl+L)

File Edit View Query Project Tools Window Help

New Query Execute Stop Refresh Undo Redo Copy Paste Print

SampleDB

SQLQuery4.sql - LA_GBOLQQ\irish (54)

```

USE SampleDB;
select * from SampleSuperstore;

```

100 %

Results Messages

Row_ID	Order_ID	Order_Date	Ship_Date	Ship_Mode	Customer_ID	Customer_Name	Segment	Country	City	State	Postal_Code	Region	Product_ID	Category	Sub_Category	Product_L
1	CA-2016-152156	2016-11-08	2016-11-11	Second Class	CG-12520	Claire Gule	Consumer	United States	Henderson	Kentucky	42420	South	FUR-BO-10001798	Furniture	Bookcases	Bush Sor
2	CA-2016-152156	2016-11-08	2016-11-11	Second Class	CG-12520	Claire Gule	Consumer	United States	Henderson	Kentucky	42420	South	FUR-CH-10000454	Furniture	Chairs	Hon Del
3	CA-2016-138688	2016-06-12	2016-06-16	Second Class	DI-13045	Darrin Van Huff	Corporate	United States	Los Angeles	California	90036	West	OFF-LA-10000240	Office Supplies	Labels	Self-Adh
4	US-2015-108966	2015-10-11	2015-10-18	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Florida	33311	South	FUR-TA-10000577	Furniture	Tables	Belford C
5	US-2015-108966	2015-10-11	2015-10-18	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Florida	33311	South	OFF-ST-10000760	Office Supplies	Storage	Eldon Fo
6	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West	FUR-FU-10001487	Furniture	Furnishings	Eldon Ex
7	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West	OFF-AR-10002833	Office Supplies	Art	Newell 3
8	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West	TEC-PH-10002275	Technology	Phones	Mtel 532
9	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West	OFF-BI-10003910	Office Supplies	Binders	DAL Angl
10	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West	OFF-AP-10002892	Office Supplies	Appliances	Balkin FS
11	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West	FUR-TA-10001539	Furniture	Tables	Chromori
12	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West	TEC-PH-10002033	Technology	Phones	Konfel 2
13	CA-2017-114412	2017-04-15	2017-04-20	Standard Class	AA-10480	Andrew Allen	Consumer	United States	Concord	North Carolina	28027	South	OFF-PA-10002365	Office Supplies	Paper	Xerox 19
14	CA-2016-161389	2016-12-05	2016-12-10	Standard Class	IM-15070	Irene Maddox	Consumer	United States	Seattle	Washington	98103	West	OFF-BI-10003656	Office Supplies	Binders	Fellowes
15	US-2015-118983	2015-11-22	2015-11-26	Standard Class	HP-14815	Harold Pawlan	Home Office	United States	Fort Worth	Texas	76106	Central	OFF-AP-10002311	Office Supplies	Appliances	Holmes F
16	US-2015-118983	2015-11-22	2015-11-26	Standard Class	HP-14815	Harold Pawlan	Home Office	United States	Fort Worth	Texas	76106	Central	OFF-BI-10000756	Office Supplies	Binders	Stone D
17	CA-2014-105893	2014-11-11	2014-11-18	Standard Class	PK-19075	Pete Kiz	Consumer	United States	Madison	Wisconsin	53711	Central	OFF-ST-10004186	Office Supplies	Storage	Star D-B
18	CA-2014-167164	2014-05-13	2014-05-15	Second Class	AQ-10270	Alejandro Grove	Consumer	United States	West Jordan	Utah	84084	West	OFF-ST-10000107	Office Supplies	Storage	Fellowes
19	CA-2014-143336	2014-08-27	2014-09-01	Second Class	ZD-21925	Zuchusua Dona...	Consumer	United States	San Francisco	California	94109	West	OFF-AR-10000356	Office Supplies	Art	Newell 3
20	CA-2014-143336	2014-08-27	2014-09-01	Second Class	ZD-21925	Zuchusua Dona...	Consumer	United States	San Francisco	California	94109	West	TEC-PH-10001949	Technology	Phones	Cisco SP
21	CA-2014-143336	2014-08-27	2014-09-01	Second Class	ZD-21925	Zuchusua Dona...	Consumer	United States	San Francisco	California	94109	West	OFF-BI-10002215	Office Supplies	Binders	Wilson J

Query executed successfully.

LAPTOP-A1GBOLQQ\SQLEXPRESS - LAPTOP-A1GBOLQQ\irish - SampleDB 000000 9,994 rows

5.

jupyter Untitled Last Checkpoint: Last Thursday at 7:05 PM (autosaved)

File Edit View Insert Cell Kernel Widgets Help

Not Trusted Python 3 (ipykernel)

In [36]: `!pip install sqlalchemy`

Requirement already satisfied: sqlalchemy in c:\users\irish\anaconda3\lib\site-packages (1.4.39)
Requirement already satisfied: greenlet!=0.4.17 in c:\users\irish\anaconda3\lib\site-packages (from sqlalchemy) (2.0.1)

In [37]: `import pandas as pd
from sqlalchemy import create_engine
import pyodbc`

In [47]: `SERVER='LAPTOP-A1GBOLQQ\SQLEXPRESS'
DATABASE='SampleDB'
DRIVER='ODBC Driver 17 for SQL Server'
USERNAME=''
PASSWORD=''
DATABASE_CONNECTION=f'mssql://{USERNAME}:{PASSWORD}@{SERVER}/{DATABASE}?driver={DRIVER}'`

In [48]: `engine = create_engine(DATABASE_CONNECTION)`

In [49]: `connection = engine.connect()`

6.

```
In [49]: connection = engine.connect()
```

```
In [50]: query = "SELECT * FROM sampleSuperstore"
df = pd.read_sql(query, engine)
df.head()
```

Out[50]:

	Row_ID	Order_ID	Order_Date	Ship_Date	Ship_Mode	Customer_ID	Customer_Name	Segment	Country	City	Postal_Code	Region	Product_ID
0	1	CA-2016-152156	2016-11-08	2016-11-11	Second Class	CG-12520	Claire Gule	Consumer	United States	Henderson	42420	South	FUR-BO-10001798
1	2	CA-2016-152156	2016-11-08	2016-11-11	Second Class	CG-12520	Claire Gule	Consumer	United States	Henderson	42420	South	FUR-CH-10000454
2	3	CA-2016-138688	2016-06-12	2016-06-16	Second Class	DV-13045	Darrin Van Huff	Corporate	United States	Los Angeles	90036	West	OFF-LA-10000240
3	4	US-2015-108966	2015-10-11	2015-10-18	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	33311	South	FUR-TA-10000577
4	5	US-2015-108966	2015-10-11	2015-10-18	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	33311	South	OFF-ST-10000760

5 rows × 21 columns

7.

The screenshot shows a data visualization tool interface with a menu bar (Home, Insert, Modeling, View, Optimize, Help) and a toolbar with icons for Cut, Copy, Format painter, Clipboard, Get data, Excel workbook, and OneLake data hub. A 'Navigator' panel on the left shows a tree view with 'LAPTOP-A1GBOLQQ\SQLEXPRESS: SampleDB [...]' expanded, containing 'People', 'Returns', and 'SampleSuperstore' (selected). The main area displays a table titled 'SampleSuperstore' with columns: Row_ID, Order_ID, Order_Date, Ship_Date, Ship_Mode, Customer_ID, Customer_Name, Segment, Country, City, Postal_Code, Region, and Product_ID. The table contains 23 rows of data. A 'Filters' panel on the right is partially visible. At the bottom, there are buttons for 'Load', 'Transform Data', and 'Cancel'.

Row_ID	Order_ID	Order_Date	Ship_Date	Ship_Mode	Customer_ID	Customer_Name	Segment	Country	City	Postal_Code	Region	Product_ID
1	CA-2016-152156	2016-11-08	2016-11-11	Second Class	CG-12520	Claire Gule	Consumer	United States	Henderson	42420	South	FUR-BO-10001798
2	CA-2016-152156	2016-11-08	2016-11-11	Second Class	CG-12520	Claire Gule	Consumer	United States	Henderson	42420	South	FUR-CH-10000454
3	CA-2016-138688	2016-06-12	2016-06-16	Second Class	DV-13045	Darrin Van Huff	Corporate	United States	Los Angeles	90036	West	OFF-LA-10000240
4	US-2015-108966	2015-10-11	2015-10-18	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	33311	South	FUR-TA-10000577
5	US-2015-108966	2015-10-11	2015-10-18	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	33311	South	OFF-ST-10000760
6	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	CA-2014-115812							
7	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	CA-2014-115812							
8	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	CA-2014-115812							
9	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	CA-2014-115812							
10	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	CA-2014-115812							
11	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	CA-2014-115812							
12	CA-2014-115812	2014-06-09	2014-06-14	Standard Class	CA-2014-115812							
13	CA-2017-114412	2017-04-15	2017-04-20	Standard Class	CA-2017-114412							
14	CA-2016-161389	2016-12-05	2016-12-10	Standard Class	CA-2016-161389							
15	US-2015-118983	2015-11-22	2015-11-26	Standard Class	US-2015-118983							
16	US-2015-118983	2015-11-22	2015-11-26	Standard Class	US-2015-118983							
17	CA-2014-105893	2014-11-11	2014-11-18	Standard Class	CA-2014-105893							
18	CA-2014-167164	2014-05-13	2014-05-15	Second Class	CA-2014-167164							
19	CA-2014-143336	2014-08-27	2014-09-01	Second Class	CA-2014-143336							
20	CA-2014-143336	2014-08-27	2014-09-01	Second Class	CA-2014-143336							
21	CA-2014-143336	2014-08-27	2014-09-01	Second Class	CA-2014-143336							
22	CA-2016-137330	2016-12-09	2016-12-13	Standard Class	CA-2016-137330							
23	CA-2016-137330	2016-12-09	2016-12-13	Standard Class	CA-2016-137330							

Visualizations

Build visual

Name: 'SampleSuperstore'[Discount]

Values

Add data fields here

Drill through

Cross-report: Off

Keep all filters: On

Add drill-through fields here

Data

Search

- SampleSuperstore
 - Category
 - City
 - Country
 - Customer_ID
 - Customer_Name
 - Discount
 - Order_Date
 - Order_ID
 - Postal_Code
 - Product_ID
 - Product_Name
 - Profit
 - Quantity
 - Region
 - Row_ID
 - Sales
 - Segment
 - Ship_Date
 - Ship_Mode
 - State
 - Sub_Category

FileHomeInsertModelingViewOptimizeHelpFormatData / DrillTable toolsColumn tools

NameSub_Category

Data typeText

FormatText

\$ % 9 + Auto

SummarizationDon't summarize

Data categoryUncategorized

Sort by column

Data groups

Manage relationships

New column

Structure

Formatting

Properties

Sort

Groups

Relationships

Calculations

Auto recovery contains some recovered files that haven't been opened.

Furniture	Alcon	United States	TT-21070	Ted Trevino	0.20	2014	Qtr 2	May	18	CA-2014-164224	1	FUR-FU-10000308	Deflect-o Glass Clea
Furniture	Alexandria	United States	AG-10495	Andrew Gjertsen	0.00	2015	Qtr 1	January	4	CA-2015-104241	1	FUR-FU-10001473	DAX Wood Docume
Furniture	Alexandria	United States	SD-20485	Shirley Daniels	0.00	2014	Qtr 1	January	26	US-2014-135502	1	FUR-FU-10001847	Eldon Image Series
Furniture	Alexandria	United States	SD-20485	Shirley Daniels	0.00	2014	Qtr 1	January	26	US-2014-135502	1	FUR-FU-10004567	GE General Use Halc
Furniture	Alles	United States	AG-10675	Anna Gayman	0.30	2015	Qtr 2	May	7	CA-2015-137512	1	FUR-TA-10001095	Chromacraft Round C
Furniture	Allentown	United States	CI-12010	Caroline Jumper	0.20	2016	Qtr 3	July	22	CA-2016-122392	1	FUR-FU-10002456	Master-Caster Door
Furniture	Amarillo	United States	DS-13180	David Smith	0.32	2017	Qtr 1	March	31	CA-2017-154807	1	FUR-BO-10002824	Bush Mission Pointe
Furniture	Amarillo	United States	JE-15745	Joel Eaton	0.30	2015	Qtr 4	October	15	CA-2015-139731	1	FUR-CH-10002024	HON 5400 Series Tra
Furniture	Amarillo	United States	NA-18530	Neoma Murtry	0.60	2016	Qtr 1	January	7	CA-2016-158806	1	FUR-FU-10004270	Executive Impressio
Furniture	Amarillo	United States	NR-18550	Nick Raffard	0.30	2016	Qtr 2	May	2	CA-2016-109400	1	FUR-CH-10003290	Office Star - Conten
Furniture	Anaheim	United States	BP-11185	Ben Peterman	0.00	2017	Qtr 4	December	29	CA-2017-146626	1	FUR-FU-10002501	Nu-Dell Executive Fr
Furniture	Anaheim	United States	EB-13705	Ed Braxton	0.20	2016	Qtr 2	June	14	CA-2016-128223	1	FUR-TA-10001771	Bush Cubic Conferen
Furniture	Anaheim	United States	KD-16615	Ken Dana	0.20	2015	Qtr 3	September	13	US-2015-129007	1	FUR-CH-10000195	Global Comet Stacki
Furniture	Anaheim	United States	KD-16615	Ken Dana	0.00	2015	Qtr 3	September	13	US-2015-129007	1	FUR-FU-10002379	Eldon Econoclast Ch
Furniture	Anaheim	United States	KD-16615	Ken Dana	0.00	2015	Qtr 3	September	13	US-2015-129007	1	FUR-FU-10004618	Tensor Computer M
Furniture	Anaheim	United States	KD-16615	Ken Dana	0.00	2015	Qtr 3	September	13	US-2015-129007	1	FUR-FU-10004973	Flat Face Poster Fram
Furniture	Anaheim	United States	WB-21850	William Brown	0.20	2016	Qtr 4	December	11	CA-2016-165330	1	FUR-CH-10003774	Global Wood Trimm
Furniture	Anaheim	United States	WB-21850	William Brown	0.20	2016	Qtr 4	December	11	CA-2016-165330	1	FUR-TA-10004619	Hon Non-Folding U
Furniture	Andover	United States	PS-18760	Pamela Stobbs	0.00	2016	Qtr 1	March	9	CA-2016-153269	1	FUR-CH-10002647	Situations Contoure
Furniture	Apple	United States	CK-12205	Chloris Katersmidt	0.20	2014	Qtr 3	July	28	CA-2014-131541	1	FUR-FU-10003623	OrtaProducts Ampli
Furniture	Apple Valley	United States	AJ-10795	Anthony Johnson	0.15	2017	Qtr 3	July	17	CA-2017-142342	1	FUR-BO-10002613	Atlantic Metals Mob
Furniture	Apple Valley	United States	PK-19075	Pete Kriz	0.20	2016	Qtr 4	December	16	CA-2016-118332	1	FUR-CH-10001708	Office Star - Contem
Furniture	Arlington	United States	BF-11020	Barry Franzbössch	0.30	2017	Qtr 3	September	8	US-2017-124779	1	FUR-CH-10003535	Global Armless Task
Furniture	Arlington	United States	BF-11020	Barry Franzbössch	0.60	2017	Qtr 3	September	8	US-2017-124779	1	FUR-FU-10001095	DAX Black Cherry W
Furniture	Arlington	United States	CB-12025	Cassandra Brandow	0.30	2015	Qtr 3	August	24	CA-2015-146563	1	FUR-TA-10001768	Hon Racestack Conf
Furniture	Arlington	United States	KH-16510	Keith Herrera	0.00	2015	Qtr 2	June	18	CA-2015-133242	1	FUR-FU-10003464	Seth Thomas 8 1/2"
Furniture	Arlington	United States	LC-16960	Lindsay Castell	0.00	2016	Qtr 4	October	20	CA-2016-105753	1	FUR-FU-10000246	Aluminum Document
Furniture	Arlington	United States	LE-16810	Laurel Elliston	0.00	2016	Qtr 2	May	19	CA-2016-157245	1	FUR-CH-10003748	Hon 4070 Series Pac
Furniture	Arlington	United States	MC-17590	Matt Collister	0.60	2014	Qtr 4	November	25	CA-2014-127446	1	FUR-FU-10000221	Master-Caster Door
Furniture	Arlington	United States	MC-17590	Matt Collister	0.30	2014	Qtr 4	November	25	CA-2014-127446	1	FUR-TA-10000577	Bretford CR4500 Ser
Total					1,561.09				9994				

View recovered files

Visualizations

Data

Build visual

Filters on this visual

Columns

Category is (All)

City is (All)

Count of Postal_Co... is (All)

Count of Row_ID is (All)

Country is (All)

Customer_ID is (All)

Customer_Name is (All)

Order_Date - Day is (All)

Order_Date - Month is (All)

Order_ID

Search

Category

City

Country

Customer_ID

Customer_Name

Discount

Order_Date

Order_ID

Postal_Code

Product_ID

Product_Name

Profit

Quantity

Region

Row_ID

Sales

Segment

Ship_Date

Ship_Mode

State

Sub_Category

Page 1

+