SMITH
DATATHON

Kickoff

April 17th, 2023

Agenda

https://go.umd.edu/datathon2023

Thank You

A special thanks to **Professor Bono** and **Professor Elmaghraby,** for letting Deloitte & KPMG co-host the 4th Annual Datathon as part of the Smith Analytics Consortium!

Core Consulting Series Quiz Winners

Congratulations to the following winners of the Core Consulting Series quizzes! We will contact you after the presentation concludes to deliver your prizes.

1. **Shiv Jethi**

2. **Seonwoo Kim**

3. **Jake Marmol**

4. **Anumta Ali**

5. **Maria Azam Shaikh**

Datathon | Robert H. Smith School of Business
Overview

Requirements

The Smith Analytics Consortium Annual Datathon enables students to team-up, showcase their data analytics skills, and sprint to the best solution. With the provided dataset, teams will have several days to model and visualize insights before final presentations and judging. Presentations will be evaluated using several criteria, ranging from technical impact to creativity in approach.

Technology

Data Visualization:
Tableau 2020.4 (or newer)
(let us know if you need access)

Data Analysis:
Google Colab
Open Source (R, Python, etc.)

Data

Property Data
To be downloaded from Datathon Canvas (ELMS) site
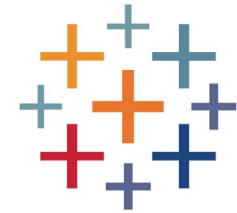
Submission

1. Packaged Tableau workbook (.twbx)

2. PowerPoint presentation

3. 8 min Zoom Recording Presentation (if a presentation is longer than 8 minutes the group will be disqualified)

Submission Criteria

A Single .zip File Containing:

Packaged Data Visualization	File containing the visualization + the data i.e., packaged Tableau (.twbx)
PowerPoint / Keynote Presentation	Presentation with your insights/solutions (Introduction of Problem / Opportunity, Findings, Next Steps/Art of the Possible)
Zoom Recording Presentation	Up to 8 Minute Zoom Recording Presentation

Teams must submit their Tableau workbook, PowerPoint Presentation and Zoom Recording in a .ZIP file to the Datathon ELMS site by 5pm on 04/26.

https://go.umd.edu/datathon2023

Schedule

| | Kick-off | Office Hours | Deadline | Final Presentations + Judging |

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	**Apr 17** **Kickoff / Overview** Problem and dataset are shared. **6:30-7:30 PM** ⭐ **You are here!**	**Apr 18**	**Apr 19**	**Apr 20** **VIRTUAL OFFICE HOURS** **6:00-7:00 PM**	**Apr 21**
		Teams work to analyze data, using Core Consulting Series skills, to deliver novel insight.			
Week 2	**Apr 24** **VIRTUAL OFFICE HOURS** **6:00-7:00 PM**	**Apr 25**	**Apr 26** **Submit .zip file for Round 1 of judging*** **5:00 PM**	**Apr 27** Students notified of 1st Round decisions by 9 PM	**Apr 28** **Final Presentations** Finalist teams present, winners selected, and prizes awarded **10:30 AM – 1:00 PM**
	Teams work to analyze data, using Core Consulting Series skills, to deliver novel insight.				

*Solutions eligible for judging will consist of 1 .zip file containing each team's Tableau Workbook, PowerPoint Presentation and Zoom Video Recording.

Scoring Rubric

Addressing the Questions: The team's solution addresses each of the questions/prompts asked of them and provides adequate support behind any assumptions made.

1 —— 2 —— 3 —— 4 —— 5 —— 6 —— 7 —— 8 —— 9 —— 10

Strongly Disagree   Neutral   Strongly Agree

Novelty of Insights: The solution contains original, impactful, actionable insights for the investors.

1 —— 2 —— 3 —— 4 —— 5 —— 6 —— 7 —— 8 —— 9 —— 10

Strongly Disagree   Neutral   Strongly Agree

Quality of the Methodology: The team logically structures and defends their problem-solving approach.

1 —— 2 —— 3 —— 4 —— 5 —— 6 —— 7 —— 8 —— 9 —— 10

Strongly Disagree   Neutral   Strongly Agree

Quality of Presentation: The team articulated their solution's business case to the judges at a client facing level.

1 —— 2 —— 3 —— 4 —— 5 —— 6 —— 7 —— 8 —— 9 —— 10

Strongly Disagree   Neutral   Strongly Agree

Diversity of Team: mixture of Undergrad/Graduate (1), Smith/Non-Smith (1), various Majors (1).

1 —— 2 —— 3

Score
____
____
____
____

Team Number

Grand Score Total

Case Background – NYC Apartment Rental Platform

1) **Background on the Short-Term Rental Industry**
   ➤ The global short-term vacation rental market size was last valued at 99.38B in 2021 and was expected to grow at a compound annual growth rate (CAGR) of 11.1% from 2022 to 2030.
   ➤ The growth is driven by the higher demand for staycations vs. hotels, rising expenditure on travel and tourism following COVID-19 recovery, and travelers' preferences for budget-friendly accommodations.

2) **Why NYC in Particular is Relevant**
   ➤ New York City is one of the largest tourist destinations in the world with 61 million people expected to visit in 2023 alone
   ➤ The increased desire for short term stays in NYC has been bolstered by remote work opportunities which has allowed many people to live in the Big Apple without fully realizing the expenses of long-term living in the city.

3) **The Opportunity that this Poses**
   ➤ This poses a lucrative opportunity to buy and rent out properties in New York City to meet the increasing demand for short term stays for flexible durations.

Case Overview

You are considering starting your own company that buys and then rents properties in NYC through a popular short term apartment rental platform. Given the dataset and any external data your company can find, pitch your business to investors who will be helping raise the capital needed by answering and addressing the following:

Your analysis should cover:

❑ What are the top 3 neighborhoods that your business sees as viable options to buy and rent in. Why those places?

❑ Give an analysis of your overall strategy explaining how many properties you will buy and rent in each place.

❑ How much capital do you need to raise from the investors based on the costs associated with your units?

❑ Develop a 5-year plan to recoup your investment and highlight the point in time where your company will break even. If 5 years is not feasible, give your extended recoupment plan and explain why 5 years was not feasible.

❑ What will be the average revenue per property in order to break even according to your 5 year recoupment plan?

❑ What technology solution(s) can you include in your recommendations that would be able to support your effort in successfully starting your short-term rental property group?

❑ Propose a way to differentiate your offerings in each of the neighborhoods using information about each of the neighborhoods found online.

Here comes…the Data

Data	Link
Property Data	https://tinyurl.com/UMDDatathon2023ELMS

Data Dictionary

Column	Meaning
ID	property's unique identifier for the listing
NAME	Name of the listing - There were several no-name listings which have been named "No-Name" They should not be considered as one property.
HOST_ID	property's unique identifier for the host/user
HOST_NAME	Name of the host. Usually just the first name(s).
NYC_BOROUGH	Name of the borough in which the property is located
NEIGHBORHOOD	NYC neighborhood that the property is in
LATITUDE	Uses the World Geodetic System (WGS84) projection for latitude and longitude.
LONGITUDE	Uses the World Geodetic System (WGS84) projection for latitude and longitude.
INSTANT_BOOKABLE	[t=true; f=false]. Whether the guest can automatically book the listing without the host requiring to accept their booking request. An indicator of a commercial listing.
CANCELLATION_POLICY	The cancellation policy stringency level established in the dataset. The blanks should be considered as not having a set policy for cancellation.
ROOM_TYPE	[Entire home/apt|Private room|Shared room|Hotel] All homes are grouped into the following three room types: Entire place / Private room / Shared room Entire places are best if you're seeking a home away from home. With an entire place, you'll have the whole space to yourself. This usually includes a bedroom, a bathroom, a kitchen, and a separate, dedicated entrance. Hosts should note in the description if they'll be on the property or not (ex: "Host occupies first floor of the home"), and provide further details on the listing. Private rooms are great for when you prefer a little privacy, and still value a local connection. When you book a private room, you'll have your own private room for sleeping and may share some spaces with others. You might need to walk through indoor spaces that another host or guest may occupy to get to your room. Shared rooms are for when you don't mind sharing a space with others. When you book a shared room, you'll be sleeping in a space that is shared with others and share the entire space with other people. Shared rooms are popular among flexible travelers looking for new friends and budget-friendly stays.

Data Dictionary Continued

Column	Meaning
CONSTRUCTION_YEAR	Year the property was built
PRICE	daily price in local currency
SERVICE_FEE	The service fee required per stay at the property
MINIMUM_NIGHTS	The minimum number of nights required when booking the property. If the number is blank there is not a minimum number of nights set by the property owner.
NUMBER_OF_REVIEWS	The number of reviews the listing has.
LAST_REVIEW	The date of the last/newest review
REVIEWS_PER_MONTH	The number of reviews the listing has over the lifetime of the listing
HOUSE_RULES	Guidelines set by the property owner that the renter must abide by while they are staying at the property

Technical Support

Facing a technical issue? Can't access the data? Tableau won't load? Reach out to the tech support email box below and CC Abe Gellman (agellman@deloitte.com) for help!

umddatathontechinquiry@gmail.com

Note: To provide an equal playing field, we will not be providing code guidance or code/dashboard/PowerPoint review in support of your solution via this email. Support will be provided for technical issues only.

Additional Resources

Topic	Link/ Resource	Resource Description
Data Visualization	Tableau Desktop: https://www.tableau.com/learn/training	Training resources for two of the leading data visualization platforms on the market today.
Google Colab	https://research.google.com/colaboratory/faq.html	Frequently asked questions regarding Google Colab and it's capabilities
Core Consulting Series (CCS) Modules	https://tinyurl.com/UMDDatathon2023ELMS	The three Core Consulting Series Modules presented on 04/14
Technical Support Mailbox	umddatathontechinquiry@gmail.com CC agellman@deloitte.com	Technical support resource for any issues pertaining to access to data, technology issues, etc.
Pandas Merge	https://tinyurl.com/pandasmerge	Documentation on merging Pandas Dataframes based on table keys.

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Questions

1 – Add Datathon Files to MyDrive

1. Open the Shared [Datathon ELMS site](#)

2. Download property_data.xlsx

3. Upload property_data.xlsx to a Google Drive location

Open My Drive to verify that the files have been

Successfully added.
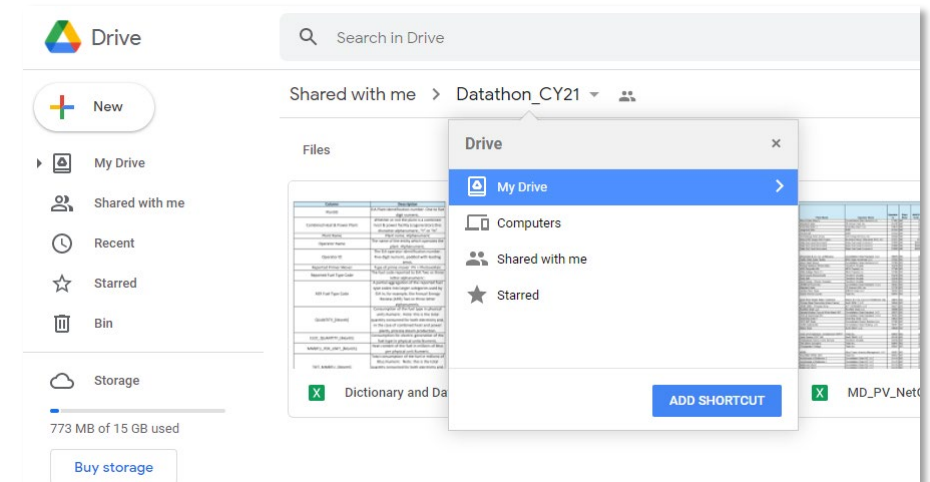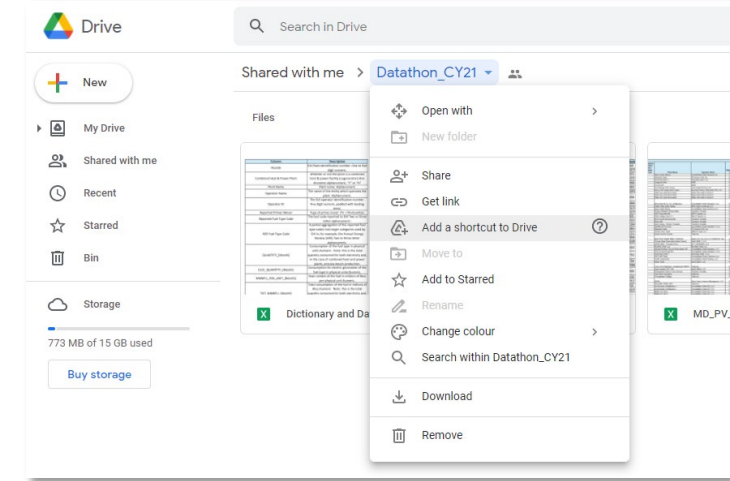
2– Follow Notebook Directions in 'Intro to CoLab_Datathon_ipynb' to Connect CoLab

To facilitate common scenarios you may face in Google CoLab, we created an example notebook. The notebook will walk you through the following:

- Mounting Google Drive/Connecting to Google Drive
- Setting the directory
- Checking Google Drive Contents to ensure necessary files are present
- Importing data

Access the Intro Datathon Colab Notebook – HERE
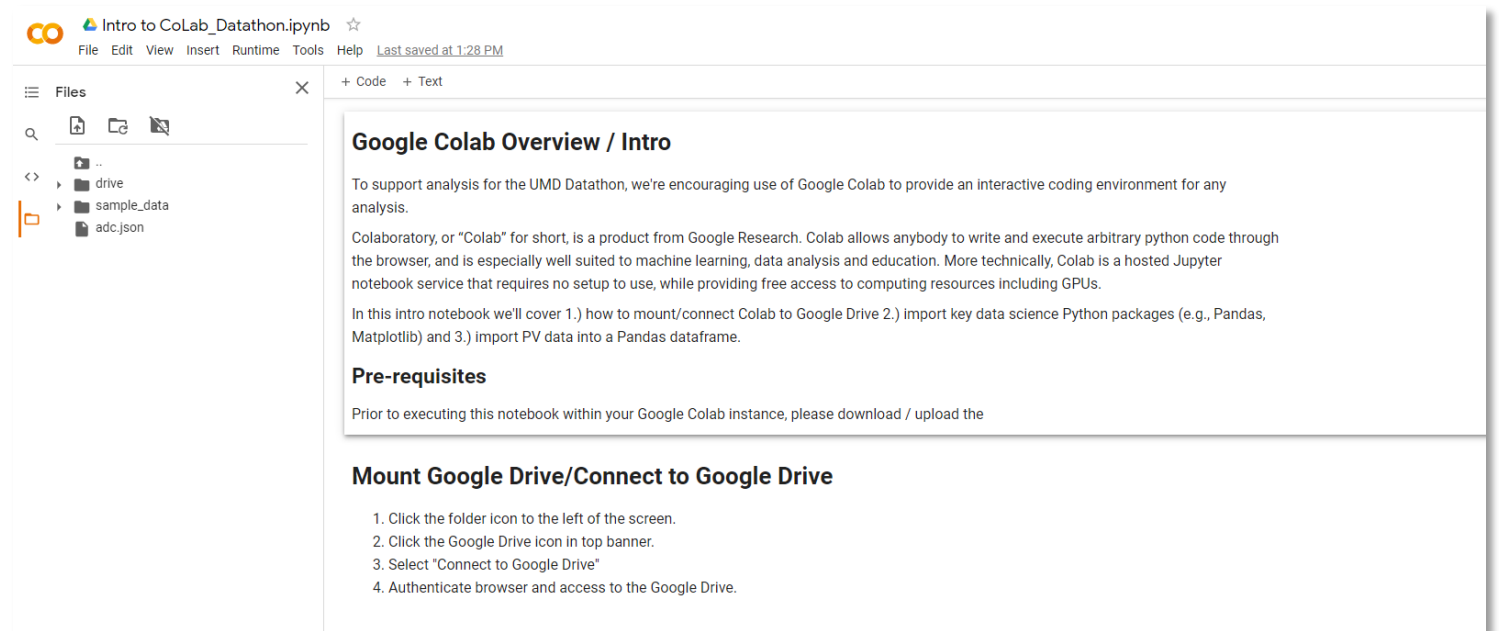
How To:
Connect Tableau to Google Drive

1 – Open Tableau and Select Data Connector

This guide will walk you through how to connect Tableau to the Google Drive (once downloaded and uploaded to your team's drive). Prior to running through the following steps, please download and store the [Datathon data](#) within your own Google Drive account.

Next, open Tableau and on the left side under "**To a Server**" select "**Google Drive**." If not shown in the list, select "**More...**" and identify "Google Drive" from the list of options.
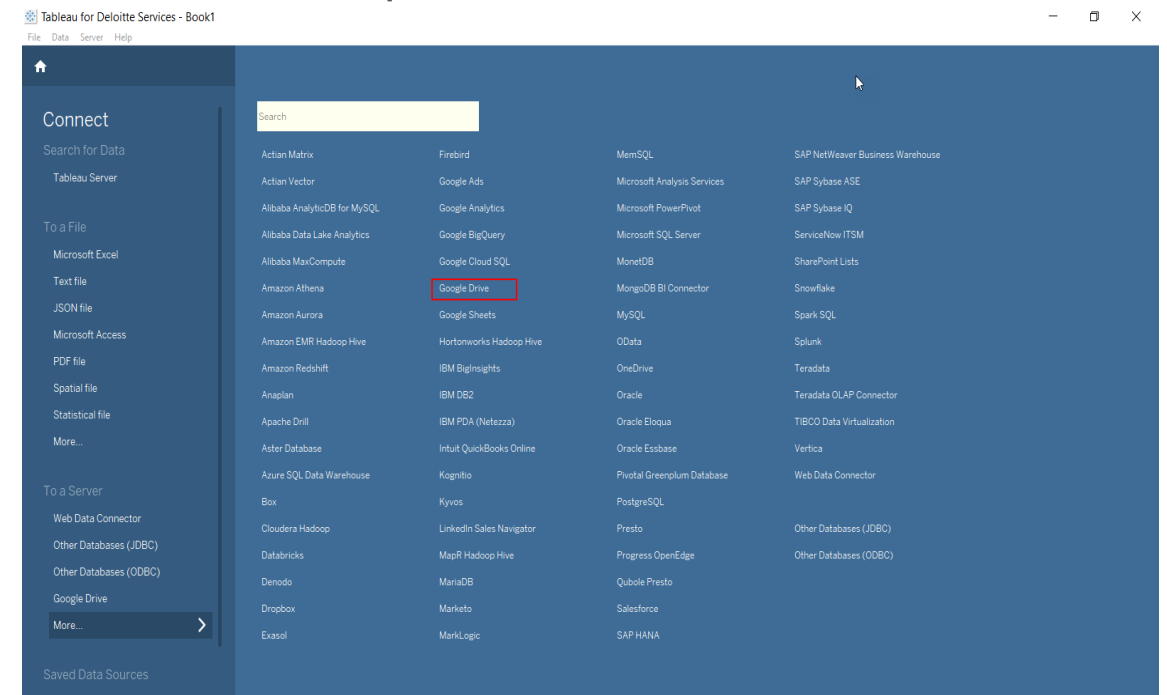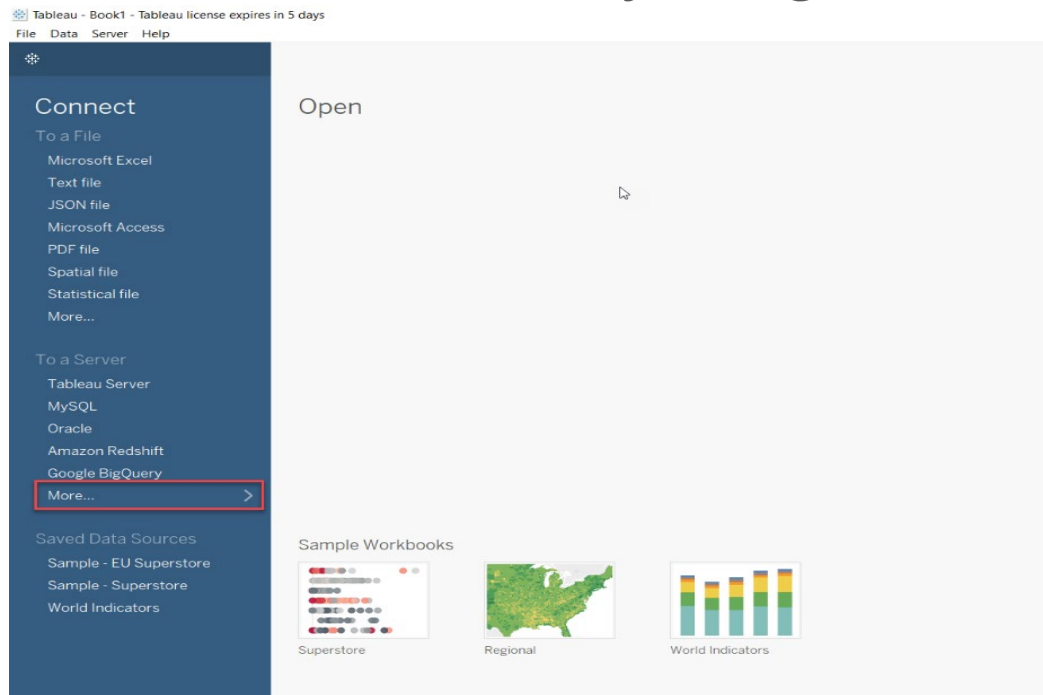
2a – Log-in to Google Account (student email)

After selecting "Google Drive" from the options menu, you'll be prompted to log-in to your Google account. Please use the email you signed-up for the competition with (i.e. *umd.edu, *@terpmail.umd.edu)**
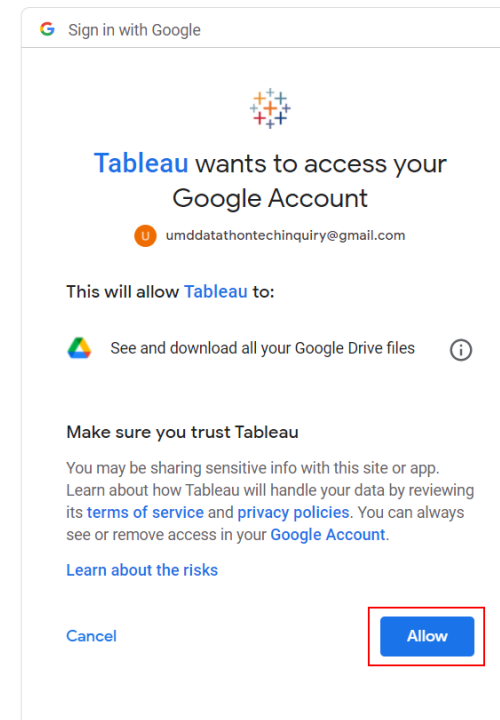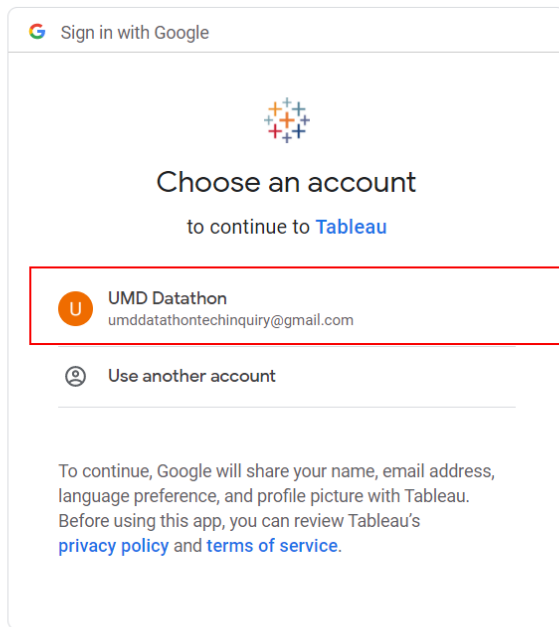
2b – Close out of Browser; Access Tableau

Once signed into your Google Account, you'll be prompted that the browser window will close, you may close your browser at this moment.

Tableau created this window to authenticate. It is now safe to close it.

On the task bar, locate the 'Tableau' application and click.
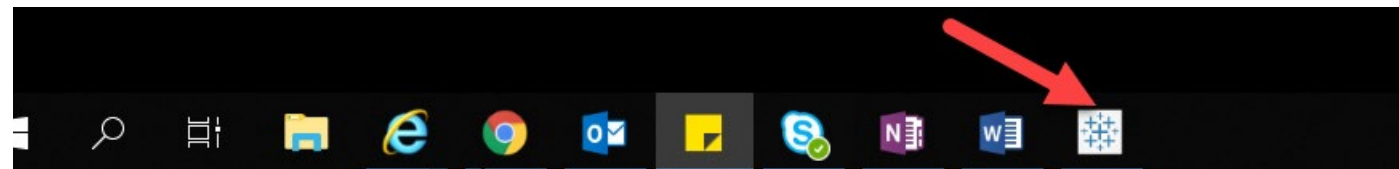
3 – Connect to the Datathon Data in Google Drive

Navigate back to Tableau and locate the 'property_data.xlsx' file within your Google Drive. Select the file and then click 'Connect' to connect Tableau to the data.
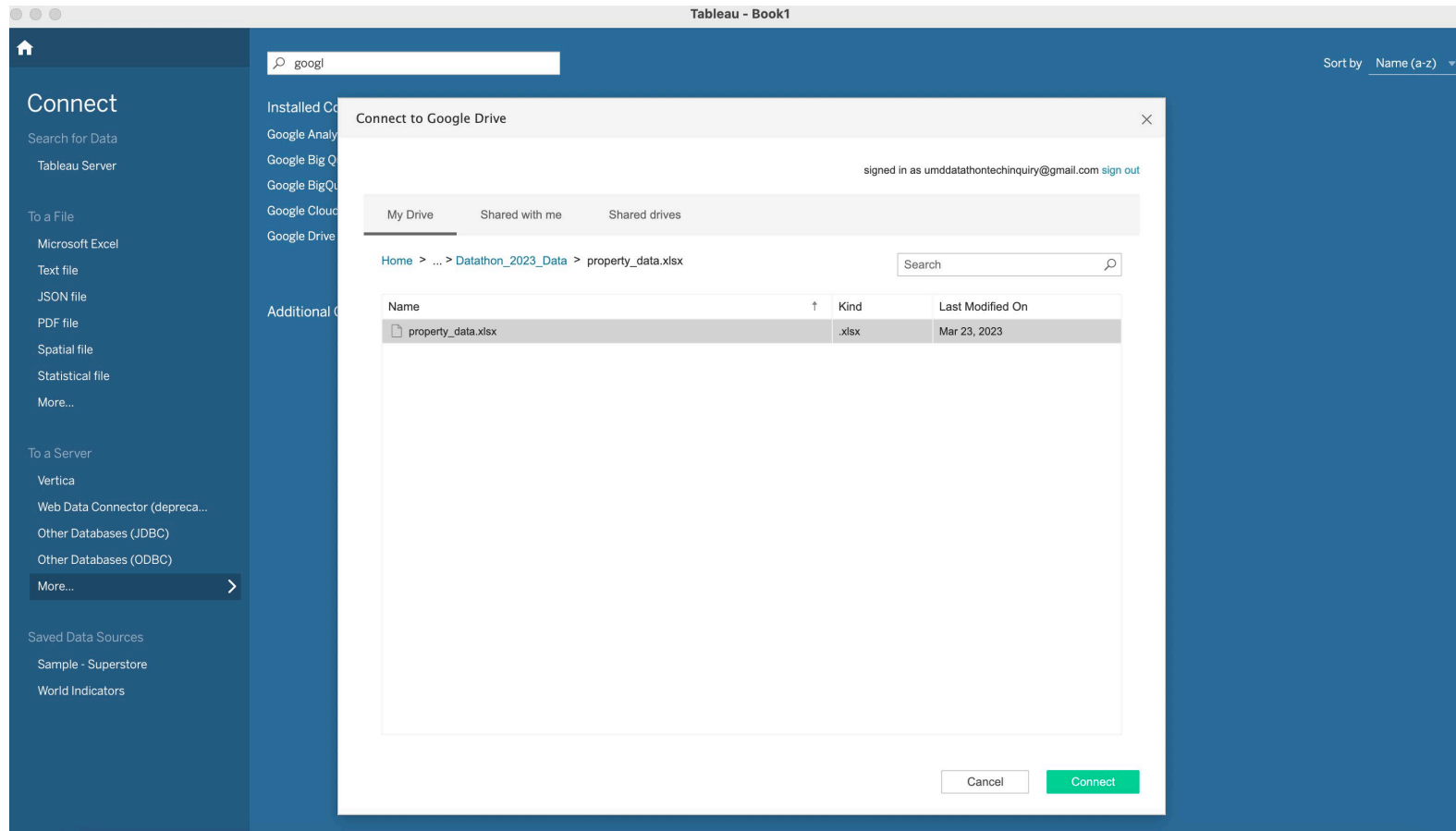
4 – Add a Table

After confirming the dataset, the one table should populate on the left panel: **Property Data is pictured below** Click and drag the table into the top input area, and the data should populate into the table view.

Congrats, you've connected Tableau to Google Drive! Good luck with your analysis.