

COVID19- NATIONAL DEPT ANALYSIS & REPORTING

FINAL PROJECT

bidd330 2024

team gold



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AGENDA



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Presentation Opening

- Team Introductions
- Data Selection
- BI Questions

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Visualizing Data with Power BI

- ETL
- Data Model
- Dashboard
- National Dept
- COVID- 19

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Data Engineering

- Proof of Concept
- Production Method

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4

Closing Thoughts

- Advantages, Challenges & Lessons Learned.
- Questions

GOLD TEAMMEMBERS



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DATA



Dept to the Penny

The data reflects intragovernmental holdings and publicly held debt. Outstanding public dept is reported daily. The data is comprised of :

- Treasury Bills, Notes, Bonds
- Treasury Inflation-Protected Securities (TIPS)
- Floating Rate Notes (FRNs)
- Federal Financing Bank (FFB) securities
- Domestic Series, Foreign Series, State and Local Government Series (SLGS)
- U.S. Savings Securities, and Government Account Series (GAS) securities

Bing Covid-19

Covid-19 data is sourced from Center for Disease Control, World Health Organization, European Centre for Disease Control and other. The data is updated daily and is composed of:

- Confirmed cases
- Deaths
- Confirmed recoveries

All data is geographically linked and listed by date.

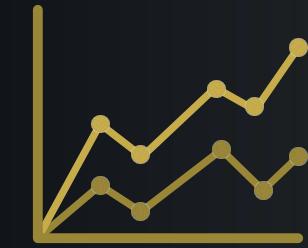


BI QUESTIONS

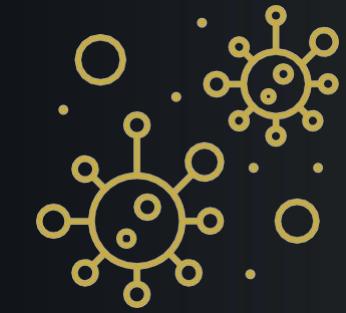
Our goal is to provide end users with insights to COVID-19 & USA National Debt data and to aid end users in identifying potential correlation.

teamgold20

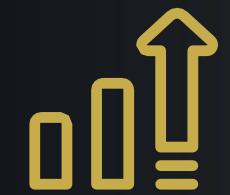
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USA National
Dept Trends
Over Time.



COVID-19
Trends Over
Time



Identifying potential correlations between COVID-19 and the National debt.

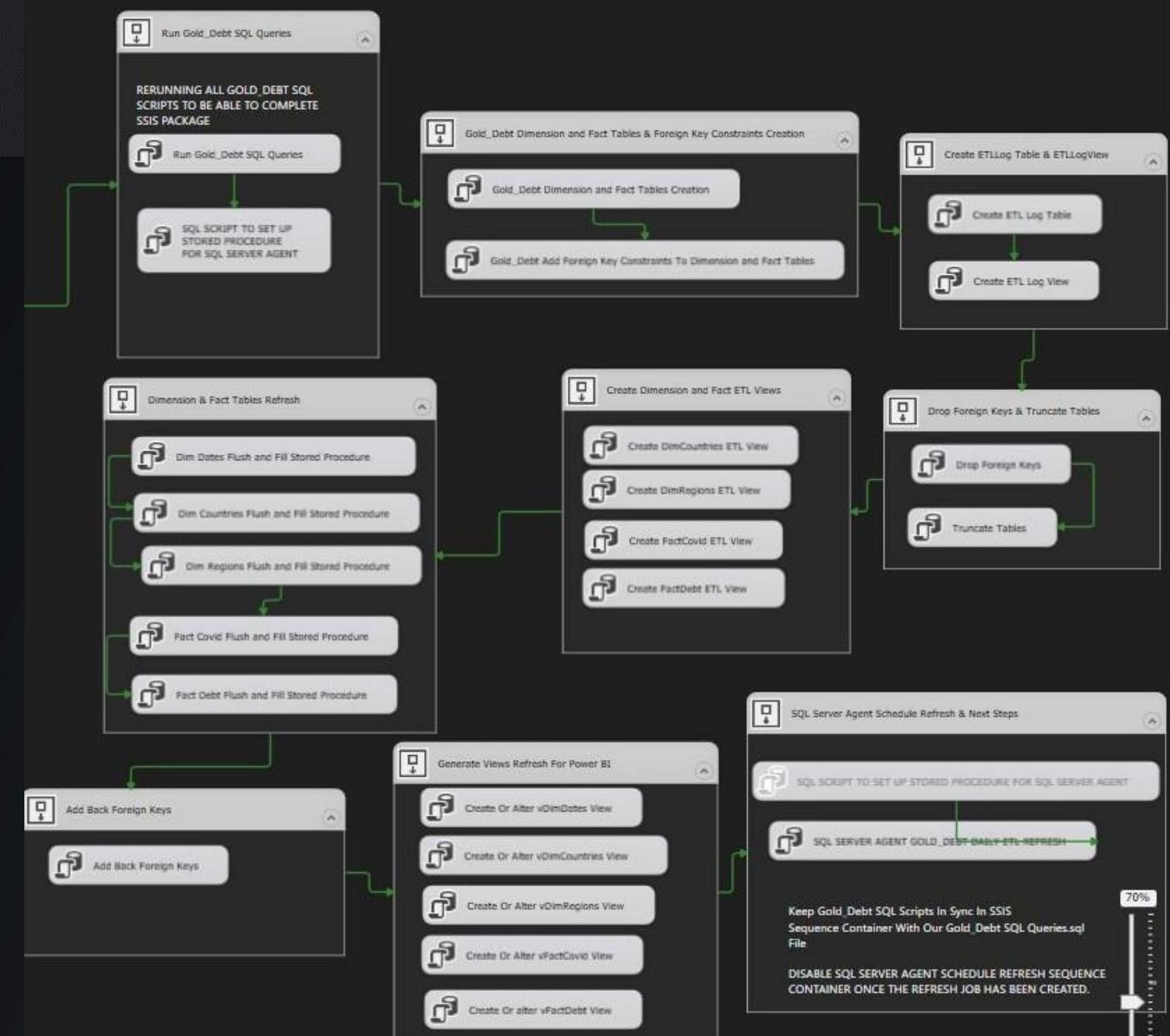
DATAENGINEERING

SQL Server Integration Services (SSIS) Proof of Concept



DATA ENGINEERING

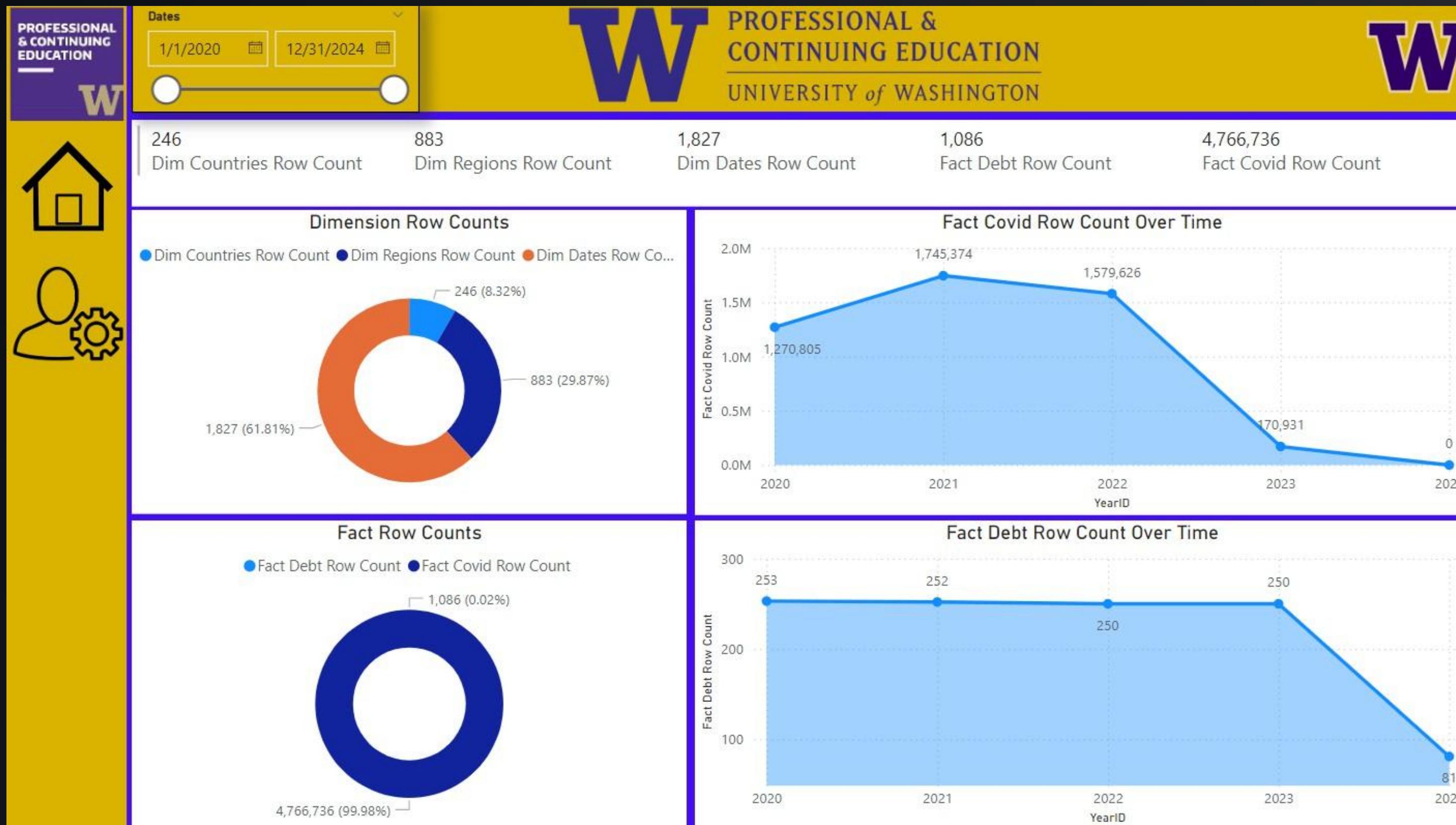
SQL Server Integration Services (SSIS) Production Method



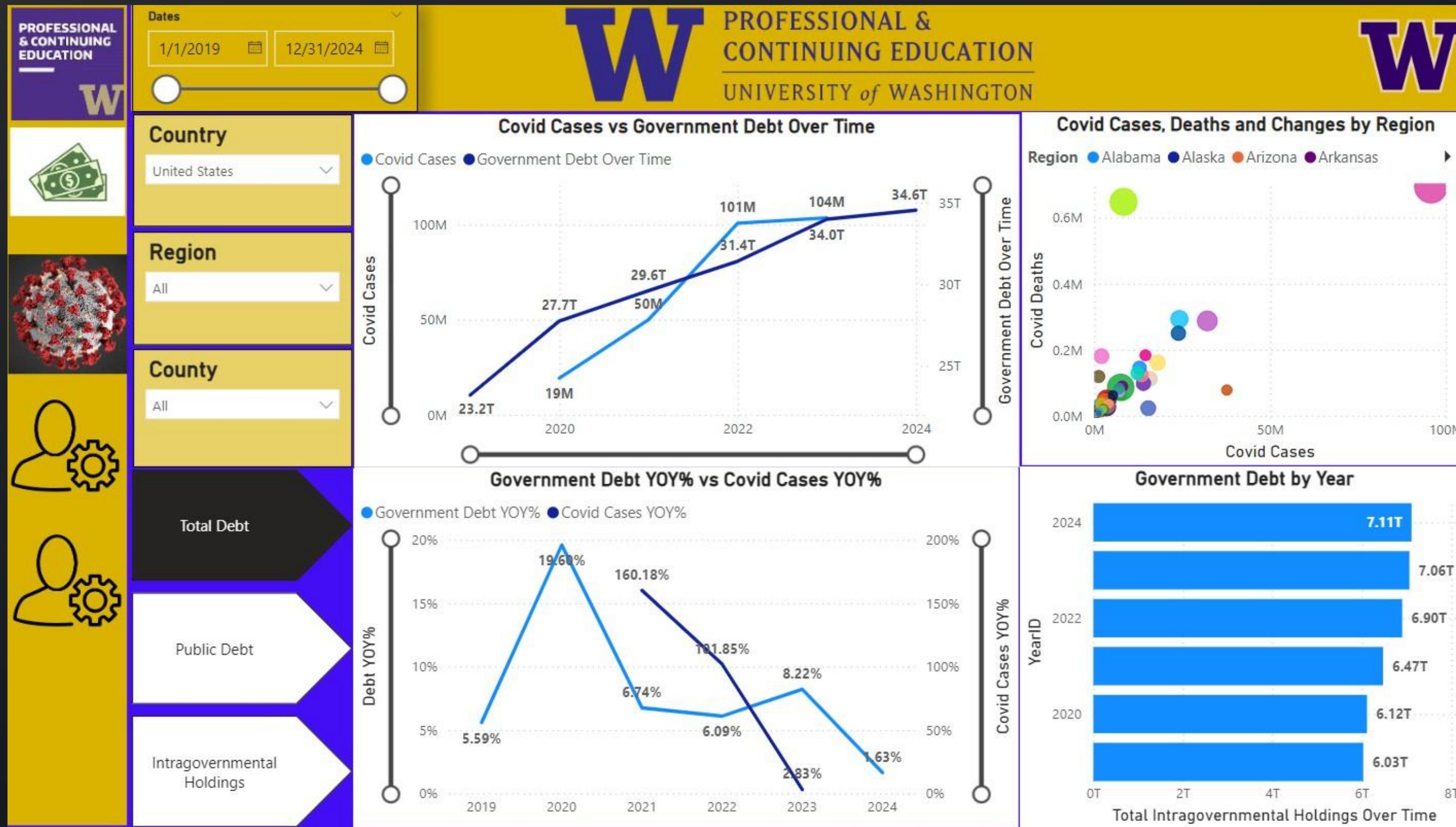
ADMIN ETL LOG

PROFESSIONAL & CONTINUING EDUCATION		Dates	W PROFESSIONAL & CONTINUING EDUCATION		W	
1/1/2024	12/31/2024					
	75	ETL Log Count	 11	ETL Log Errors	 64	ETL Log Successes
				06/02/2024 16:35:00	ETL Log Last Error Day/Time	
				-2:2:49	ETL Log Day/Time Since Errors	
				06/02/2024 17:22:00	ETL Log Last Success Day/Time	
ETLLogID	ETLDate	ETLTime	ETLAction	ETLLogMessage		
75	Sunday, June 02, 2024	5:22:00 PM	sp_ETLAddForeignKeyConstraints	Foreign Keys replaced on all tables		
74	Sunday, June 02, 2024	5:22:00 PM	sp_ETLFillFactDebt	FactDebt filled		
73	Sunday, June 02, 2024	5:22:00 PM	sp_ETLFillFactCovid	FactCovid filled		
72	Sunday, June 02, 2024	5:21:00 PM	sp_ETLFillDimRegions	DimRegions filled		
71	Sunday, June 02, 2024	5:21:00 PM	sp_ETLFillDimCountries	DimCountries filled		
70	Sunday, June 02, 2024	5:21:00 PM	sp_ETLFillDimDates	DimDates filled		
69	Sunday, June 02, 2024	5:21:00 PM	sp_ETLTruncateTables	Tables data removed		
68	Sunday, June 02, 2024	5:21:00 PM	sp_ETLDropForeignKeyConstraints	Foreign Keys dropped		
67	Sunday, June 02, 2024	4:38:00 PM	sp_ETLAddForeignKeyConstraints	Foreign Keys replaced on all tables		
66	Sunday, June 02, 2024	4:38:00 PM	sp_ETLFillFactDebt	FactDebt filled		
65	Sunday, June 02, 2024	4:38:00 PM	sp_ETLFillFactCovid	FactCovid filled		
64	Sunday, June 02, 2024	4:38:00 PM	sp_ETLFillDimRegions	DimRegions filled		
63	Sunday, June 02, 2024	4:38:00 PM	sp_ETLFillDimCountries	DimCountries filled		
62	Sunday, June 02, 2024	4:38:00 PM	sp_ETLFillDimDates	DimDates filled		
61	Sunday, June 02, 2024	4:38:00 PM	sp_ETLTruncateTables	Tables data removed		
60	Sunday, June 02, 2024	4:38:00 PM	sp_ETLDropForeignKeyConstraints	Foreign Keys dropped		
59	Sunday, June 02, 2024	4:35:00 PM	sp_ETLFillFactCovid	Conversion failed when converting date and/or time from character string.		
58	Sunday, June 02, 2024	4:35:00 PM	sp_ETLFillFactCovid	Conversion failed when converting date and/or time from character string.		
57	Sunday, June 02, 2024	4:32:00 PM	sp_ETLFillFactCovid	Conversion failed when converting date and/or time from character string.		
56	Sunday, June 02, 2024	4:21:00 PM	sp_ETLFillFactCovid	Conversion failed when converting date and/or time from character string.		
55	Sunday, June 02, 2024	4:18:00 PM	sp_ETLFillFactCovid	Conversion failed when converting date and/or time from character string.		
54	Sunday, June 02, 2024	4:17:00 PM	sp_ETLFillFactCovid	Conversion failed when converting date and/or time from character string.		
53	Sunday, June 02, 2024	3:37:00 PM	sp_ETLAddForeignKeyConstraints	Foreign Keys replaced on all tables		

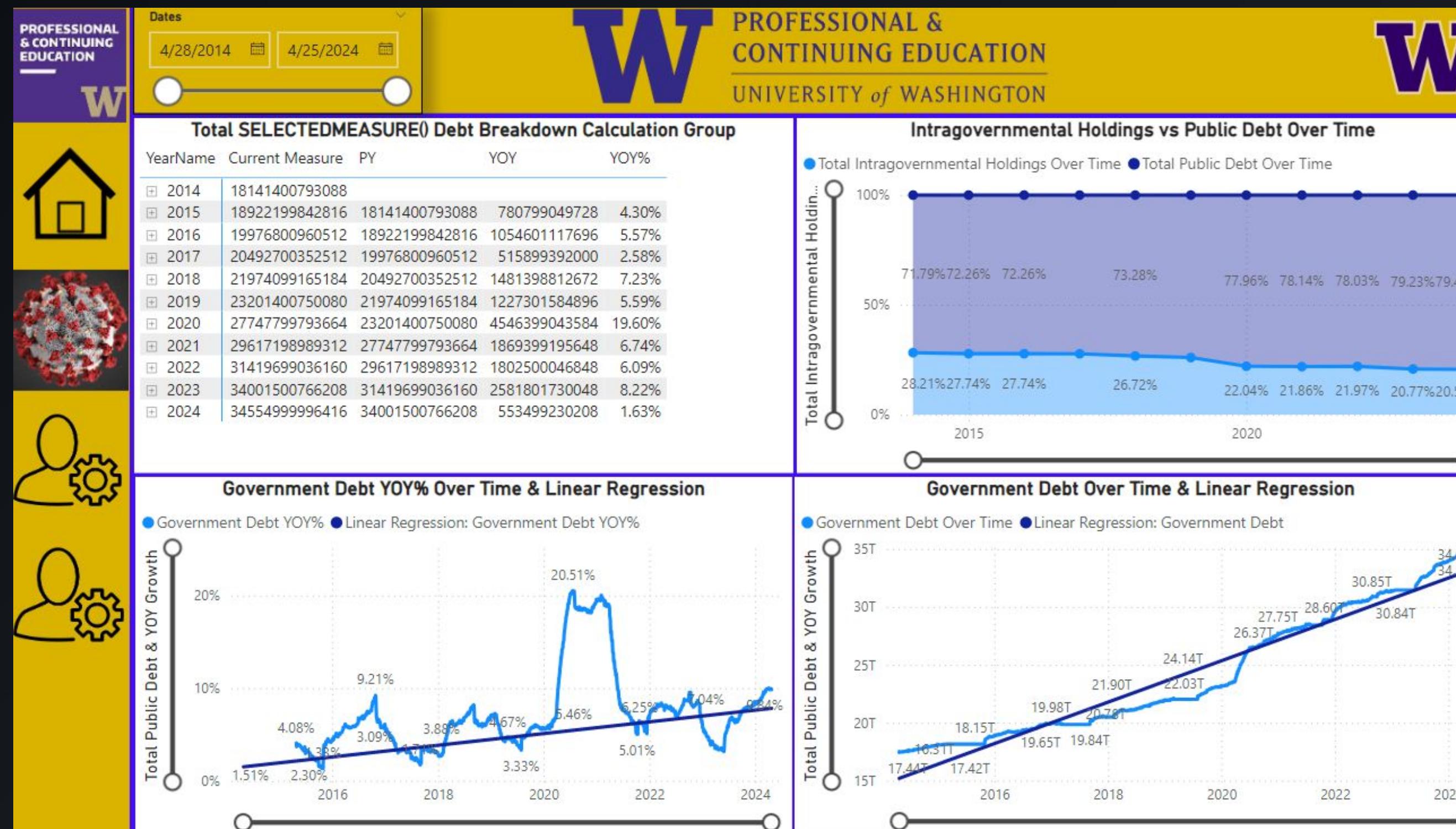
ADMIN DATA MODEL



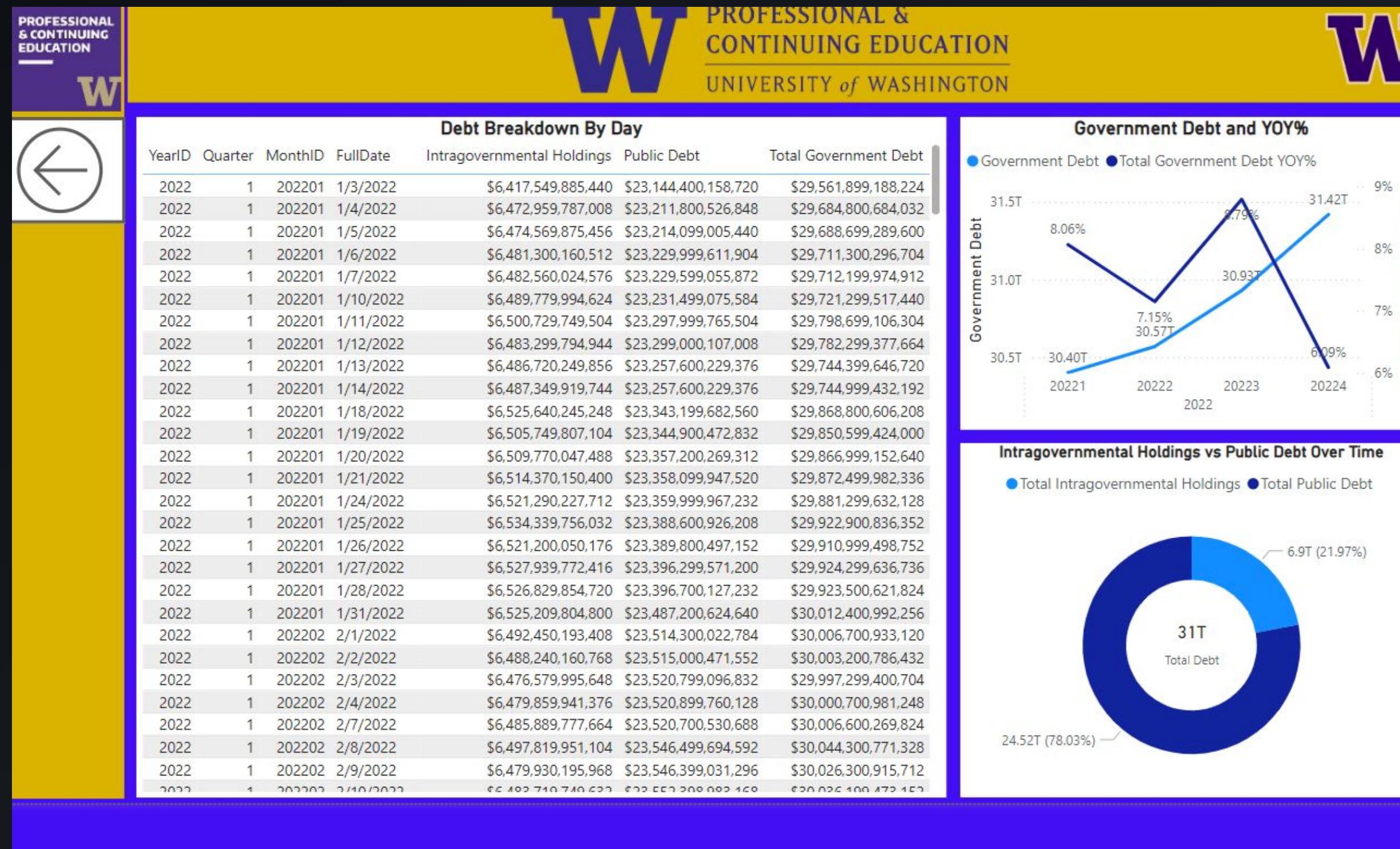
COVID-19 VS NATIONAL DEBT



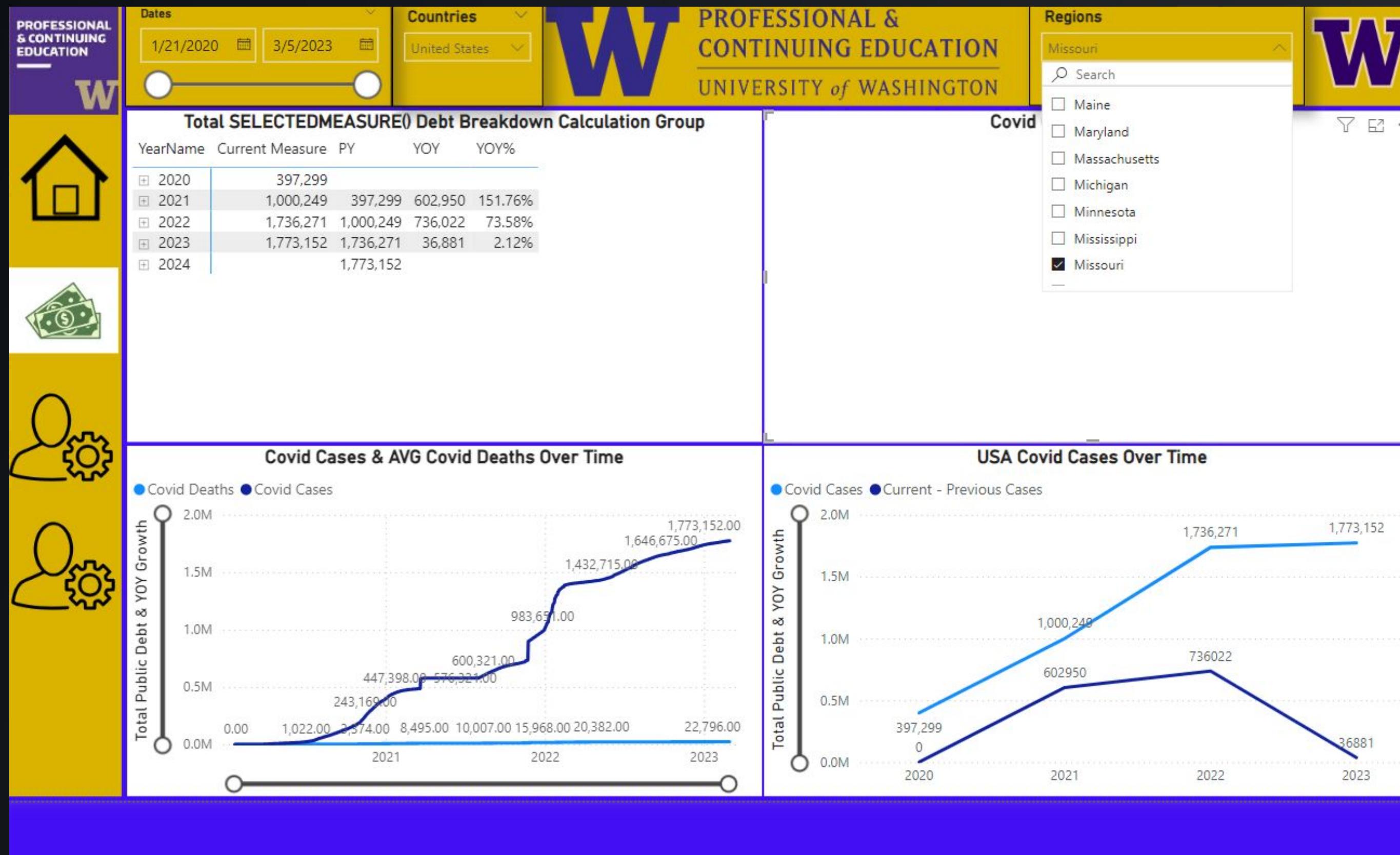
DEPT ANALYSIS OVERTIME



DEPT ANALYSIS Drill Through



COVID- 19 ANALYSIS



COVID-19 ANALYSIS Drill Through

W PROFESSIONAL & CONTINUING EDUCATION UNIVERSITY of WASHINGTON

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PROFESSIONAL & CONTINUING EDUCATION

UNIVERSITY of WASHINGTON

YearID Quarter MonthID FullDate Confirmed Confirmed_Change Deaths Recovered Admin_Region_1

2022	1	202201	1/1/2022	1	0	0	0	
2022	1	202201	1/1/2022	1	0	0	0	Tibet
2022	1	202201	1/1/2022	2	0	0	0	
2022	1	202201	1/1/2022	3	0	0	0	
2022	1	202201	1/1/2022	5	0	0	0	
2022	1	202201	1/1/2022	7	0	1	0	
2022	1	202201	1/1/2022	8	0	0	0	
2022	1	202201	1/1/2022	9	0	2	0	North Holland
2022	1	202201	1/1/2022	24	0	0	0	
2022	1	202201	1/1/2022	27	0	0	0	
2022	1	202201	1/1/2022	29	0	1	0	Nebraska
2022	1	202201	1/1/2022	30	0	0	0	Qinghai
2022	1	202201	1/1/2022	53	1	1	0	Nebraska
2022	1	202201	1/1/2022	55	0	0	0	Bâshehr
2022	1	202201	1/1/2022	56	0	0	0	North Dakota
2022	1	202201	1/1/2022	56	0	1	46	San Jose
2022	1	202201	1/1/2022	57	0	1	0	Nebraska
2022	1	202201	1/1/2022	58	0	4	0	New Mexico
2022	1	202201	1/1/2022	61	0	1	0	Nebraska
2022	1	202201	1/1/2022	68	0	0	0	Chahar Mahall va Bakhtiari
2022	1	202201	1/1/2022	69	0	0	0	Colorado
2022	1	202201	1/1/2022	70	0	0	0	Nebraska
2022	1	202201	1/1/2022	71	0	2	0	Nebraska
2022	1	202201	1/1/2022	73	0	0	0	Kohgiluyeh va Buyer Ahmad
2022	1	202201	1/1/2022	84	0	1	0	Nebraska
2022	1	202201	1/1/2022	90	0	5	0	Nebraska
2022	1	202201	1/1/2022	93	0	0	0	Nebraska
2022	1	202201	1/1/2022	98	0	3	0	Nebraska

Covid Cases & YOY% By Month

Month	Covid Cases	Total Covid Cases YOY%
January - 2022	0.38bn	280.19%
February - 2022	0.43bn	264.36%
March - 2022	0.49bn	277.70%
April - 2022	0.51bn	238.04%
May - 2022	0.53bn	190.05%
June - 2022	0.54bn	164.03%
July - 2022	0.57bn	155.90%
August - 2022	0.60bn	145.35%
September - 2022	0.62bn	129.63%
October - 2022	0.63bn	145.35%
November - 2022	0.64bn	129.63%
December - 2022	0.66bn	300%

Covid Confirmed Cases vs Deaths

Category	Value	Percentage
Covid Cases	660M	0.75%
Covid Deaths	886M	99.25%

ADVANTAGES, CHALLENGES & LESSONS LEARNED



Challenge

COVID-19 data set required exploratory data analysis to perform calculations.



Advantage

The size of the data and the date granularity.



Challenge

Limited time and difficulty staying connected.



Advantage

Complimentary skills and positive team dynamic.

QUESTIONS

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