

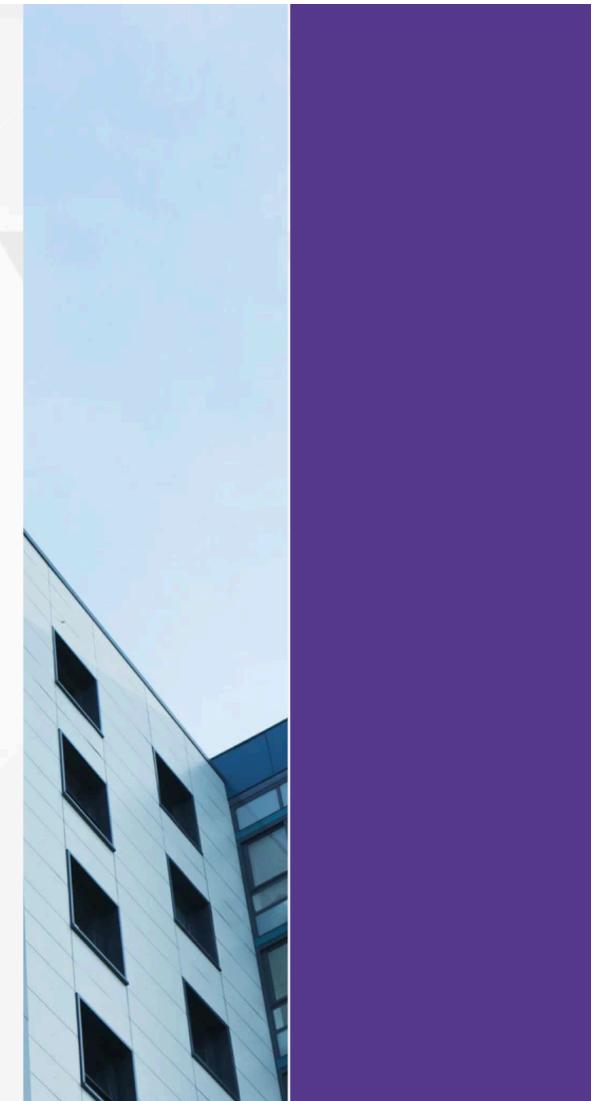
DELTA REPORT

**Data Warehouse with Dimensional
Modeling for Financial Data Analysis**

AMAZING EKEH

INTRODUCTION

- This presentation provides insights into the development, implementations, and advancements of a data warehouse system focusing on dimensional modeling for financial data analysis.
- The report offers a concise overview of the designs, modifications, updates, and improvements undertaken, aligning with organizational objectives and enhancing transparency.
- Stakeholders will gain valuable insights into the project's evolution, reinforcing alignment with strategic goals.



DATASET 1

HISTORICAL STOCK DATA (1925 - 2023)

Before ETL Processes

This image provides a visual representation of the dataset's structure and contents, offering insight into the format and organization of the historical stock data before Extraction, Transformation, and Loading (ETL) process.

Symbol	Name	Last Sale	Net Change	% Change	Market Cap	Country	IPO Year	Volume	Sector	Industry	
2	A	Agilent Technologies Inc. Common Stock	\$19.55	1.06	5.81%	3884213163	United States	1999	1768216	Industrials	Electrical Products
3	AA	Alcoa Corporation Common Stock	\$26.70	1.36	-5.47%	39053380	China	2008	6818046	Industrials	Aluminum
4	AACG	ATA Creativity Global American Depository Shares	\$16.70	-0.05	-0.40%	4794225033	United States	2016	5798	Real Estate	Other Consumer Services
5	AACI	Armeda Acquisition Corp. I Common Stock	\$10.99	0	0.00%	0	United States	2021	2	Finance	Blank Checks
6	AACT	Ares Acquisition Corporation II Class A Ordinary Share	\$10.55	0.01	0.10%	0	United States	2023	15608	Finance	Blank Checks
7	AADI	Aadi Bioscience Inc. Common Stock	\$2.07	0.09	4.55%	50768530	United States		237144	Health Care	Biotechnology: Pharmaceutical Preparations
8	AAGR	African Agriculture Holdings Inc. Common Stock	\$0.75	-0.004	-0.53%	18766563	United States	2021	86151	Finance	Finance: Consumer Services
9	AAGRW	African Agriculture Holdings Inc. Warrant	\$0.01	-0.0082	-41.00%	296844	United States	2021	6829	Finance	Finance: Consumer Services
10	AAL	American Airlines Group Inc. Common Stock	\$15.54	0.26	1.70%	101749209291	United States	2016	25211720	Consumer Discretionary	Air Freight/Delivery Services
11	AAMC	American Asset Management Corp. Common Stock	\$4.13	0.02	0.49%	111451873	United States		5201	Finance	Real Estate
12	AAME	Americo America Corp. Common Stock	\$2.12	0.02	0.93%	55400000	United States	2016	2300	Finance	Utilities
13	AAN	Aarons Holdings Company Inc. Common Stock	\$6.52	-1.94	-18.55%	258405525	United States	2020	961540	Miscellaneous	Diversified Commercial Services
14	AAOI	Applied Optoelectronics Inc. Common Stock	\$15.42	0.69	4.68%	592098471	United States	2013	3206302	Technology	Semiconductors
15	AAON	AAON Inc. Common Stock	\$58.82	0.57	0.67%	6972433628	United States		332452	Industrials	Industrial Machinery/Components
16	AAP	Advance Auto Parts Inc.	\$64.75	4.41	7.31%	3852753853	United States	2016	2976658	Consumer Discretionary	Auto & Home Supply Stores
17	AAPL	Apple Inc. Common Stock	\$182.63	1.47	0.81%	282015E+12	United States	1980	54210072	Technology	Computer Manufacturing
18	AAT	American Assets Trust Inc. Common Stock	\$21.25	0.23	1.09%	1294035453	United States	2011	188141	Real Estate	Real Estate Investment Trusts
19	AAU	Almaden Minerals Ltd. Common Shares	\$0.14	0.0004	0.22%	18566057	Canada	2011	268417		
20	AB	AllianceBernstein Holding LP. Units	\$33.75	0.24	0.72%	3858843071	United States		233187	Finance	Investment Managers
21	ABAT	Abbot Laboratories Technology Company Common Stock	\$3.01	0.01	0.33%	111451873	United States	2016	2300	Finance	Pharmaceuticals and Biotech
22	ABBV	AbbVie Inc. Common Stock	\$178.99	0.18	0.10%	316101E+11	United States	2012	3888511	Health Care	Biotechnology: Pharmaceutical Preparations
23	ABC	Ameris Bancorp Common Stock	\$45.43	-0.03	-0.07%	313703131	United States	1994	31856	Finance	Major Banks
24	ABCL	AbCellera Biologics Inc. Common Shares	\$5.12	0.17	3.43%	1481502030	Canada	2020	2588630	Health Care	Pharmaceuticals and Biotechnology
25	ABEO	Abiona Therapeutics Inc. Common Stock	\$7.35	-0.19	-2.52%	182083880	United States		622708	Health Care	Biotechnology: Pharmaceutical Preparations
26	ABEV	Ambev S.A. American Depository Shares (Each represent 200 common shares)	\$2.66	0.07	2.70%	4189576824	Brazil	2013	13832062	Consumer Staples	Beverages (Production/Distribution)
27	ABG	Asbury Automotive Group Inc Common Stock	\$21.00	0.87	0.41%	4362402864	United States	2002	194918	Consumer Discretionary	Other Specialty Stores
28	ABIO	ARCA biopharma Inc. Common Stock	\$1.66	0.04	2.42%	24506932	United States		26259	Health Care	Biotechnology: In Vitro & In Vivo Diagnostic Sub
29	ABUS	Abacus Life Inc. Class A Common Stock	\$11.94	-0.13	-1.08%	756396887	United States	2020	39780	Finance	Investment Managers
30	ABLL	Abellon Inc. Class A Preferred Rate Senior Notes due 2025	\$0.51	-0.12	-2.29%	15866057	United States		26259	Finance	
31	ABLW	Abacus Life Inc. Warrant	\$0.70	-0.03	-3.47%	44020127	United States	2020	69007	Finance	Investment Managers
32	ABLV	Abile View Global Inc. Class B Ordinary Shares	\$3.02	0.02	0.67%	12702484	China		26293		
33	ABLV	Abile View Global Inc. Warrant	\$0.02	-0.0107	-32.62%	336139	China		2800		
34	ABM	ABM Industries Incorporated Common Stock	\$41.06	0.23	0.56%	2598399528	United States		563335	Finance	Diversified Commercial Services
35	ABNB	Arbinc Inc. Class A Common Stock	\$152.06	2.79	1.87%	98392653568	United States	2020	462153	Consumer Discretionary	Hotels/Resorts
36	ABOS	Acumen Pharmaceuticals Inc. Common Stock	\$4.07	0.43	11.81%	2356955678	United States	2021	732603	Health Care	Biotechnology: Pharmaceutical Preparations
37	ABP	Abiogen Biosciences Inc. Common Stock	\$0.04	0.07	0.00%	2600000000	United States	2021	272600	Health Care	Biotechnology: Pharmaceutical Preparations

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symbol	name	last_sale	net_change	percent_chan	market_cap	country	ipo_year	volume	sector	industry	
character var	character varying (255)	numeric (20,5)	numeric (10,5)	numeric (10,5)	numeric (20,5)	character varyir	date	integer	character varying	character varying (255)	
1	ABCB	America Bancorp Common Stock	45.43000	-0.03000	-0.06600	3137035131.00000	United States	1994-01-01	315856	Finance	Major Banks
2	A	Agilent Technologies Inc. Com...	132.55000	1.06000	0.80600	3884213163.00000	United States	1999-01-01	1768216	Industrials	Electrical Products
3	AA	Alcoa Corporation Common Sto...	26.70000	1.36000	5.36700	4794225033.00000	United States	2016-01-01	6818046	Industrials	Aluminum
4	AACG	ATA Creativity Global American ...	1.24000	-0.00500	-0.40300	39053380.00000	China	2008-01-01	5798	Real Estate	Other Consumer Services
5	AACI	Armada Acquisition Corp. I Comm...	10.99000	0.00000	0.00000	0.00000	United States	2021-01-01	2	Finance	Blank Checks
6	AAGR	African Agriculture Holdings Inc...	0.75000	-0.00400	-0.53300	18766563.00000	United States	2021-01-01	86151	Finance	Finance: Consumer Services
7	AAGRW	African Agriculture Holdings Inc...	0.01000	-0.00820	-41.00000	296844.00000	United States	2021-01-01	6829	Finance	Finance: Consumer Services
8	AAN	Aarons Holdings Company Inc. ...	8.52000	-1.94000	-18.54700	258405525.00000	United States	2020-01-01	961540	Miscellaneous	Diversified Commercial Servic
9	AAOI	Applied Optoelectronics Inc. Co...	15.42000	0.69000	4.68400	592098471.00000	United States	2013-01-01	3206302	Technology	Semiconductors
10	AAPL	Apple Inc. Common Stock	182.63000	1.47000	0.81100	2820150727030.000	United States	1980-01-01	54210072	Technology	Computer Manufacturing
11	AAT	American Assets Trust Inc. Co...	21.25000	0.23000	1.09400	1294035453.00000	United States	2011-01-01	188141	Real Estate	Real Estate Investment Trusts
12	ABBV	AbbVie Inc. Common Stock	178.99000	0.18000	0.10100	316181066527.00000	United States	2012-01-01	3888511	Health Care	Biotechnology: Pharmaceutical Preparations
13	ABCL	AbCellera Biologics Inc. Comm...	5.12000	0.17000	3.43400	1481502039.00000	Canada	2020-01-01	2588630	Health Care	Pharmaceuticals and Biotech

After ETL Processes

This is a snippet of the data after Extraction and Transformation processes.

DATASET 2

GROSS DOMESTIC PRODUCT (GDP) DATA (2017 - 2023)

Before ETL Processes

This image provides a visual representation of the dataset's structure and contents, offering insight into the format and organization of the GDP data before Extraction, Transformation, and Loading (ETL) process.

LOCATION	Country	TRANSACTION	Transaction	MEASURE	Code Measure	TIME	Year	Unit	Code Unit	PowerCo	PowerCoX	Reference	Reference Value	Flag Code	Flags
2	AUS	Australia	B1_GA	Gross domestic product (output approach)	C	Current prices	2017	AUD	Australian	6 Millions		1844528			
3	AUS	Australia	B1_GA	Gross domestic product (output approach)	C	Current prices	2018	2018 AUD	Australian	6 Millions		1950042			
4	AUS	Australia	B1_GA	Gross domestic product (output approach)	C	Current prices	2019	2019 AUD	Australian	6 Millions		1984598			
5	AUS	Australia	B1_GA	Gross domestic product (output approach)	C	Current prices	2020	2020 AUD	Australian	6 Millions		2088901			
6	AUS	Australia	B1_GA	Gross domestic product (output approach)	C	Current prices	2021	2021 AUD	Australian	6 Millions		2333221			
7	AUS	Australia	B1_GA	Gross domestic product (output approach)	C	Current prices	2022	2022 AUD	Australian	6 Millions		2561228			
8	AUS	Australia	B1G_P119	Gross value added at basic prices, excluding FISIM	C	Current prices	2017	2017 AUD	Australian	6 Millions		1718268			
9	AUS	Australia	B1G_P119	Gross value added at basic prices, excluding FISIM	C	Current prices	2018	2018 AUD	Australian	6 Millions		1821534			
10	AUS	Australia	B1G_P119	Gross value added at basic prices, excluding FISIM	C	Current prices	2019	2019 AUD	Australian	6 Millions		1888747			
11	AUS	Australia	B1G_P119	Gross value added at basic prices, excluding FISIM	C	Current prices	2020	2020 AUD	Australian	6 Millions		1951756			
12	AUS	Australia	B1G_P119	Gross value added at basic prices, excluding FISIM	C	Current prices	2021	2021 AUD	Australian	6 Millions		2180676			
13	AUS	Australia	B1G_P119	Gross value added at basic prices, excluding FISIM	C	Current prices	2022	2022 AUD	Australian	6 Millions		2406811			
14	AUS	Australia	P3_P5	Domestic demand	C	Current prices	2017	2017 AUD	Australian	6 Millions		1837884			
15	AUS	Australia	P3_P5	Domestic demand	C	Current prices	2018	2018 AUD	Australian	6 Millions		1901786			
16	AUS	Australia	P3_P5	Domestic demand	C	Current prices	2019	2019 AUD	Australian	6 Millions		1999348			
17	AUS	Australia	P3_P5	Domestic demand	C	Current prices	2020	2020 AUD	Australian	6 Millions		2000094			
18	AUS	Australia	P3_P5	Domestic demand	C	Current prices	2021	2021 AUD	Australian	6 Millions		2199821			
19	AUS	Australia	P3_P5	Domestic demand	C	Current prices	2022	2022 AUD	Australian	6 Millions		2420167			
20	AUS	Australia	D1	Compensation of employees	C	Current prices	2017	2017 AUD	Australian	6 Millions		873163			
21	AUS	Australia	D1	Compensation of employees	C	Current prices	2018	2018 AUD	Australian	6 Millions		919156			
22	AUS	Australia	D1	Compensation of employees	C	Current prices	2019	2019 AUD	Australian	6 Millions		956942			
23	AUS	Australia	D1	Compensation of employees	C	Current prices	2020	2020 AUD	Australian	6 Millions		996768			
24	AUS	Australia	D1	Compensation of employees	C	Current prices	2021	2021 AUD	Australian	6 Millions		1069429			
25	AUS	Australia	D1	Compensation of employees	C	Current prices	2022	2022 AUD	Australian	6 Millions		1177339			
26	AUS	Australia	P6	Exports of goods and services	C	Current prices	2017	2017 AUD	Australian	6 Millions		403095			
27	AUS	Australia	P6	Exports of goods and services	C	Current prices	2018	2018 AUD	Australian	6 Millions		470190			
28	AUS	Australia	P6	Exports of goods and services	C	Current prices	2019	2019 AUD	Australian	6 Millions		475656			
29	AUS	Australia	P6	Exports of goods and services	C	Current prices	2020	2020 AUD	Australian	6 Millions		459074			
30	AUS	Australia	P6	Exports of goods and services	C	Current prices	2021	2021 AUD	Australian	6 Millions		593271			
31	AUS	Australia	P6	Exports of goods and services	C	Current prices	2022	2022 AUD	Australian	6 Millions		684411			
32	AUS	Australia	B1G	Gross value added at basic prices, total activity	C	Current prices	2017	2017 AUD	Australian	6 Millions		1718288			
33	AUS	Australia	B1G	Gross value added at basic prices, total activity	C	Current prices	2018	2018 AUD	Australian	6 Millions		1821534			
34	AUS	Australia	B1G	Gross value added at basic prices, total activity	C	Current prices	2019	2019 AUD	Australian	6 Millions		1888747			
35	AUS	Australia	B1G	Gross value added at basic prices, total activity	C	Current prices	2020	2020 AUD	Australian	6 Millions		1951756			
36	AUS	Australia	B1G	Gross value added at basic prices, total activity	C	Current prices	2021	2021 AUD	Australian	6 Millions		2180676			

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Data Output																					
location		country		transaction		transaction		measure_code		measure		time		year		unit_code		unit		powercode_code	
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1	EA19	Euro area (19 countries)	B1GVO_Q	Public admin.; compulsory s.s.; edu...	C	Current prices	2021	2021	EUR	Euro	6										
2	EA19	Euro area (19 countries)	B1GVO_Q	Public admin.; compulsory s.s.; edu...	C	Current prices	2022	2022	EUR	Euro	6										
3	EA19	Euro area (19 countries)	D12VM_N	Prof., scientific, techn.; admin., supp...	C	Current prices	2017	2017	EUR	Euro	6										
4	EA19	Euro area (19 countries)	D12VM_N	Prof., scientific, techn.; admin., supp...	C	Current prices	2018	2018	EUR	Euro	6										
5	EA19	Euro area (19 countries)	D12VM_N	Prof., scientific, techn.; admin., supp...	C	Current prices	2019	2019	EUR	Euro	6										
6	EA19	Euro area (19 countries)	D12VM_N	Prof., scientific, techn.; admin., supp...	C	Current prices	2020	2020	EUR	Euro	6										
7	EA19	Euro area (19 countries)	D	Data Output																	
8	EA19	Euro area (19 countries)	B	unit	unit_code	unit	powercode_code	reference_period_code	reference_period	date	value	flag_code	flags								
9	EA19	Euro area (19 countries)	B	1	2021	EUR	Euro	6	Millions	9999	9999-01-01	2164082	Unknown	Unknown							
10	EA19	Euro area (19 countries)	B	2	2022	EUR	Euro	6	Millions	9999	9999-01-01	2259560	Unknown	Unknown							
11	EA19	Euro area (19 countries)	B	3	2017	EUR	Euro	6	Millions	9999	9999-01-01	139133	Unknown	Unknown							
12	EA19	Euro area (19 countries)	B	4	2018	EUR	Euro	6	Millions	9999	9999-01-01	145947	Unknown	Unknown							
13	EA19	Euro area (19 countries)	B	5	2019	EUR	Euro	6	Millions	9999	9999-01-01	147871	Unknown	Unknown							
14	EA19	Euro area (19 countries)	B	6	2020	EUR	Euro	6	Millions	9999	9999-01-01	144157	Unknown	Unknown							
15	EA19	Euro area (19 countries)	B	7	2021	EUR	Euro	6	Millions	9999	9999-01-01	157157	Unknown	Unknown							
16	EA19	Euro area (19 countries)	B	8	2022	EUR	Euro	6	Millions	9999	9999-01-01	168835	Unknown	Unknown							
17	EA19	Euro area (19 countries)	B	9	2017	EUR	Euro	6	Millions	9999	9999-01-01	498945	Unknown	Unknown							
18	EA19	Euro area (19 countries)	B	10	2018	EUR	Euro	6	Millions	9999	9999-01-01	525710	Unknown	Unknown							
19	EA19	Euro area (19 countries)	B	11	2019	EUR	Euro	6	Millions	9999	9999-01-01	555952	Unknown	Unknown							
20	EA19	Euro area (19 countries)	B	12	2020	EUR	Euro	6	Millions	9999	9999-01-01	546900	Unknown	Unknown							
21	EA19	Euro area (19 countries)	B	13	2021	EUR	Euro	6	Millions	9999	9999-01-01	591681	Unknown	Unknown							

After ETL Processes

This is a snippet of the data after Extraction and Transformation processes.

DATASET 3

UN COMTRADE DATA (1988 - 2023)

Before ETL Processes

This image provides a visual representation of the dataset's structure and contents, offering insight into the format and organization of the UN Comtrade data before Extraction, Transformation, and Loading (ETL) process.

1	datasetCode	typeCode	freqCode	period	reporterC	reporterD	currency	importConvFx	exportConvFx	tradeSystem	classificationCode	importVal	importVal	importPar	importPar	exportPar	publicationN	publicationDate	publ
2	2.01E+16	C	A	2012	100	Bulgaria	BGN	0.65696786	0.65696786	Special	H4	CIF	FOB	Consignee	Last Know N/A	N/A	New data: Da 2013-04-15T16:49:32, 15/04		
3	2.01E+16	C	A	1999	100	Bulgaria	EUR	0.616106	0.106154	Special	H4	CIF	FOB	Origin	Last Know N/A	N/A	New data: Da 2005-06-10T00:00:00, 10/		
4	2.01E+16	C	A	2004	100	Bulgaria	BGN	0.63659459	0.63659459	Special	H2	CIF	FOB	Origin	Last Know N/A	N/A	Full revision: [2014-12-12T18:32:56, 12/1]		
5	2.01E+16	C	A	2010	100	Bulgaria	BGN	0.67671976	0.67671976	Special	H3	CIF	FOB	Consignee	Last Know N/A	N/A	New Data: 2011-05-20T01:47:15, 20/05		
6	2.01E+16	C	A	2016	100	Bulgaria	BGN	0.56589496	0.56589496	Special	H4	CIF	FOB	Consignee	Last Know N/A	N/A	New data: Da 2017-03-27T23:05:42, 27/03		
7	2.01E+16	C	A	2008	100	Bulgaria	BGN	0.75425283	0.75425283	Special	H3	CIF	FOB	Origin/Con	Last Know N/A	N/A	New data: Da 2009-07-22T10:12:58, 22/07		
8	2.01E+16	C	A	2022	100	Bulgaria	BGL	0.53759346	0.53759346	Special	H6	CIF	FOB	Consignee	Last Know Origin	N/A	New Data: 2023-04-06T20:31:59, 6		
9	2.01E+16	C	A	2018	100	Bulgaria	BGL	0.60323291	0.60304159	Special	H5	CIF	FOB	Consignee	Last Know Origin	N/A	New Data: 2019-06-23T06:39:15, 23/06		
10	2.01E+16	C	A	1988	100	Bulgaria	EUR	1.12109	1.12109	Special	H1	CIF	FOB	Origin	Last Know Origin	N/A	New Data: Da 2023-04-06T20:31:59, 6		
11	2.01E+16	C	A	1999	100	Bulgaria	USD	1	1	Special	H1	CIF	FOB	Origin	Last Know N/A	N/A	New data: Da 2002-09-01T00:00:00, 1		
12	2.01E+16	C	A	2002	100	Bulgaria	USD	0.48550793	0.48550793	Special	H2	CIF	FOB	Origin	Last Know N/A	N/A	Full revision: [2002-09-01T00:00:00, 1]		
13	2.01E+16	C	A	1997	100	Bulgaria	USD	1	1	Special	H1	CIF	FOB	Origin	Last Know N/A	N/A	New data: Da 2002-09-01T00:00:00, 1		
14	2.01E+16	C	A	2023	100	Bulgaria	BGL	0.55280178	0.55280178	Special	H6	CIF	FOB	Consignee	Last Know Origin	N/A	New Data: Da 2024-02-26T17:16:09, 26/02		
15	2.01E+16	C	A	2017	100	Bulgaria	BGL	0.5784608	0.5785848	Special	H5	CIF	FOB	Consignee	Last Know N/A	N/A	New data: Da 2018-04-13T11:15:46, 13/04		
16	2.01E+16	C	A	2001	100	Bulgaria	EUR	0.895498	0.895498	Special	H1	CIF	FOB	Origin	Last Know N/A	N/A	Full revision: [2014-12-12T20:53:00, 12/1]		
17	2.01E+16	C	A	2015	100	Bulgaria	BGN	0.56656657	0.56656657	Special	H4	CIF	FOB	Consignee	Last Know N/A	N/A	New data: Da 2016-03-24T21:13:41, 24/03		
18	2.01E+16	C	A	2009	100	Bulgaria	BGN	0.71354868	0.71354868	Special	H3	CIF	FOB	Consignee	Last Know N/A	N/A	New data: Da 2010-04-23T15:00:23, 23/04		
19	2.01E+16	C	A	2013	100	Bulgaria	BGN	0.67893291	0.67893291	Special	H4	CIF	FOB	Consignee	Last Know N/A	N/A	New data: Da 2014-07-18T23:40:03, 18/07		
20	2.01E+16	C	A	2020	100	Bulgaria	BGL	0.5826374	0.5826374	Special	H5	CIF	FOB	Consignee	Last Know N/A	N/A	New Data: 2021-10-27T23:35:29, 27/10		
21	2.01E+16	C	A	2005	100	Bulgaria	BGN	0.63311243	0.63311243	Special	H2	CIF	FOB	Origin	Last Know N/A	N/A	Specific revis 2008-09-13T13:37:29, 13/08		
22	2.01E+16	C	A	2007	100	Bulgaria	BGN	0.70366169	0.70366169	Special	H3	CIF	FOB	Origin/Con	Last Know N/A	N/A	New Data: Di 2008-09-09T16:32:44, 9		
23	2.01E+16	C	A	2000	100	Bulgaria	EUR	0.918106	0.918106	Special	H1	CIF	FOB	Origin	Last Know N/A	N/A	Full revision: [2014-12-12T20:53:00, 12/1]		
24	2.01E+16	C	A	2014	100	Bulgaria	BGN	0.62020000	0.62020000	Special	H4	CIF	FOB	Consignee	Last Know N/A	N/A	New data: Da 2014-09-05T00:00:00, 5		
25	2.01E+16	C	A	2003	100	Bulgaria	BGN	0.57917866	0.57917866	Special	H2	CIF	FOB	Origin	Last Know N/A	N/A	Full revision: [2014-12-12T11:56:50, 12/1]		
26	2.01E+16	C	A	2019	100	Bulgaria	BGL	0.57228949	0.57228949	Special	H5	CIF	FOB	Consignee	Last Know N/A	N/A	New Data: Da 2020-07-13T11:54:27, 13/07		
27	2.01E+16	C	A	2011	100	Bulgaria	BGN	0.711723	0.711723	Special	H3	CIF	FOB	Consignee	Last Know N/A	N/A	New Data: 2012-05-08T11:20:39, 8		
28	2.01E+16	C	A	2006	100	Bulgaria	BGN	0.64383043	0.64383043	Special	H2	CIF	FOB	Origin	Last Know N/A	N/A	New data: Da 2007-10-10T12:23:46, 10/1		
29	2.01E+16	C	A	2021	100	Bulgaria	USD	1	1	Special	H5	CIF	FOB	Consignee	Last Know Origin	N/A	New Data: Da 2022-10-10T11:45:23, 6/1		
30	2.01E+16	C	A	2010	104	Myanmar	USD	1	1	General	H3	CIF	FOB	Origin	Last Know N/A	N/A	New data: Da 2012-04-13T16:57:19, 13/04		
31	2.01E+16	C	A	2001	104	Myanmar	USD	1	1	General	H1	CIF	FOB	Origin	Last Know N/A	N/A	New data: Da 2010-01-01T05:14:22, 5		
32	2.01E+16	C	A	1992	104	Myanmar	MMK	0.162069	0.162069	General	H0	CIF	FOB	Origin	Last Know N/A	N/A	2002-09-01T00:00:00, 1		
33	2.01E+16	C	A	2017	104	Myanmar	USD	1	1	General	H5	CIF	FOB	Origin	Last Know Consignm N/A	Revised Data 2023-11-04T01:17:33, 4/1			
34	2.01E+16	C	A	2017	104	Myanmar	USD	1	1	General	H5	CIF	FOB	Origin	Last Know Consignm N/A	New data: 2018-05-22T10:28:50, 22/05			
35	2.01E+16	C	A	2012	104	Myanmar	USD	1	1	General	H4	CIF	FOB	Origin	Last Know N/A	New data: 2017-07-18T16:48, 18/07			
36	2.01E+16	C	A	2016	104	Myanmar	USD	1	1	General	H4	CIF	FOB	Origin	Last Know N/A	New data: Da 2017-05-15T17:57:37, 15/05			

UN_Comtrade																			
Data Output		Messages		Notifications															
1	ImportValue	ExportValue	ImportPartnerCountry	ExportPartnerCountry	ImportPartner2	ExportPartner2	PublicationNote	PublicationDate	PublicationDateShort	1	1	1	1	1	1	1	1	1	1
1	Unknown	FOB	Unknown	Last Known Destination	Unknown	Unknown	Unknown	2002-09-01 00:00:00	2002-09-01	Unknown									
2	Unknown	FOB	Unknown	Last Known Destination	Unknown	Unknown	Unknown	2002-09-01 00:00:00	2002-09-01	Unknown									
3	Unknown	FOB	Unknown	Last Known Destination	Unknown	Unknown	Unknown	2002-09-01 00:00:00	2002-09-01	Unknown									
4	Unknown	FOB	Unknown	Last Known Destination	Unknown	Unknown	Unknown	2002-09-01 00:00:00	2002-09-01	Unknown									
5	Unknown	FOB	Unknown	Last Known Destination	Unknown	Unknown	Unknown	2002-09-01 00:00:00	2002-09-01	Unknown									
6	Unknown	FOB	N/A	Last Known Destination	Unknown	Unknown	Unknown	2002-09-01 00:00:00	2002-09-01	Unknown									
7	Unknown	FOB	Unknown	Last Known Destination	Unknown	Unknown	Unknown	2002-09-01 00:00:00	2002-09-01	Unknown									
8	CIF	FOB	Origin	Last Known Destination	Unknown	Unknown	New data: Data for this year is p...	2013-04-20 02:33:21.467	2013-04-20	Unknown									
9	CIF	FOB	Origin	Last Known Destination	Unknown	Unknown	New data: Data for this period i...	2018-07-09 15:29:46.447	2018-07-09	Unknown									
10	CIF	FOB	Origin	Last Known Destination	Unknown	Unknown	Full revision: Data for this year ...	2009-11-24 13:49:03.197	2009-11-24	Unknown									
11	CIF	FOB	Origin	Last Known Destination	Unknown	Unknown	New data: Data for this year is p...	2014-12-19 05:43:28.047	2014-12-19	Unknown									
12	CIF	FOB	Origin	Last Known Destination	Unknown	Unknown	New data: Data for this year is p...	2017-10-17 17:55:27.257	2017-10-17	Unknown									
13	FOB	FOB	Origin	Last Known Destination	Unknown	Unknown	Specific revision: Data for this p...	2023-09-19 16:57:40.196667	2023-09-19	Unknown									

After ETL Processes

This is a snippet of the data after Extraction and Transformation processes.

DATA PREPARATION

ETL PROCESS: EXTRACT, TRANSFORM, LOAD



Imported the datasets into staging areas in PostgreSQL.



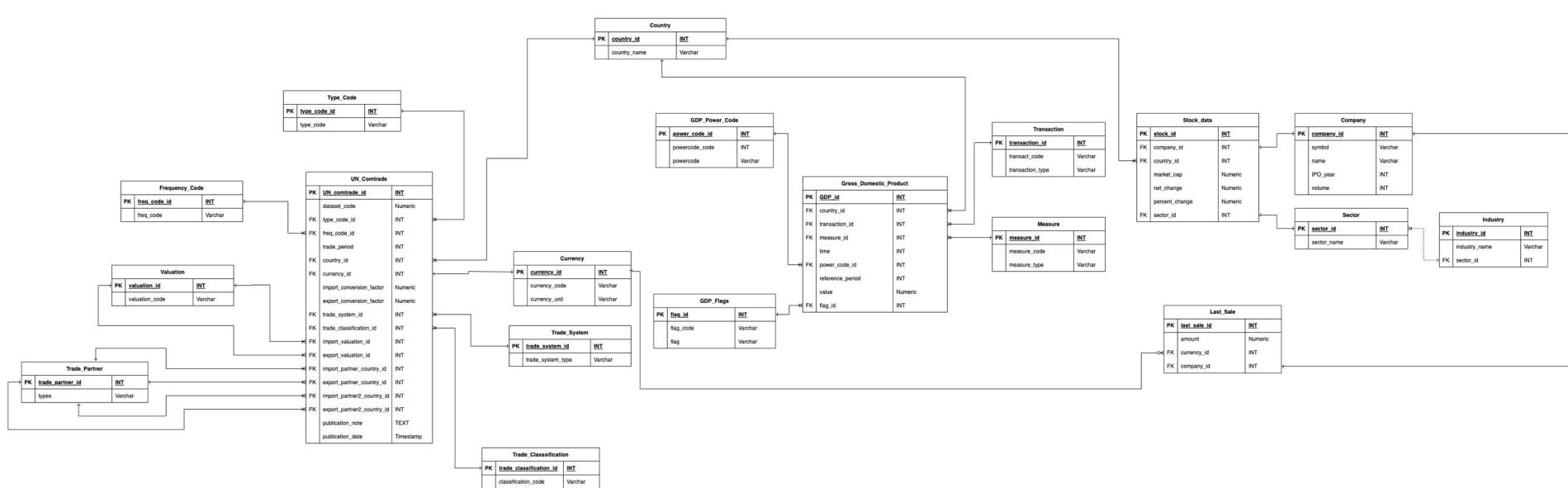
Data transformation / preprocessing to handle null values, incorrect data types, and restructuring data format.



Normalization schema development for data consistency and loaded staging data.

NORMALIZATION ERD

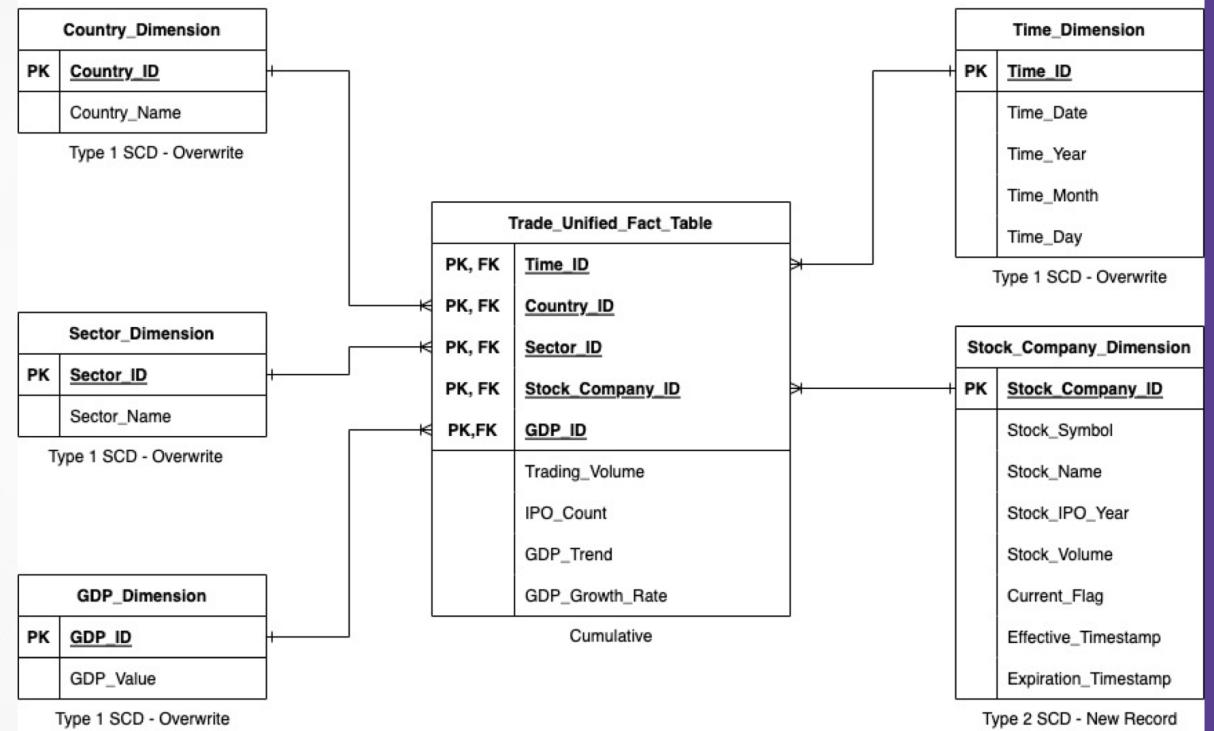
NORMALIZATION ERD



DIMENSIONAL MODEL OVERVIEW

- Organization: Data structured into dimensions and fact table.
- Streamlined data retrieval and analysis by structuring data from the normalization schema into optimized dimensions and fact tables within the data warehouse.
- Representation: Visual depiction of the dimensional model – Slowly Changing Dimensions

DIMENSIONAL MODEL - SLOWLY CHANGING DIMENSIONS



KEY FINDINGS

BUSINESS QUESTIONS TO BE ADDRESSED

How has the trading volume of stocks in the 'Technology' and 'Health Care' sectors changed over the years?

Which countries have the highest number of IPOs in 2021, 2022, and 2023?

What is the GDP trend over the years for different countries?

Which countries have experienced the highest GDP growth rates in a specific year?

Trading volume trends in 'Technology' and 'Health Care' sectors over the years

- Technology sector peaked in 2021, indicating highest trade volume.
- '9999' denotes volume without known date.
- Health care sector peaked in 2015, followed by 2021 and 2020.



- United States maintains highest IPOs in 2021–2023.

Countries with the highest number of IPOs in 2021, 2022, and 2023

INITIAL PUBLIC OFFER (IPO)

IPO Count 2021

country name (..	
Australia	1
Belgium	2
Brazil	4
Canada	11
Cayman Islands	16
China	24
Denmark	2
France	2
Germany	3
Guernsey	1
Hong Kong	9
Ireland	2
Israel	11
Italy	1
Japan	2
Jersey	1
Kazakhstan	2
Luxembourg	2
Malaysia	2
Mexico	1
Netherlands	2
Singapore	6
South Korea	1
Sweden	2
Switzerland	5
Turkey	1
United Kingdom	14
United States	606
Unknown	72
Uruguay	1

IPO Count 2022

country name (IPO Co..	
Australia	3
Bermuda	1
Canada	9
Cayman Islands	9
China	8
Colombia	1
Guernsey	1
Hong Kong	4
Israel	12
Japan	2
Malaysia	9
Mexico	3
Netherlands	2
Singapore	13
Sweden	2
Taiwan	1
United Arab Emirates	1
United Kingdom	8
United States	272
Unknown	49

IPO Count 2023

Country Name	Year of ti..
Australia	2
Bermuda	1
Brazil	1
Canada	8
Cayman Islands	2
China	23
France	1
Hong Kong	6
Ireland	1
Israel	4
Japan	6
Malaysia	5
Mexico	1
Netherlands	1
Singapore	6
South Korea	1
Spain	1
Taiwan	3
United Kingdom	1
United States	146
Unknown	34

- China has highest GDP in 2021–2023.
- Notably, China's GDP significantly surpasses Germany and Spain.



CONCLUSION

SUMMARY

- Successful ETL process and data preprocessing.
- Development and implementation of a normalization schema.
- Development and implementation of effective data warehouse system focusing on dimensional modeling for financial data analysis,
- Ensures integrity, accuracy, and consistency.

SIGNIFICANCE

- Significantly improved the integrity, accuracy, and consistency of our financial data analysis processes.
- Meticulously maintained warehouse and a suite of stored procedures to aid decision-making.
- Reinforces commitment, aligns with objectives.

INVITATION

- Questions and discussions from stakeholders welcome.
- Valuable feedback for continuous improvement.

POSTGRESQL SCRIPT

GITHUB LINK:

<https://github.com/AmazingEkeh/Financial-Data-Warehouse-Dimensional-Analytics>



DATASETS



Historical Stock Data

<https://www.nasdaq.com/screening/company-list.aspx>



Gross Domestic Product Data

https://stats.oecd.org/Index.aspx?DatasetCode=SNA_TABLE1



UN Comtrade Data

<https://comtradeplus.un.org/DataAvailability>

THANK YOU



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