HYUNDAI

Stock Analysis

MySQL

XLS

Power BI

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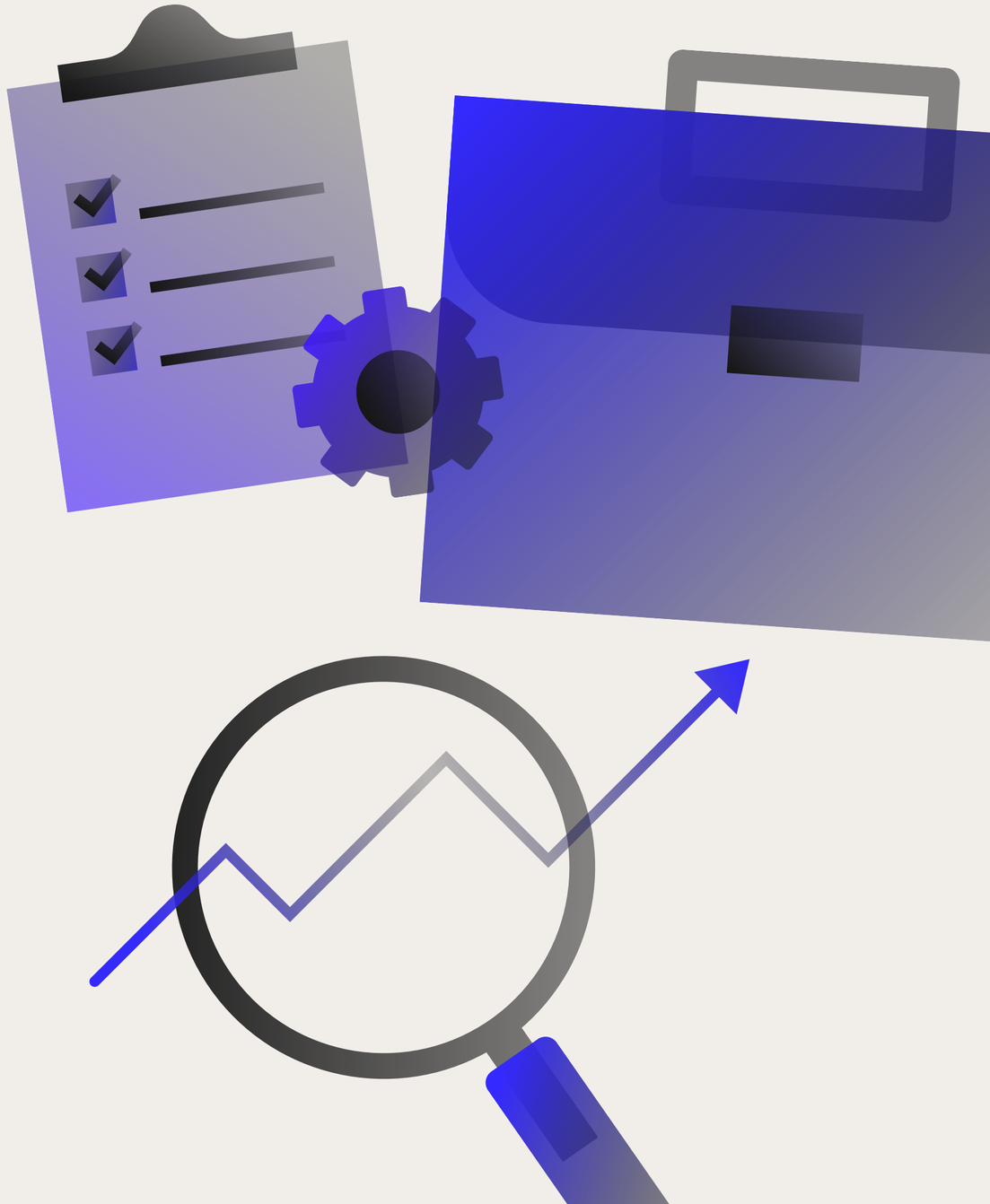
Introduction

In this project, we are performing an in-depth analysis of Hyundai's stock performance over time. Using historical stock data, we will explore daily, weekly, and monthly trends to uncover key insights into the stock's behaviour. This analysis will utilize Excel for data cleaning, MySQL for querying and analyzing the data, and Power BI for visualization. By leveraging these tools, we aim to provide a comprehensive overview of Hyundai's stock fluctuations, volume trends, and key performance indicators to inform potential investors and stakeholders.



Objective

The main objective of this analysis is to explore and analyze Hyundai's stock data to:

1. Understand daily, weekly, and monthly stock trends.
2. Identify key stock performance indicators such as highest and lowest prices, average volumes, and price volatility.
3. Gain insights into historical stock performance to assess the stock’s stability and trading patterns.
4. Present the results visually using Power BI to facilitate decision-making for investors.

Dataset

We have three datasets for Hyundai's stock:

- **Daily Stock Data:** Contains the stock prices and trading volume on a daily basis, with the following fields:
    - Date, Year, Open, High, Low, Close, Adj Close, Volume, Daily Return %.
- **Weekly Stock Data:** This table summarizes the weekly stock data and includes:
    - Date, Weekname, Open, High, Low, Close, Adj Close, Volume, Weekly Return %.
- **Monthly Stock Data:** Summarizes the stock performance over each month with the following fields:
    - Date, Month, Open, High, Low, Close, Adj Close, Volume, Monthly Return %.

Dataset

Daily_Stock

Date	Year	Open	High	Low	Close	Adj Close	Volume	Daily Return %
04-01-2016	2016	147500	148000	143500	144000	110097.9	445332	-2%
05-01-2016	2016	143000	145000	142000	143500	109715.6	530496	0%
06-01-2016	2016	144000	145000	139000	140000	107039.6	769406	-3%
07-01-2016	2016	138500	140000	137500	137500	105128.2	586187	-1%
08-01-2016	2016	134500	138000	133500	136500	104363.6	888701	1%
11-01-2016	2016	134500	140500	134000	140000	107039.6	542749	4%
12-01-2016	2016	140500	141500	139000	139500	106657.3	386506	-1%
13-01-2016	2016	140500	141500	139500	140500	107421.9	338336	0%
14-01-2016	2016	138500	143500	136500	141000	107804.2	664829	2%
15-01-2016	2016	141000	142000	136500	138500	105892.7	568653	-2%
18-01-2016	2016	137500	140000	135500	139000	106275	400716	1%
19-01-2016	2016	138000	140000	136000	140000	107039.6	332956	1%
20-01-2016	2016	139500	140000	135500	136500	104363.6	544330	-2%
21-01-2016	2016	136000	138000	135500	137000	104745.9	455723	1%
22-01-2016	2016	138000	140500	136500	139000	106275	551671	1%
25-01-2016	2016	140000	140500	136000	137500	105128.2	543064	-2%
26-01-2016	2016	136500	137000	134500	136000	103981.3	564584	0%

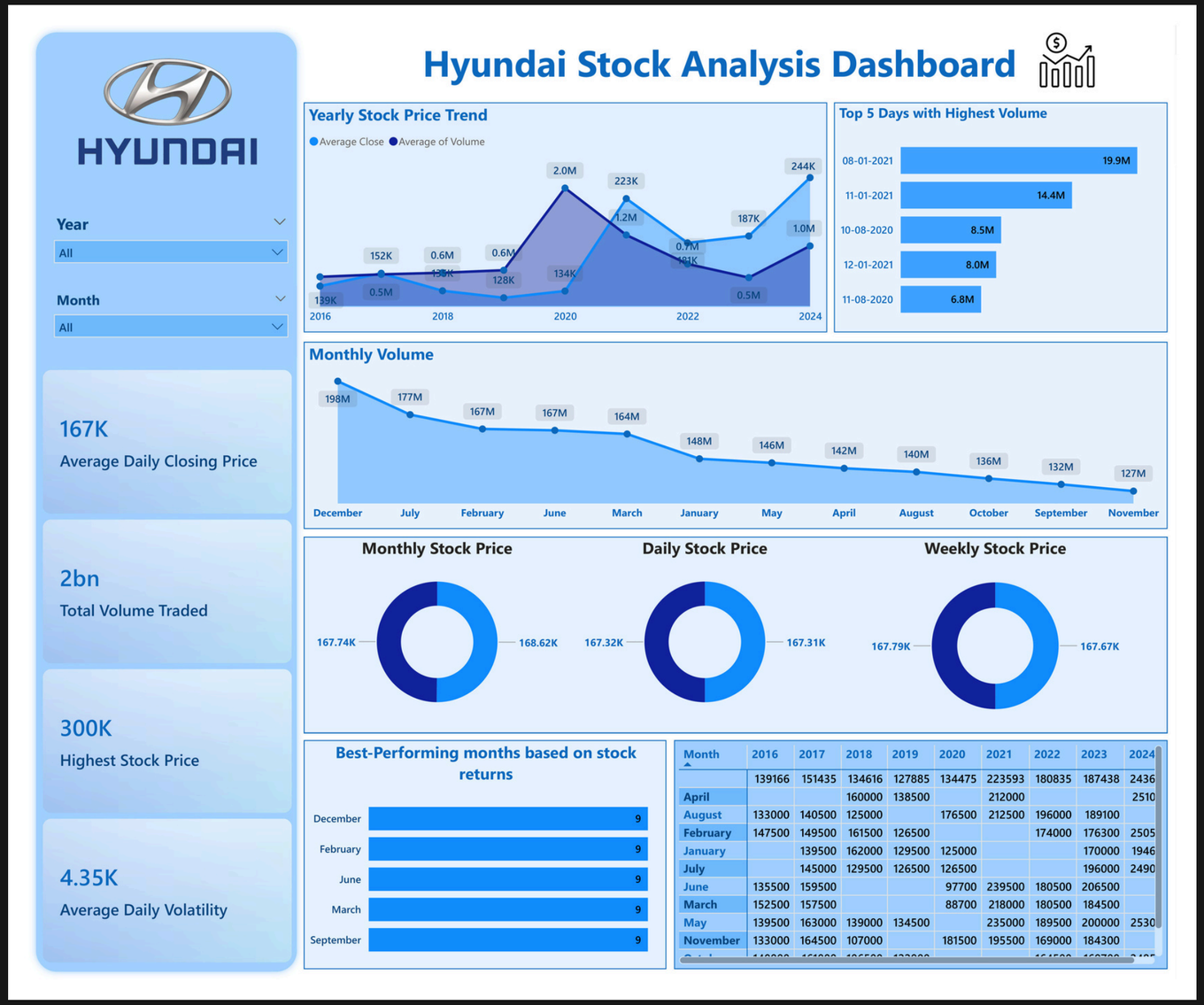
Monthly_Stock

Date	Month	Open	High	Low	Close	Adj Close	Volume	Monthly Return %
31-12-2015	December	149000	149000	131000	133000	101687.6	11288332	-11%
31-01-2016	January	132000	153000	126500	147500	112773.9	10251020	12%
29-02-2016	February	147500	159500	143500	152500	116596.7	10301411	3%
31-03-2016	March	152500	155000	142000	143500	109715.6	7926098	-6%
30-04-2016	April	142000	144000	131500	139500	106657.3	9731425	-2%
31-05-2016	May	137500	144000	133500	135500	103599	12447763	-1%
30-06-2016	June	136500	139500	128500	132000	101654.4	12173772	-3%
31-07-2016	July	132500	138000	129500	133000	102424.5	10540385	0%
31-08-2016	August	133000	142000	131500	135500	104349.7	10375055	2%
30-09-2016	September	135500	141500	131000	140000	107815.2	9719714	3%
31-10-2016	October	141000	141500	129000	133000	102424.5	10564720	-6%
30-11-2016	November	133000	148000	132000	146000	112435.9	8047692	10%
31-12-2016	December	146000	155500	139000	139500	109707.8	9430966	-4%
31-01-2017	January	140000	151500	135500	149500	117572.2	8920844	7%
28-02-2017	February	149500	171000	140000	157500	123863.7	13885644	5%
31-03-2017	March	156500	157000	136500	144000	113246.8	12552830	-8%
30-04-2017	April	144000	173000	143000	163000	128189.1	13326549	13%
31-05-2017	May	162500	170000	157000	159500	125436.6	9282685	-2%
30-06-2017	June	158500	164000	144500	145000	114750.4	12897025	-9%
31-07-2017	July	145000	151000	138500	140500	111189.2	10120323	-3%
31-08-2017	August	141000	151000	132000	150500	119103.1	10852741	7%

Weekly_Stock

Date	Week day	Open	High	Low	Close	Adj Close	Volume	Weekly Return %
31-12-2015	Thursday	149000	149000	137500	137500	105128.2	2331421	-8%
07-01-2016	Thursday	134500	143500	133500	141000	107804.2	2821121	5%
14-01-2016	Thursday	141000	142000	135500	137000	104745.9	2302378	-3%
21-01-2016	Thursday	138000	140500	134500	135000	103216.7	2843030	-2%
28-01-2016	Thursday	135000	136000	126500	132500	101305.3	3524339	-2%
04-02-2016	Thursday	132000	133500	130500	131000	100158.5	1202023	-1%
11-02-2016	Thursday	131500	149000	131000	147000	112391.6	3910675	12%
18-02-2016	Thursday	147000	153000	145500	147000	112391.6	1682840	0%
25-02-2016	Thursday	148000	151500	144500	147500	112773.9	2089156	0%
03-03-2016	Thursday	146000	150000	143500	148000	113156.1	2523241	1%
10-03-2016	Thursday	147500	150500	145500	146500	112009.3	1777843	-1%
17-03-2016	Thursday	148000	159500	147500	155500	118890.4	3188109	5%
24-03-2016	Thursday	154500	159000	151500	152500	116596.7	1644587	-1%
31-03-2016	Thursday	152500	152500	143500	146500	112009.3	2410682	-4%

Dashboard


HYUNDAI
Year
All
Month
All
167K
Average Daily Closing Price
2bn
Total Volume Traded
300K
Highest Stock Price
4.35K
Average Daily Volatility
Hyundai Stock Analysis Dashboard
Yearly Stock Price Trend
Average Close
Average of Volume
2016
2018
2020
2022
2024
Top 5 Days with Highest Volume
08-01-2021
19.9M
11-01-2021
14.4M
10-08-2020
8.5M
12-01-2021
8.0M
11-08-2020
6.8M
Monthly Volume
198M
177M
167M
167M
164M
148M
146M
142M
140M
136M
132M
127M
December
July
February
June
March
January
May
April
August
October
September
November
Monthly Stock Price
167.74K
168.62K
Daily Stock Price
167.32K
167.31K
Weekly Stock Price
167.79K
167.67K
Best-Performing months based on stock returns
December
February
June
March
September
Month
2016
2017
2018
2019
2020
2021
2022
2023
2024
April
August
February
January
July
June
March
May
November

Average daily, weekly, and monthly stock price (Open/Close)

QUERY

```sql
-- What is the average daily, weekly, and monthly stock price (Open/Close)?

SELECT
    Round(AVG(Open),0) AS avg_daily_open_price,
    Round(AVG(Close),0) AS avg_daily_close_price
FROM daily_stock;

SELECT
    Round(AVG(Open),0) AS avg_weekly_open_price,
    Round(AVG(Close),0) AS avg_weekly_close_price
FROM weekly_stock;

SELECT
    Round(AVG(Open),0) AS avg_monthly_open_price,
    Round(AVG(Close),0) AS avg_monthly_close_price
FROM monthly_stock;
```

OUTPUT

	avg_daily_open_price	avg_daily_close_price
▶	167320	167307

	avg_weekly_open_price	avg_weekly_close_price
▶	167674	167788

	avg_monthly_open_price	avg_monthly_close_price
▶	167741	168618

Maximum and minimum stock price by year

QUERY

```sql
-- What is the maximum and minimum stock price by year?

SELECT Year,
    MAX(High) AS highest_price,
    MIN(Low) AS lowest_price
FROM daily_stock
group by year;
```

OUTPUT

	Year	highest_price	lowest_price
▶	2016	159500	126500
	2017	173000	133000
	2018	167500	92500
	2019	143500	113000
	2020	199000	65000
	2021	289000	189000
	2022	217500	150500
	2023	211500	154000
	2024	299500	179800

Top 5 dates with the highest volume traded

QUERY

```sql
-- What are the top 5 dates with the highest volume traded?

SELECT
    Date, Volume
FROM daily_stock
ORDER BY Volume DESC
LIMIT 5;
```

OUTPUT

Date	Volume
08-01-2021	19933702
11-01-2021	14433887
10-08-2020	8460795
12-01-2021	8040182
11-08-2020	6776406

Total volume traded on a weekly and monthly basis

QUERY

```sql
-- What is the total volume traded on a weekly and monthly basis?

-- For weekly volume
SELECT
    `Week day`,
    SUM(Volume) AS total_volume
FROM weekly_stock
GROUP BY `Week day`
ORDER BY total_volume DESC;

-- For monthly volume
SELECT
    Month,
    SUM(Volume) AS total_volume
FROM monthly_stock
GROUP BY Month
ORDER BY total_volume DESC;
```

OUTPUT

Month	total_volume
December	198222305
July	176672629
February	167465015
June	166580129
March	164223274
January	148262672
May	145658101
April	142137437
August	139776578
October	135536202
September	131791665
November	127438551

Week day	total_volume
Thursday	1843456268
Friday	308290

Best-performing months based on stock returns

QUERY

```sql
-- What are the best-performing months based on stock returns?

SELECT
    Month,
    ((Close - Open) / Open) * 100 AS return_percentage
FROM monthly_stock
ORDER BY return_percentage DESC
limit 5;
```

OUTPUT

Month	return_percentage
July	39.5257
January	29.1903
June	28.4264
December	19.2708
March	15.4167

Trend in stock price movement on specific days of the week

QUERY

```sql
-- Is there a trend in stock price movement on specific days of the week?

SELECT
    `Week day`,
    round(AVG(Close),0) AS avg_close_price
FROM weekly_stock
GROUP BY `Week day`
ORDER BY avg_close_price DESC;
```

OUTPUT

	Week day	avg_close_price
▶	Friday	248500
	Thursday	167612

Overall stock trends year over year

QUERY

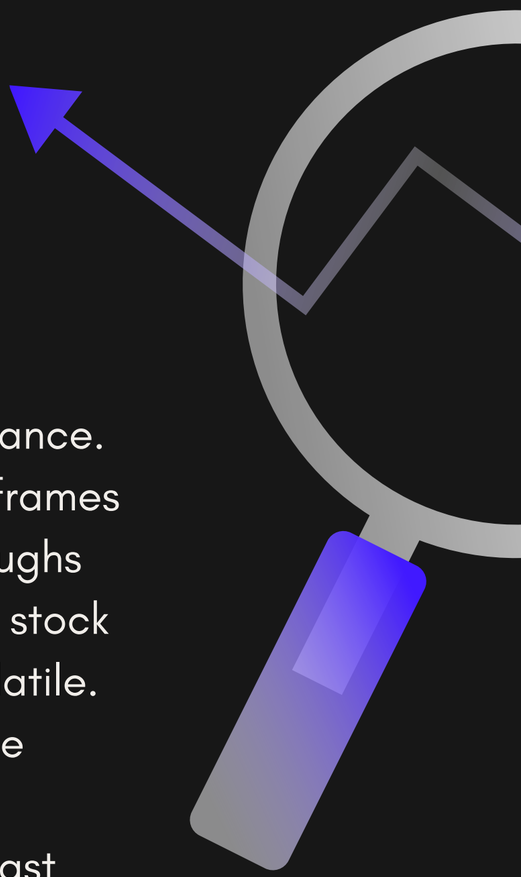
```sql
-- What are the overall stock trends year over year?

SELECT
    Year,
    round(AVG(Close),0) AS avg_close_price,
    round(AVG(Volume),0) AS avg_volume_traded
FROM daily_stock
GROUP BY Year
ORDER BY Year;
```

OUTPUT

Year	avg_close_price	avg_volume_traded
2016	139179	501493
2017	151506	544069
2018	134672	571647
2019	127951	615086
2020	134431	2027087
2021	223381	1220738
2022	180768	723249
2023	187395	488234
2024	243567	1032901

Conclusion



This analysis of Hyundai’s stock data reveals significant trends and insights into its historical performance. By examining key metrics such as closing prices, trading volume, and volatility across different time frames (daily, weekly, and monthly), we can conclude that the stock has experienced several peaks and troughs over the analyzed period. The visualizations created in Power BI provide a clear picture of Hyundai's stock performance, helping investors understand when the stock performed well and when it was most volatile. Overall, this analysis highlights the importance of monitoring stock performance across different time intervals to make informed investment decisions. Future work could include further analysis of macroeconomic factors influencing these stock trends and conducting predictive modeling to forecast future price movements.

Thank You