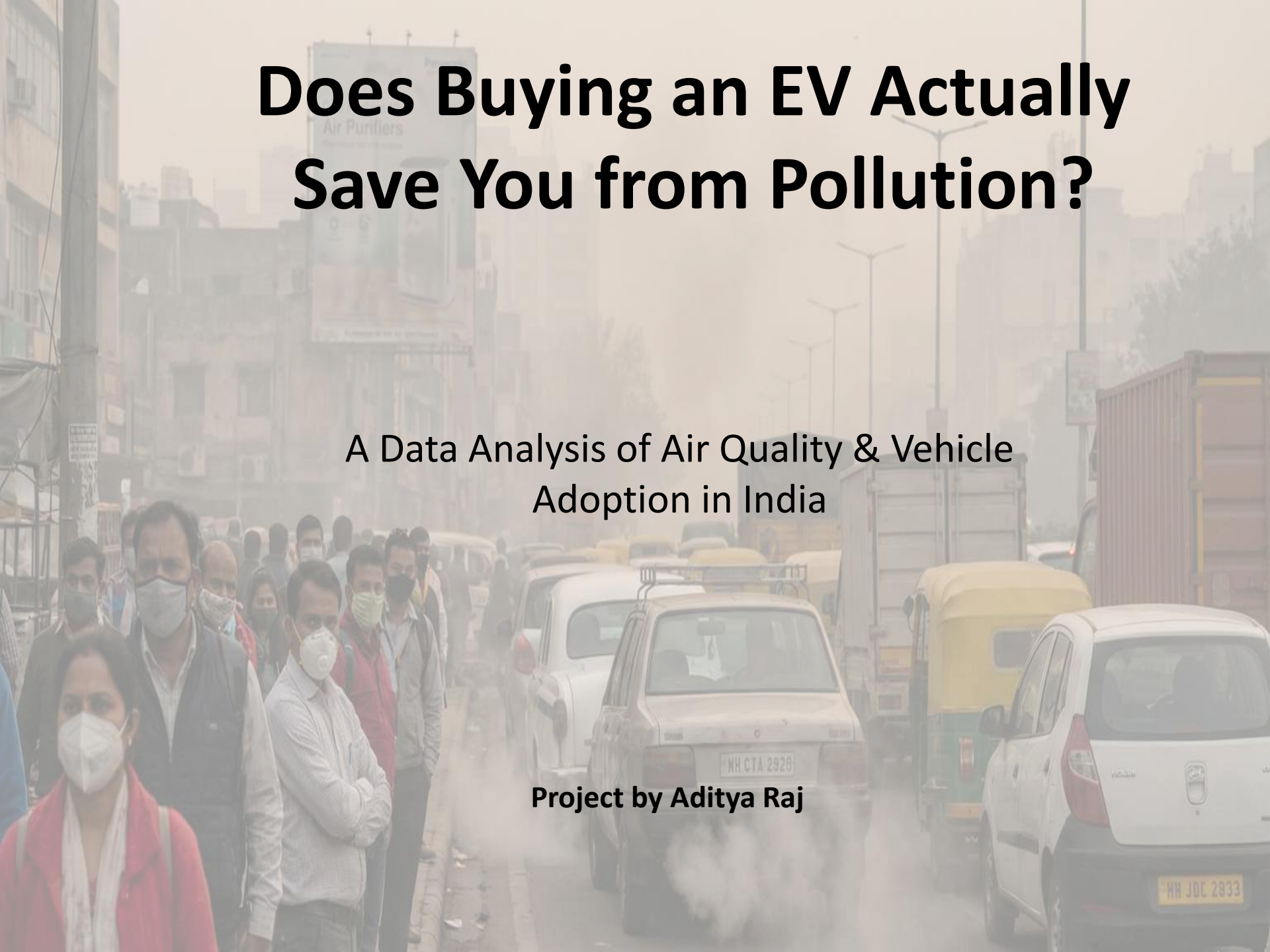


# **Does Buying an EV Actually Save You from Pollution?**

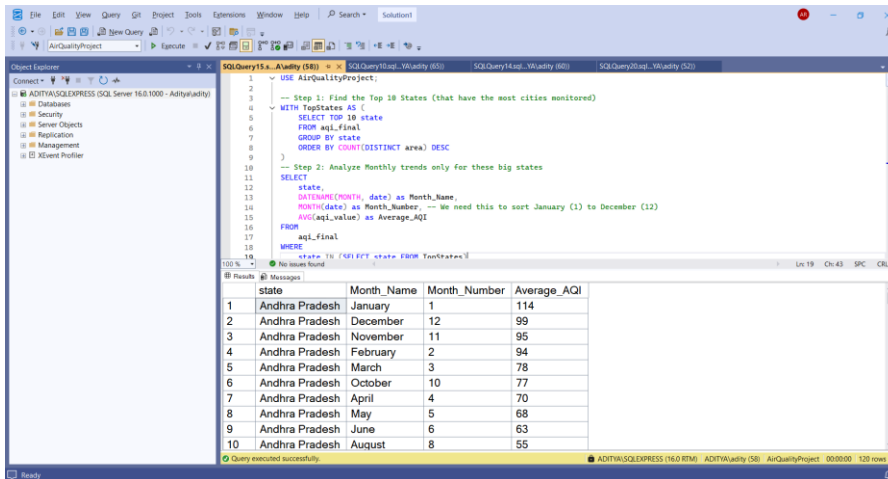
**A Data Analysis of Air Quality & Vehicle  
Adoption in India**

**Project by Aditya Raj**



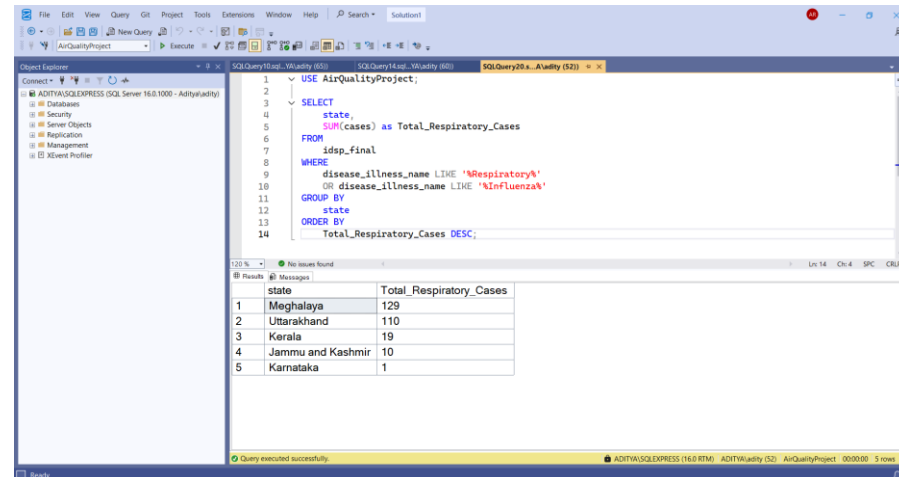
# The Client Challenge

- **Client:** AirPure Innovations (Market Entry Strategy).
- **The Myth:** "We assume cities with high EV adoption have cleaner air."
- **The Question:** "Is this true? Or are EV owners still breathing toxic air?"
- **My Role:** Analyzed 3 datasets (Pollution, Health, Vehicles) to find the truth.



The screenshot shows a SQL Server Enterprise Manager window with a query titled 'SQLQuery15 - AirQuality (58)'. The query is designed to find the top 10 states with the highest average AQI. It uses a CTE named 'TopStates' to identify the top 10 states based on the average AQI, and then a main query to show the monthly trends for these states. The results table shows data for Andhra Pradesh across various months, with the highest average AQI of 114 in January.

state	Month_Name	Month_Number	Average_AQI
1	Andhra Pradesh	January	114
2	Andhra Pradesh	December	99
3	Andhra Pradesh	November	95
4	Andhra Pradesh	February	94
5	Andhra Pradesh	March	78
6	Andhra Pradesh	October	77
7	Andhra Pradesh	April	70
8	Andhra Pradesh	May	68
9	Andhra Pradesh	June	63
10	Andhra Pradesh	August	55



The screenshot shows a SQL Server Enterprise Manager window with a query titled 'SQLQuery28 - AirQuality (52)'. The query is designed to find the total number of respiratory cases for each state. It uses a CTE named 'TotalRespiratoryCases' to calculate the sum of cases for each state, and then a main query to show the results. The results table shows data for Meghalaya, Uttarakhand, Kerala, Jammu and Kashmir, and Karnataka, with Meghalaya having the highest total of 129 cases.

state	Total_Respiratory_Cases	
1	Meghalaya	129
2	Uttarakhand	110
3	Kerala	19
4	Jammu and Kashmir	10
5	Karnataka	1

# Insight 1: The "EV Paradox"

Uttar Pradesh & Delhi  
have the **HIGHEST** EV  
Registrations (900k+)

...But they still suffer  
from **SEVERE** Air  
Quality (AQI 200+)

**Conclusion: EVs alone aren't fixing the air yet. These  
are prime markets for Air Purifiers**

# Insight 2: The Invisible Killer (Bengaluru)

- **Observation:** Bengaluru rarely has "Poor" AQI days.
- **The Trap:** People think the air is safe because they don't see smog.
- **The Data:** PM2.5 levels are persistently "Moderate"—enough to cause long-term lung damage.
- **Strategy:** Marketing Pivot: Don't sell 'Fear of Smoke'. Sell 'Long-term Wellness' and 'Invisible Protection'.

## Air Purifier Market Strategy Dashboard

153M

Lives Impacted

111.13

Avg National AQI

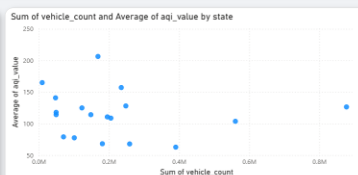
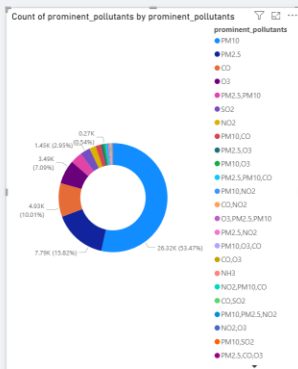
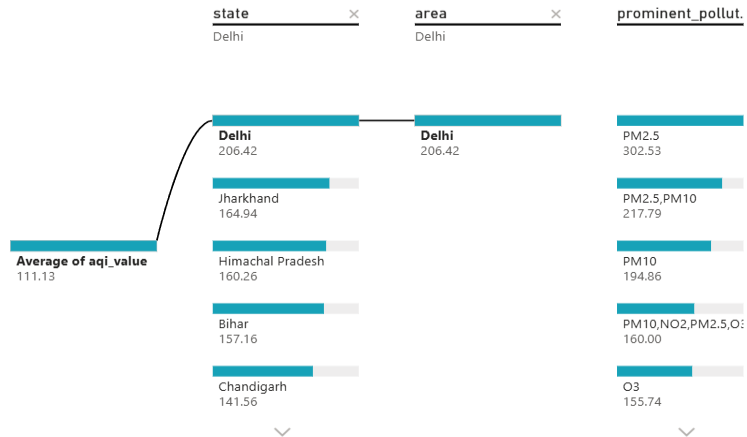
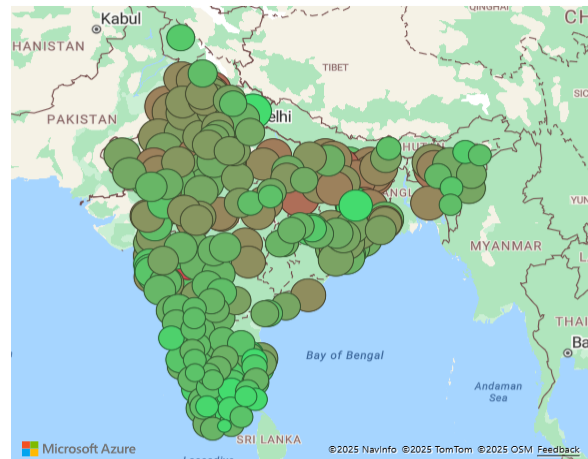
5M

Total EVs

Year

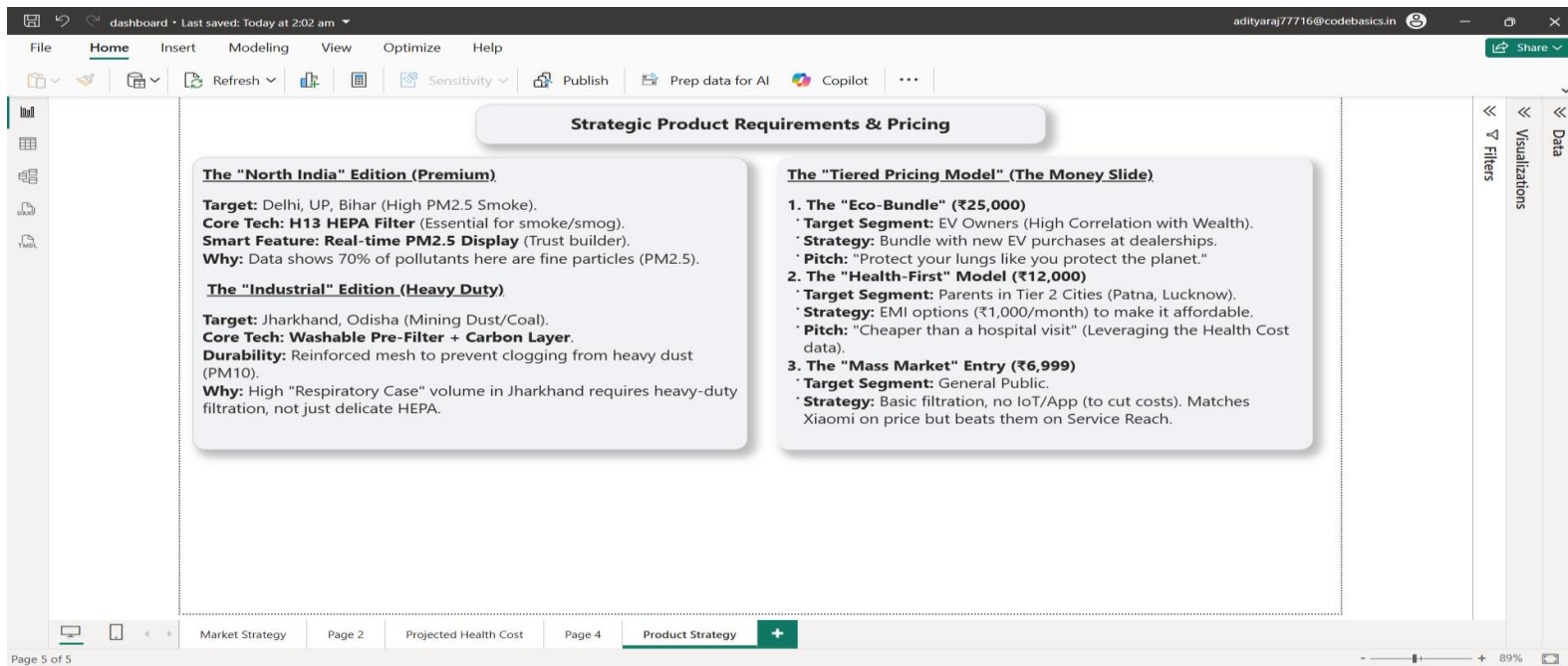
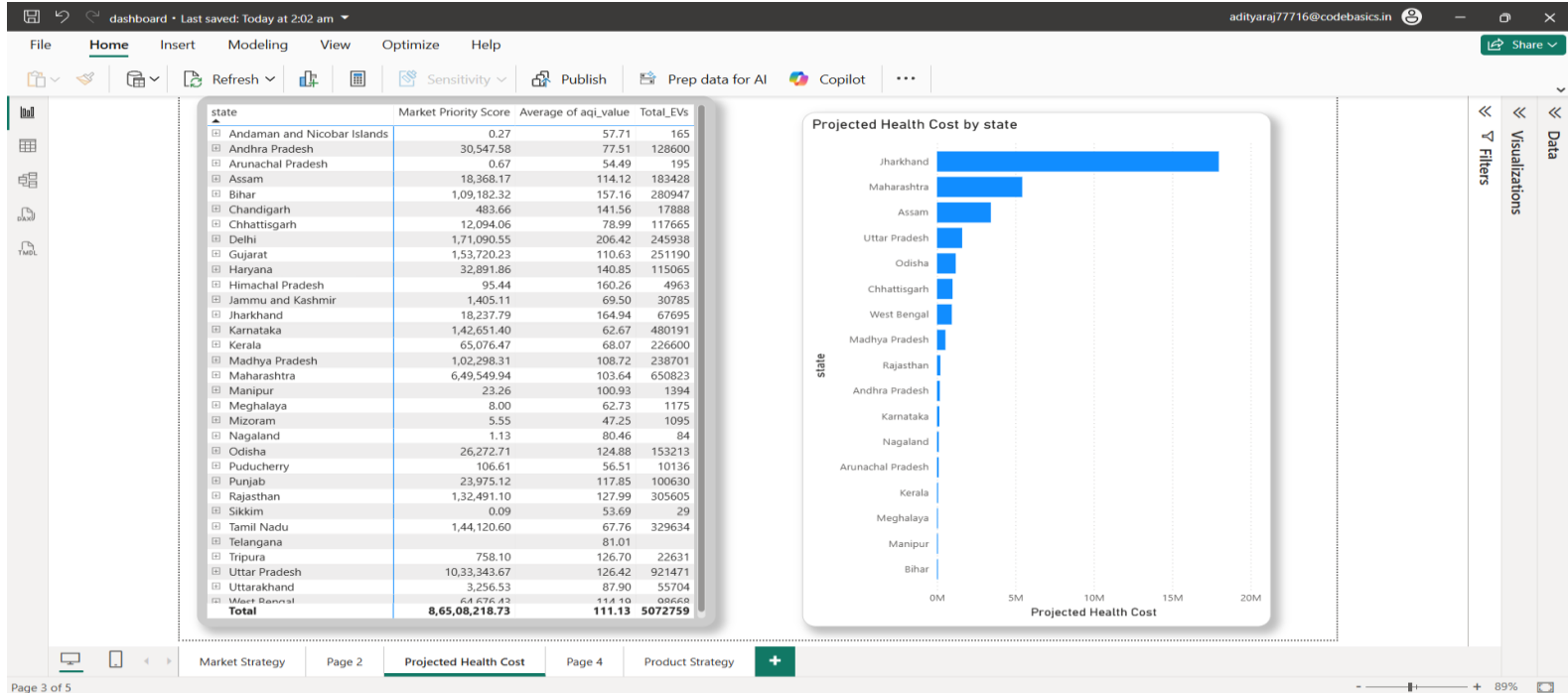
All

### Average AQI by Area



state	disease_illness_name	Respiratory Cases
Assam	Acute Diarrheal Disease	1145
Assam	Acute encephalitic syndrome	1145
Assam	Acute Flaccid Paralysis	1145
Assam	Acute Gastroenteritis	1145
Assam	Acute Hepatitis A	1145
Assam	Acute Hepatitis B	1145
Assam	Animal bite - Dog Bite	1145
Assam	Animal bite - Snake Bite	1145
Assam	Chickpox	1145
Assam	Chickpox and Measles	1145
Assam	Chikungunya	1145
Assam	Cholera	1145
Assam	Dengue	1145
Assam	Dengue and Chikungunya	1145
Assam	Diphtheria	1145
Assam	Dysentery	1145
Assam	<b>Total</b>	<b>1145</b>

Brand	First Weakness	First IoT_App_Control	First Tier2_Service_Reach	First Price_Segment
AirPure	New Brand	Yes	High	Mid-Range
Dyson	Too Expensive	Yes	Low	Premium (₹40k+)
Philips	Old Design	No	High	Mid-Range (₹15k+)
Xiaomi	Low Durability	Yes	Medium	Budget (₹8k+)
<b>Total</b>	<b>Low Durability</b>	<b>No</b>	<b>High</b>	<b>Budget (₹8k+)</b>



# Tech Stack & Deliverables

- **SQL Server:** Complex Joins, CTEs, Window Functions.
- **Power BI:** Interactive Dashboards & Risk Scoring.
- **Excel:** Data Cleaning & Verification.

[Link to Full Project & SQL Code in the Comments](#) 