PhonePe Transaction Insights- Project Documentation

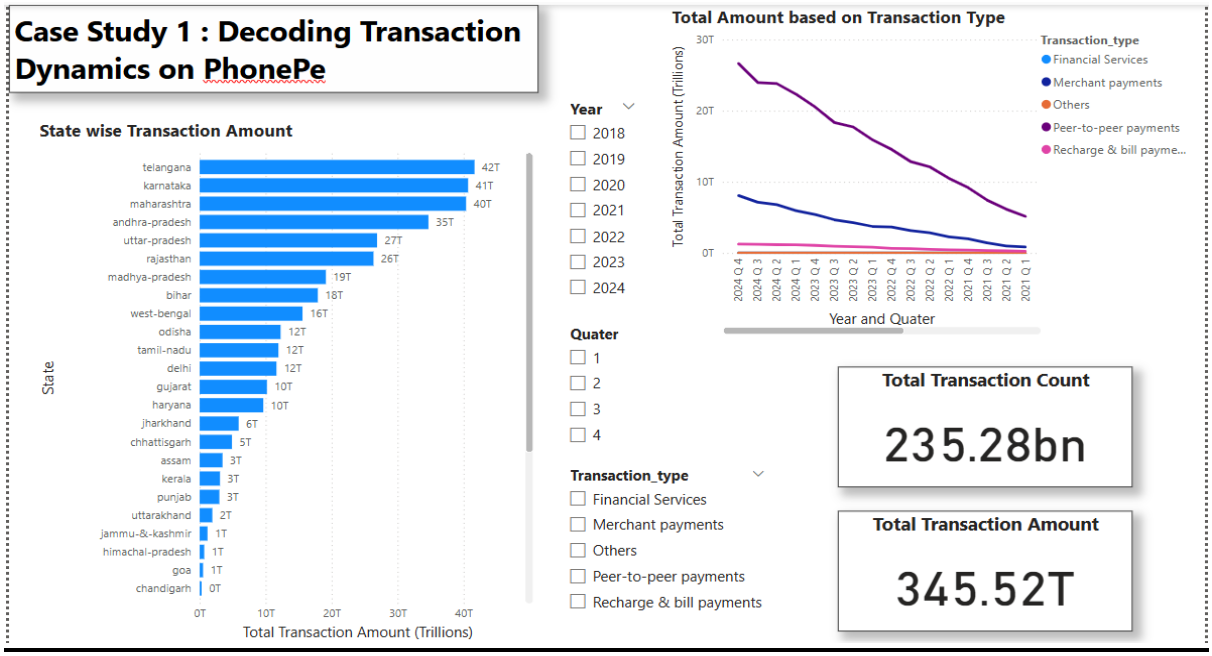
Project Overview:

- With the increasing reliance on digital payment systems like PhonePe, understanding the dynamics of transactions, user engagement, and insurance-related data is crucial for improving services and targeting users effectively.
- This project aims to analyse and visualize aggregated values of payment categories, create maps for total values at state and district levels, and identify top-performing states, districts, and pin codes.
- The objective is to drive business strategies through data-driven insights visualized in Power BI.
- **Tools Used**: Python (for MySQL connection, Data Preparation), Power BI (for Visualization)
- **Data Sources**: Cloned GitHub "PhonePe Pulse" dataset
- **Database**: MySQL (9 Structured Tables)

Data Preparation:

- In Jupyter Notebook, Cloned the “PhonePe Pulse” repository.
- Created 9 structured tables:
  - aggregated_user
  - aggregated_transaction
  - aggregated_insurance
  - map_user
  - map_map
  - map_insurance
  - top_user
  - top_map
  - top_insurance
- With the help of Pymysql library, made a connection between MySQL and Python Jupyter Notebook.
- Then created 9 tables and inserted the values.
- Connected Power BI to MYSQL Database and loaded all the tables in Power BI.

Case Study 1: Decoding Transaction Dynamics on PhonePe



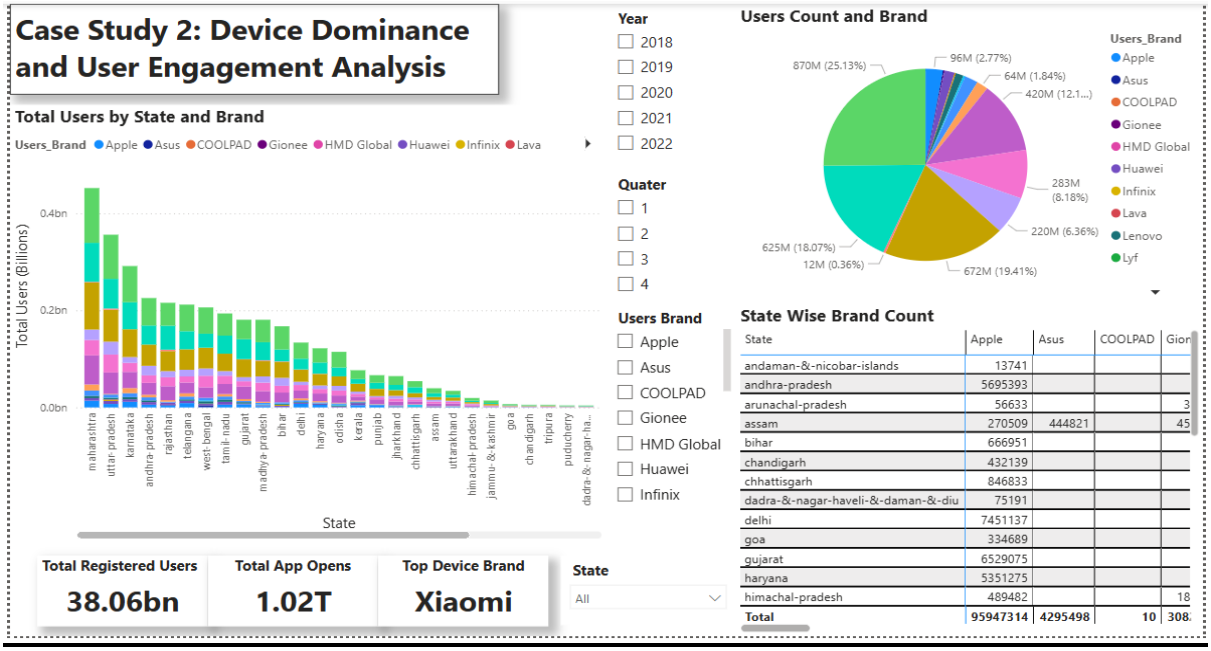
Visuals:

- **Bar Chart**: Transaction Amount by State
- **Line Chart**: Transaction Amount by Year & Quarter (Transaction Type-wise)
- **Card Visuals**: Total Transaction Count and Total Transaction Amount
- **Slicers**: Year, Quarter and Transaction type filters

Insights:

- Telangana and Karnataka lead in transaction volumes.
- Merchant payments dominate across states.
- Growth trend peaked in 2021 and 2022, minor slowdowns visible in Q4 2023.

Case Study 2:Device Dominance and User Engagement Analysis



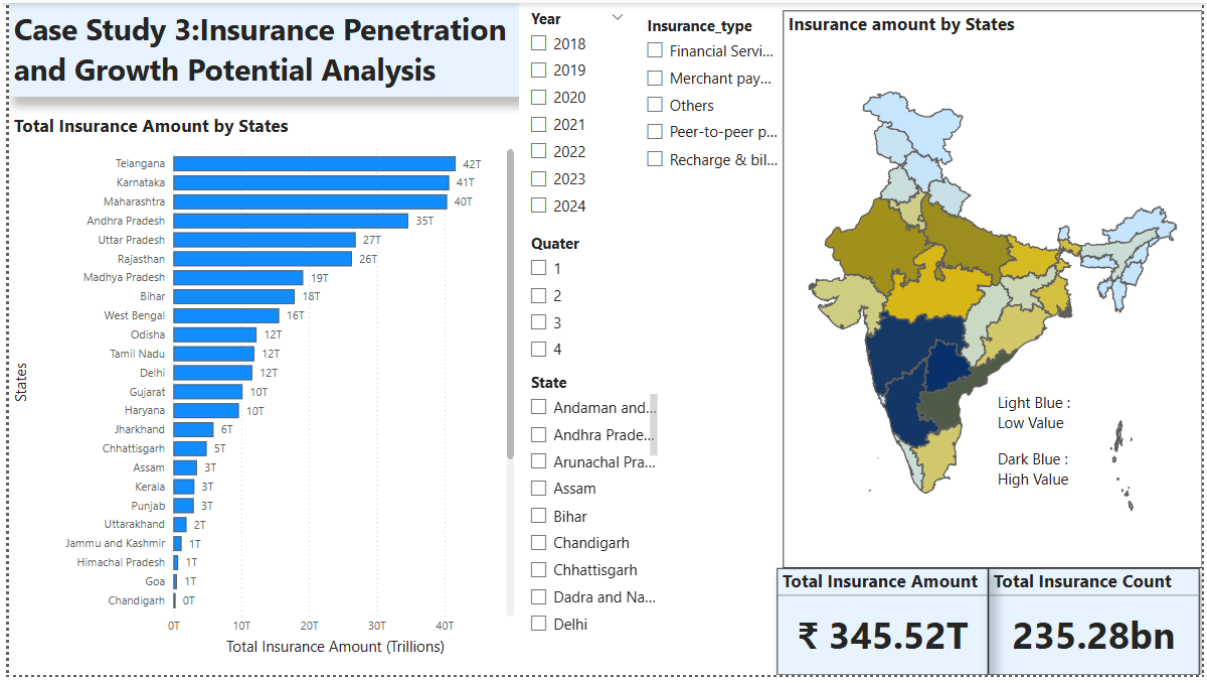
Visuals:

- **Stacked Bar Chart:** Users Count by Brand and State
- **Pie Chart:** Brand-wise Registered Users Count
- **Matrix:** State-wise Brand Counts.
- **Card Visual:** Total Registered Users, Total App Opens, Top Device Brand

Insights:

- Xiaomi, Samsung, and Vivo lead in user registrations.
- Device engagement growth was high post-2020.
- Certain brands dominate in Tier 2 and Tier 3 states.

Case Study 3: Insurance Penetration and Growth Potential Analysis



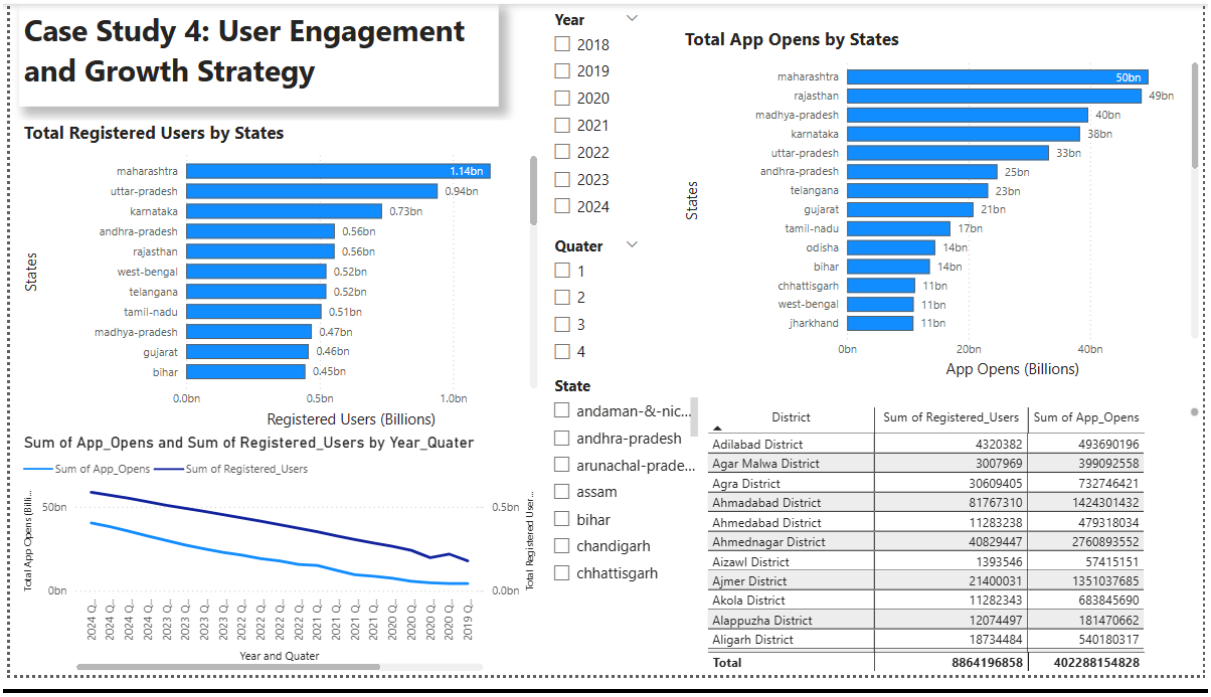
Visuals:

- **Bar Chart**: Insurance Amount by State
- **Shape Map**: Insurance Amount Distribution across States
- **Line Chart**: Insurance Count Trend over Years
- **Card Visuals**: Total Insurance Policies and Total Insurance Amount
- **Slicers**: Year, Quarter, Insurance Type and State filters

Insights:

- Tamil Nadu and Karnataka show high insurance penetration.
- Insurance growth was exponential from 2020 to 2023.
- Low adoption states present high growth potential (e.g., Bihar, Assam).

Case Study 4: User Engagement and Growth Strategy



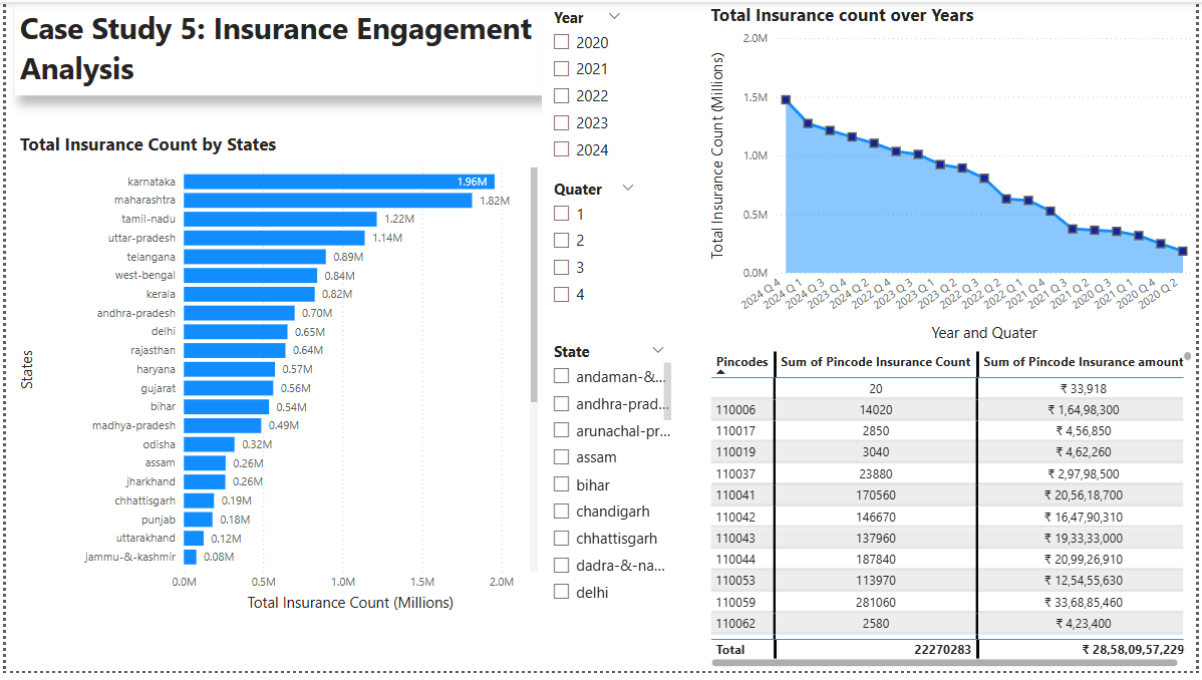
Visuals:

- **Bar Chart**: Registered Users by State
- **Bar Chart**: App Opens by State
- **Line Chart**: App Opens Trend over Time
- **Table**: Detailed District Engagement
- **Slicers**: Year, Quarter and State filters

Insights:

- Maharashtra and Uttar Pradesh show high engagement.
- Some states have high registrations but comparatively lower app opens (targeted campaigns needed).
- Districts with high growth potential identified.

Case Study 5: Insurance Engagement Analysis



Visuals:

- **Bar Chart**: Insurance Count by State
- **Table**: Top PIN Codes for Insurance Transactions
- **Line Chart**: Yearly Growth Trend on Insurance count
- **Slicers**: Year, Quarter and State filters.

Insights:

- Kerala and Tamil Nadu show high insurance transaction density.
- Top PIN codes clustered in metros (Chennai, Bangalore).
- Insurance adoption opportunity exists in North-East and rural India.

Best Practices Followed:

- Cleaned and standardized State/District names.
- Used Measures for clean KPI names instead of raw sums.
- Applied appropriate data types (Pincodes as Text).
- Used slicers for dynamic filtering (Year, Quarter, State).
- Used professional colour themes for insurance and user engagement visuals.
- Optimized Shape Map for India using TopoJSON.

Conclusion:

The "PhonePe Transaction Insights" project successfully visualizes transaction growth, user behaviour, insurance adoption, and device dominance across India. These insights enable PhonePe to:

- Target high-growth regions.
- Optimize marketing strategies.
- Improve insurance product offerings.
- Enhance user engagement across devices and geographies.