Title:- PhonePe Transaction Insights

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Introduction :

Overview:

- This project is used for visualizing the total transaction amounts across different **years, quarters and states.**
- It also provides **state-wise trends** using a **choropleth map** to highlight transaction distributions.
- Examines transaction amounts by **category,** helping understand user preferences.

Importance:

- Helps analyze **digital transactions trends** across Indian states.
- Business cases can understand **spending patterns and user behavior** for decision making.

Technology Stack :

- **Jupyter Notebook** for running the code.
- **Streamlit** for app development.
- **MySQL** for querying financial data.
- **Plotly & Seaborn** for rich data visualization.
- **GeoJSON** integration for geographic mapping.

Data Collection & Processing :

Data Collection :

- The dataset was extracted from the PhonePe Transaction records(JSON Files). Covering the state wise transaction, categories and quarters.
- Data was retrieved using SQL queries from a MySQL database.

Processing :

- Ensured that transaction records have no missing values in key fields like state, year, quarters, and amount.
- Used SQL filtering to avoid incomplete or duplicate values.

Visualization & Insights :

Filtering Insights :

- Focused on transaction amount, user counts, and policy values, ignoring unnecessary attributes.
- Used aggregated queries(SUM, GROUPBY, ORDERBY) to simplify data analysis.

GeoJSON Integration :

- Loaded an Indian states GeoJSON file to map transactions geographically.
- Matched state names between CSV and GeoJSON file with .title() – function. (Ex : “andhra pradesh” to “Andhra Pradesh”).
- Displayed the columns with state and transaction_count in the map with color(Blues).

Business Case Studies :

Decoding Transaction :

- Telangana, Maharashtra, and Karnataka recorded the highest transaction amounts, indicating strong digital adoption and economic activity.
- Uttar Pradesh and Rajasthan, ranked high in transaction counts, showing widespread user participation.
- Smaller states like Jharkhand and Haryana had lower transaction, but showed steady growth in digital payments. And also provided the ‘states values and transaction’ details with queries in it.

Device & User Analysis :

- Top brands (Samsung, Apple, Xiaomi) had the highest registered users and app opens, suggesting device preference influence fintech adoption.
- App open rates were highest in urban regions, showing frequent engagement by users. There are 5 different query in it with detail of user information.

Business Case Studies :

Insurance & growth Analysis :

- Maharashtra, Karnataka, and Tamil Nadu led in insurance sales, indicating high awareness and financial planning among users.
- Rural States had lower policy adoption, highlighting a gap in insurance penetration.
- Higher transaction regions tends to have a greater policy uptake, suggesting a financial literacy drives insurance investments.
- In this there are 5 queries and each query shows different ‘Insurance Values, Policies, Sold Policies’ in detailed.

Market Transaction Analysis :

- States with high registered users also showed higher app open rates, meaning fintech engagement increases with user base expansion.
- Frequent app usage in financial hubs like Bengaluru & Mumbai suggests advanced digital banking adoption and explained in detailed with queries.

Business Case Studies :

User & Growth Strategies :

- Maharashtra led in total transaction value, indicating strong business activity.
- Southern states (Karnataka, Tamil Nadu, Andhra Pradesh) contributed significantly to transaction value, showing fintech maturity.
- Low transaction states (Northeast & Smaller regions) require financial inclusion efforts for improved adoption.
- There are 5 queries are solved in this. Each query shows different ‘Yearly Transactions, Values, Quarters’ in detailed.

Conclusion :

Final Thought :

- This project showcases technical excellence, strategic financial thinking and a user-details approach to data analysis. It's a valuable contribution to fintech analytics, with the potential to drive real business decisions.

Key Achievements :

- Successfully integrated streamlit application for a dynamic and user-friendly UI.
- Mappes transaction trends with GeoJSON-powered choropleth visualizations.
- Optimized MySQL queries for accurate financial insights.
- Developed five detailed business case studies addressing fintech and insurance trends.

THE END