✅ 1. Data Cleaning & Preparation

- Verified **no missing or null values** across all columns
- Converted `transaction_Date` into **datetime** format and used a **monthly aggregation** to identify trends over time
- Filtered the dataset to focus on `Completed` **transactions** for more accurate analysis
- Checked for and removed duplicates and invalid values (e.g. zero or negative numbers)

🔍 2. Exploratory Data Analysis (EDA)

General Observations

- Strong correlation between `total_value` and `transcation_fee` which could indicate a proportional fee structure
- Users all made 1-3 transactions across various pla
- The dataset has a **relatively balanced distribution** across:
  - `status`
  - `platform`
  - `crypto`

Key KPIs Identified

1. **Transaction Count by Type and Platform**
   - Indicates common user behaviors and preferred exchanges
   - Measures the number of transactions across different `transaction_type` and `platform`

2. **Total Transaction Value by Wallet Type**
   - Indicates high-value user behaviour, preferred custody options
   - Measures total value of transactions across `wallet_type` and `platform`

3. **Monthly Growth in Transaction Value**
   - Indicates user activity trends and app adoption over time
   - Measures average `transaction_value` over time

📈 3. Visualization & Reporting

🔹 Chart 1: Crypto Volume Share Over Time

- Visualizes monthly total transaction value by cryptocurrency
- **Decline in Polkadot** and a **gradual rise in XRP** (16.3%), suggesting a shift in user interest
- 📌 *Insight*: XRP could be a new marketing focus, potentially replacing Polkadot in user preferences
- 🔗 **KPI Link**: Monthly growth (KPI 3) - tracks crypto-specific trends over time

🔹 Chart 2: Transaction Type by Platform

- Compares frequency of transaction types across platforms
- **Coinbase leads** transaction volume, especially in **Staking** (117 transactions), outperforming Binance by 10%
- 📌 *Insight*: Suggests Coinbase may offer better staking incentives or user experience, contributing to higher engagement
- 🔗 **KPI Link**: Transaction behaviour by platform (KPI 1)

🔹 Chart 3: Wallet Type vs Transaction Count

- Shows the distribution of transaction count across wallet types
- **Hot and Exchange wallets** dominate, indicating a preference for easily accessible or custodial setups
- 📌 *Insight*: Reflects behaviour of active, everyday users vs. long-term or security-focused holders
- 🔗 **KPI Link**: Platform behaviour insights (KPI 1)

🔹 Chart 4: Wallet Type vs Average Transaction Value

- Displays average transaction value by wallet type
- **Hardware wallets (Trezor, Ledger)** handle higher-value transactions than hot or exchange wallets
- 📌 *Insight*: Identifies high-value (premium) users, potentially suitable for VIP features or higher-security options
- 🔗 **KPI Link**: High-value behaviour by wallet type (KPI 2).

🧰 Dashboard Filters Used

- ✅ **Filtered to Completed transactions** only: Assuming fees apply only to successful transactions
- ✅ **Date range starts from March 2023**: February had limited data and was excluded to avoid skew

💡 4. Business Insights & Recommendations

🔄 Staking is the dominant activity

- Enhance staking features within the wallet: guided onboarding, yield visibility, or staking-as-a-service

🌐 Binance and Coinbase lead in transaction volume

- Focus marketing and integrations around these platforms to retain and grow the user base

💼 High-value transactions come from hardware wallets

- Target these users with VIP programs, security features, or loyalty rewards

📈 Transaction values show steady monthly growth

- Monitor trends to time feature rollouts and evaluate adoption impact

🪙 Ethereum and Polkadot are consistently high in volume

- Consider spotlighting these assets on the Trust Wallet interface or promoting their ecosystems