Noorzahrah Cintya Ningrum
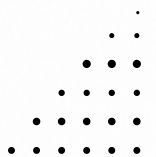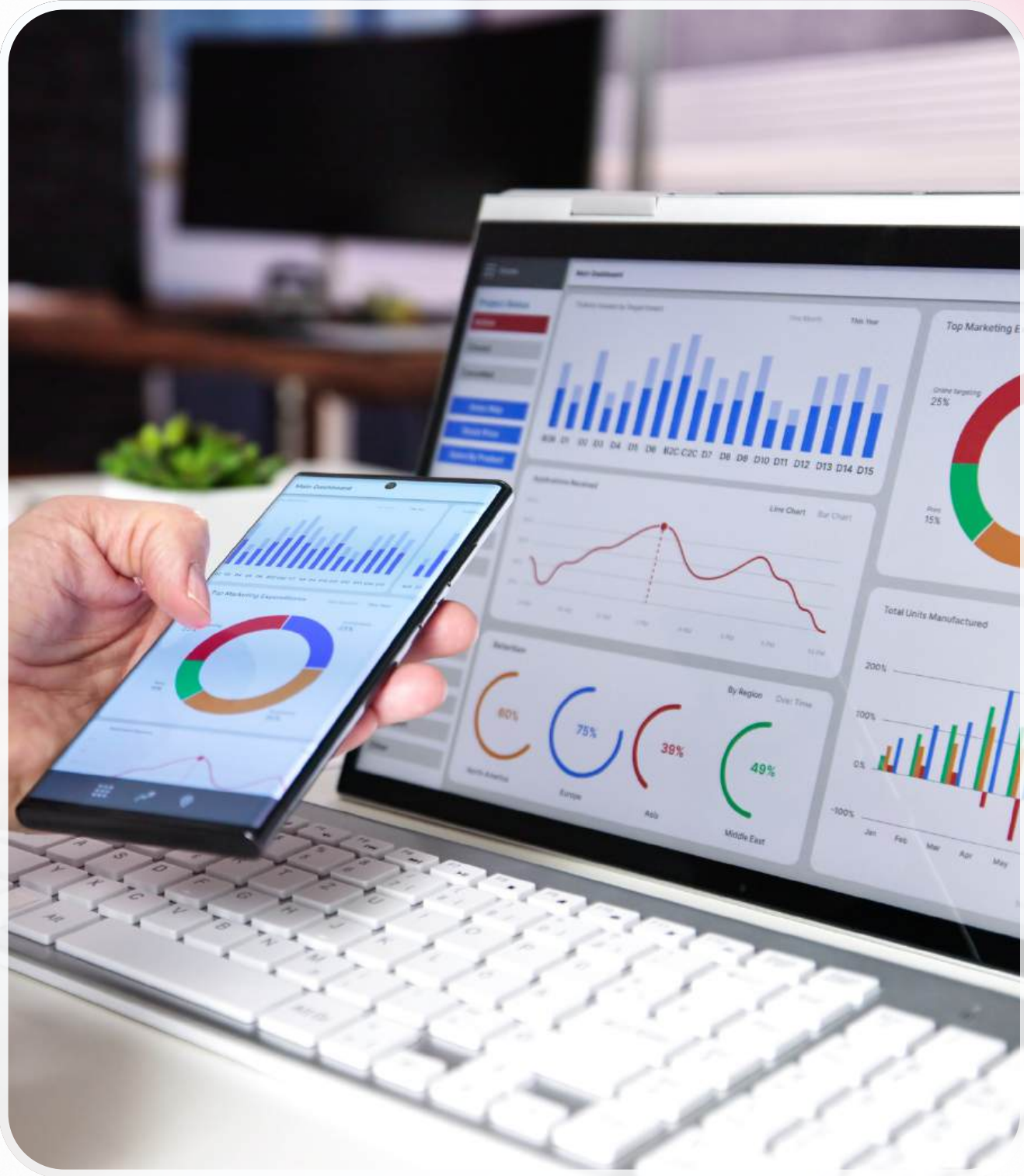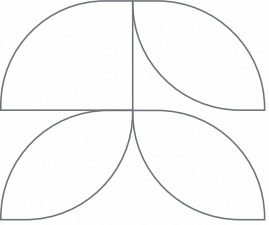
Technical Test 1 - Data Analyst

Client Behavior
Dashboard

A yearly performance overview to unlocking Insights.

Project Overview
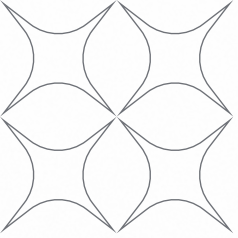
KPI Review

Key Performance Indicator

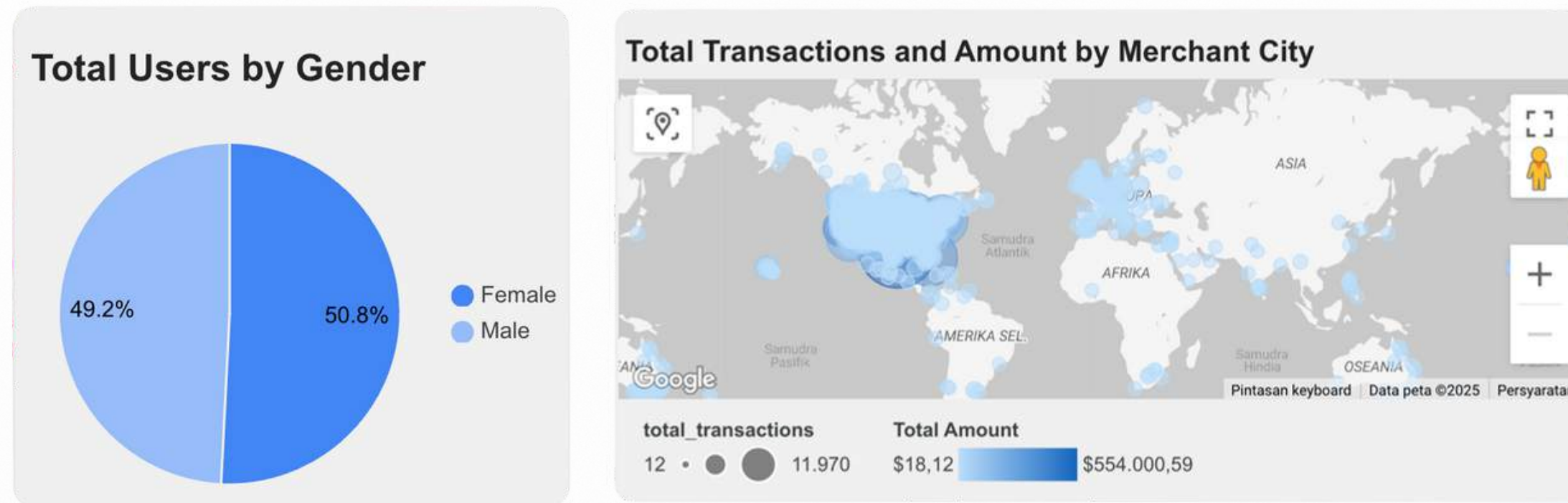| Users	Transactions	Total Cards	Total Amount
2.000	1.048.575	6.146	$45.902.152,78

- Users represent the number of active banking customers using cards.
- Transactions reflect strong customer activity with over one million transactions processed.
- Total cards indicate that customers on average hold multiple card products which shows trust and product diversification.
- The total amount highlights the substantial transaction value demonstrating strong customer engagement and revenue potential.

These KPIs provide a clear snapshot of banking performance—although the customer base is relatively small, their activity level and transaction value make them highly valuable to the bank.

User Demographics

Total Users by Gender

49.2%   50.8%

● Female
● Male

Total Transactions and Amount by Merchant City

total_transactions
12 · ● ⬤ 11.970

Total Amount
$18,12 ▮▮▮▮ $554.000,59

- The customer base is almost evenly split with 50.8% female and 49.2% male, showing a balanced gender distribution.
- Transaction activity is spread across multiple cities, but Houston stands out as the top merchant city.
- Houston records the highest number of transactions with 11,970 and the largest transaction value amounting to $554,000.59.

The demographics reveal a balanced gender distribution and identify Houston as the key merchant hub, making it an important focus for banking strategies.

Card Distribution



Cards Distribution by Brand & Type
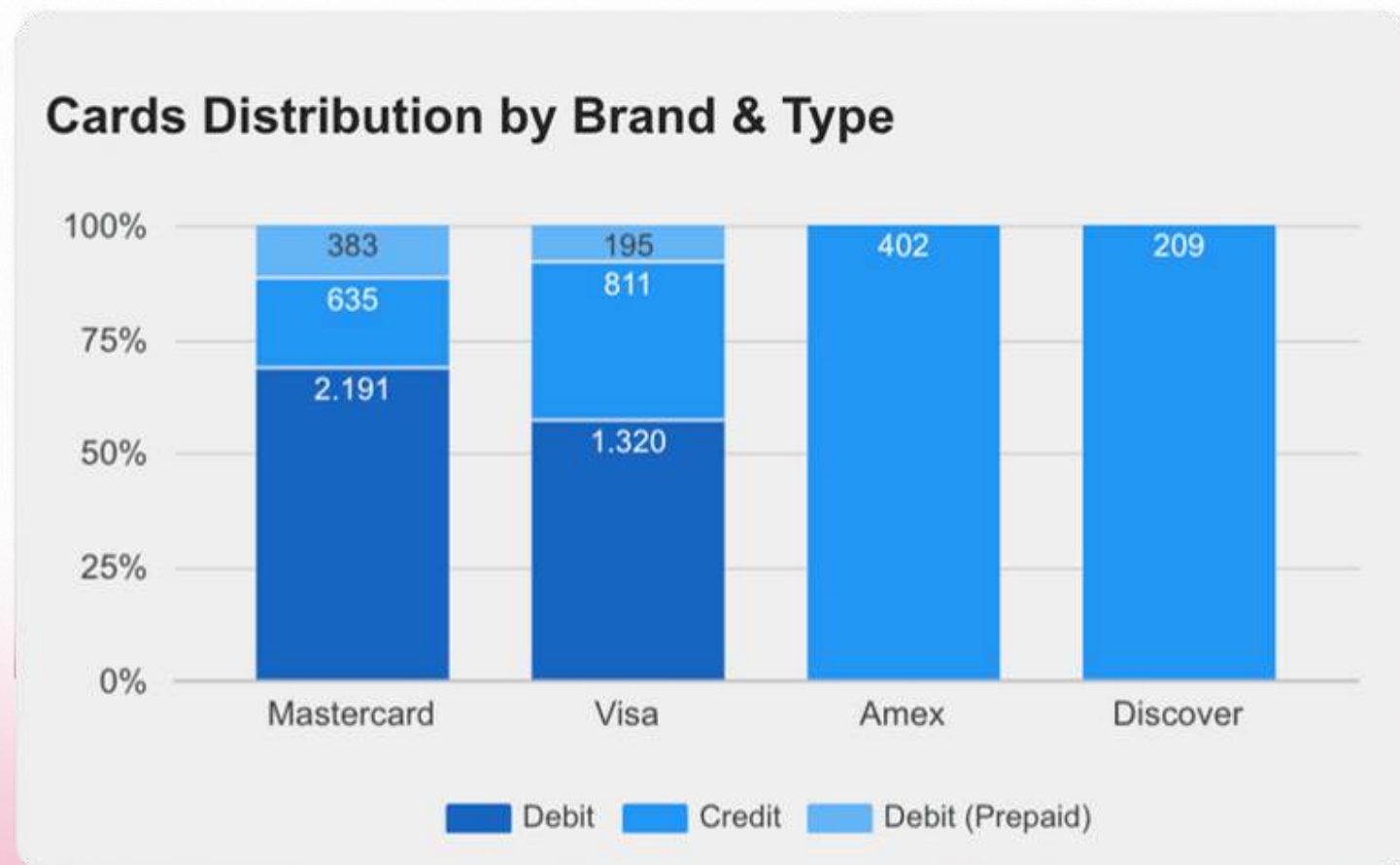
- Mastercard dominates the card portfolio with 2,191 debit cards, 635 credit cards, and 383 prepaid cards.
- Visa also holds a strong position with 1,320 debit cards, 811 credit cards, and 195 prepaid cards.
- Amex and Discover have smaller shares, with 402 and 209 cards respectively, mostly in the prepaid segment.

Debit cards are the most widely used products, followed by credit cards, while prepaid cards remain less popular. Mastercard and Visa dominate the portfolio, whereas Amex and Discover have only a small presence. This indicates strong reliance on traditional card types and well-established brands.

Spending Behavior

Spending Behavior by Age Group
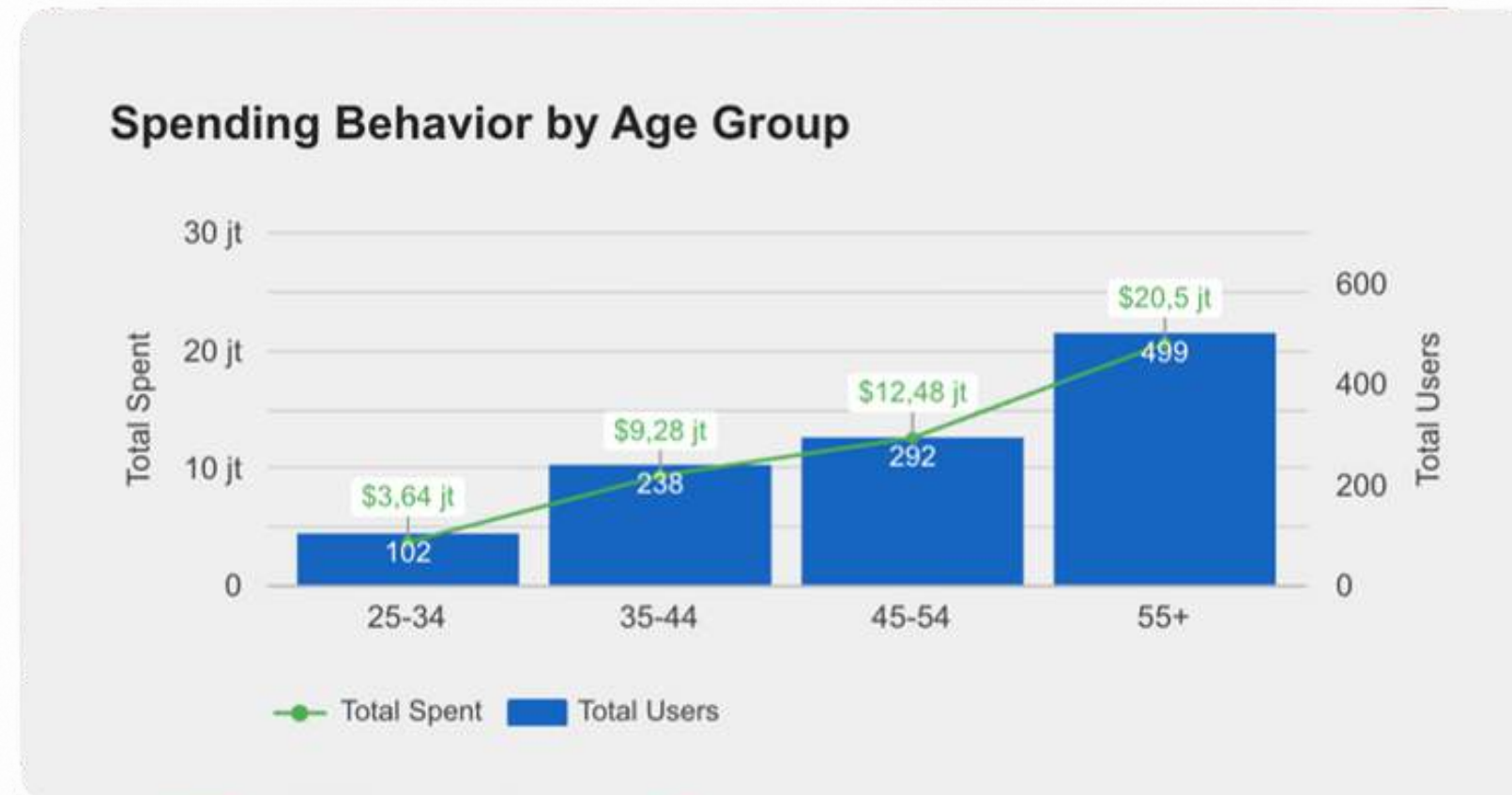
- The 25–34 group has the fewest users with 102 customers and spending of $3.64M.
- The 35–44 group grows to 238 users with total spending of $9.28M.
- The 45–54 group continues the trend with 292 users and $12.48M in spending.
- The 55+ group has the largest customer base with 499 users and the highest spending of $20.5M.

Spending increases along with the number of users in each age group, with the 55+ segment showing the largest customer base and the highest total spending. This indicates that older customers are the bank's most valuable group in terms of spending power.

Priority Clients

Loyalty Users based on Yearly Income & Total Transactions
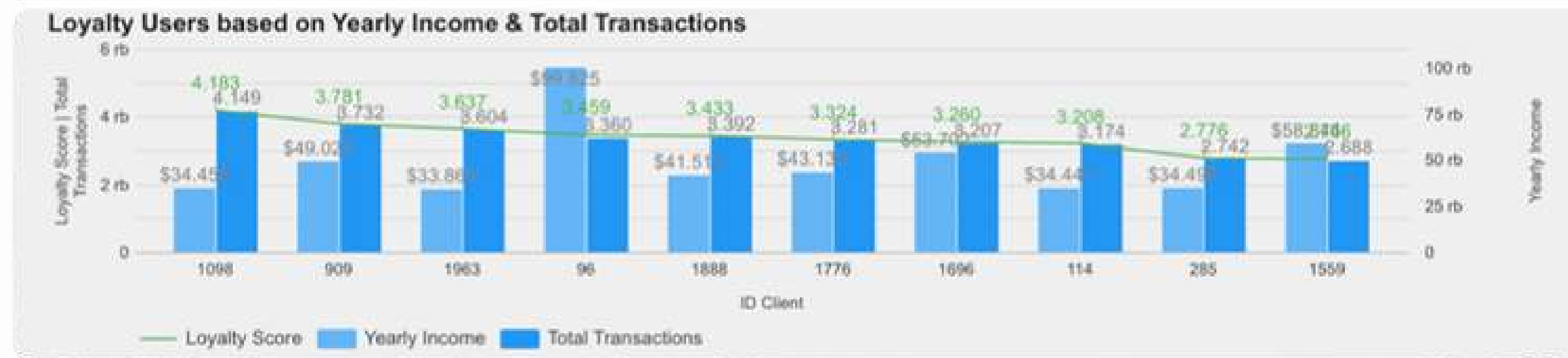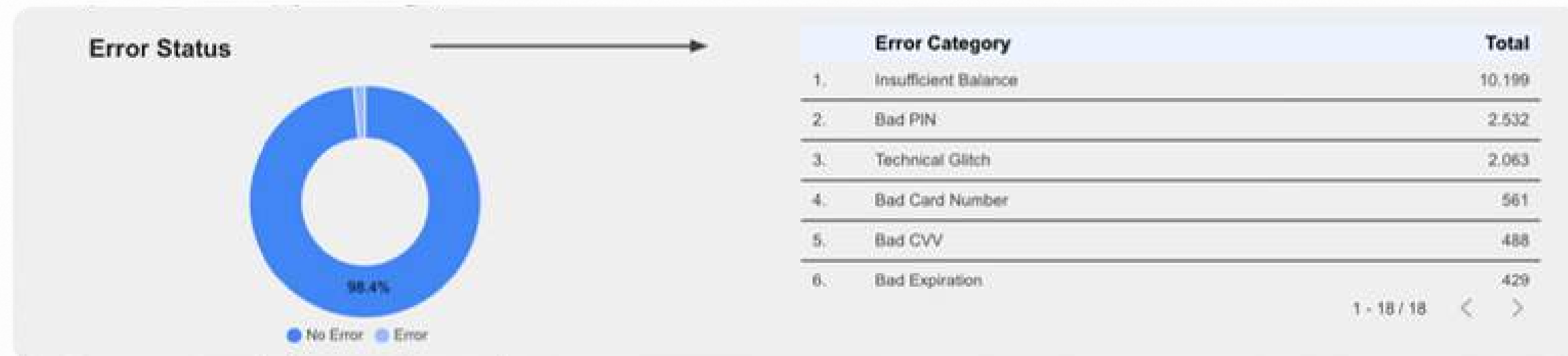
- Priority clients are identified based on their yearly income and total transactions, with higher income and transaction levels showing stronger loyalty scores.
- Clients with yearly income above $40,000 and consistent transaction activity contribute significantly to overall performance.
- The loyalty score gradually decreases across clients, suggesting that not all high-income users maintain the same level of engagement.
- These insights highlight the need to strengthen relationships with high-value clients while improving loyalty among those with lower engagement.

Priority clients represent the bank's most profitable segment, making them essential for targeted retention strategies and personalized service offerings

Errors Details

	Error Category	Total
1.	Insufficient Balance	10,199
2.	Bad PIN	2,532
3.	Technical Glitch	2,063
4.	Bad Card Number	561
5.	Bad CVV	488
6.	Bad Expiration	429

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Error Status

98.4%

● No Error ● Error

- Most transactions are processed successfully, with 98.4 percent showing no errors.
- The most frequent error is insufficient balance, occurring 10,199 times.
- Other common issues include incorrect PIN entries (2,532 cases) and technical glitches (2,063 cases).

Errors are relatively rare, but insufficient balance and PIN errors dominate. This indicates the need for better customer education on account management and continued improvements in transaction reliability.

User Segmentation

User Segment Per Months

mm/yy ▲	User Segment	Total User	Total Transactions	Total Spent
1. Jan 2010	New User	5	26.939	$1.118.994,24
2. Jan 2010	Returning User	1.078	11.966.670	$501.741.983,42
3. Feb 2010	New User	13	87.284	$4.699.436,09
4. Feb 2010	Returning User	1.084	10.015.640	$425.907.271
5. Mar 2010	New User	3	13.347	$839.117,95
6. Mar 2010	Returning User	1.094	12.234.640	$521.868.370,98

- New User refers to a customer who uses the bank's card or services for the first time during a given period. They had no prior transaction history with the bank.
- Returning User refers to an existing customer who has previously used the bank's card or services and continues to make transactions in subsequent periods. Returning users dominate the activity, contributing the majority of transactions and total spending compared to new users.

Returning users form the core of the customer base and drive the bank's performance, while new user acquisition remains relatively small and presents a potential growth opportunity.

Insight Key

Overall summary of customer behavior, transaction patterns, and areas for growth based on the analysis.

Customer Base and Activity

The bank has a relatively small but highly active customer base, with returning users contributing the majority of transactions and spending.

Card Distribution & Transaction

Debit cards dominate card usage, followed by credit cards, while Mastercard and Visa are the leading brands. Houston emerges as the top merchant city in terms of both transactions and spending.

Spending Patterns

Spending grows in line with the number of users in each age group, with the 55+ segment showing the largest customer base and the highest transaction value.
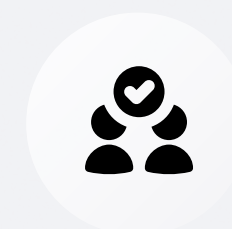
System Performance and Priority Clients

Transaction errors are rare, with insufficient balance and incorrect PIN being the most common issues. Priority clients with higher income and transactions are the most valuable segment, requiring focused retention strategies.

Technical Test 1 - Data Analyst

Thank You

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