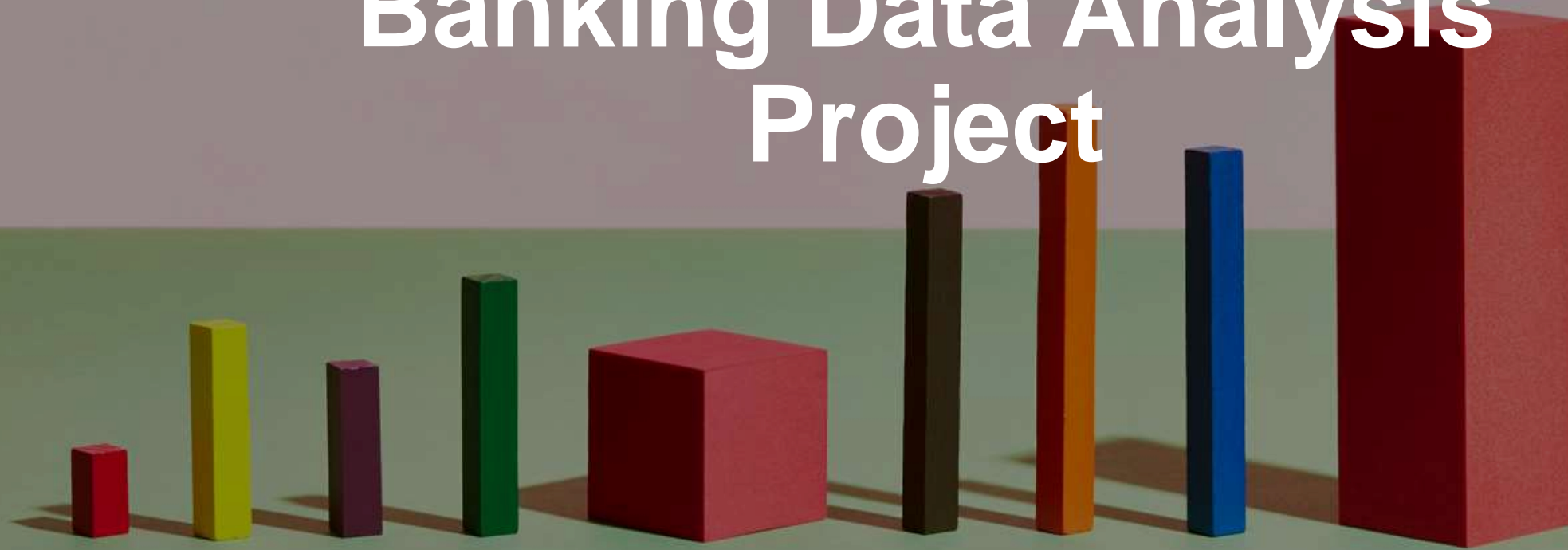


# Czechoslovakia Banking Data Analysis Project



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# Project Overview



This project presents an end-to-end data analysis pipeline for financial dataset from Czechoslovakia bank. It involves data ingestion from local flat files, integrate the data using informatica and upload the data to database created in MYSQL and visualization through power BI dashboards. The goal is to deliver insights, patterns, identifying trends and potential risks in financial operations.

# Tools & Technologies



Flat Files(CSV/Excel):  
Source data uploaded  
locally



Informatica Cloud:  
Integration & Ingestion  
of data



MYSQL: Data  
transformation and  
analytics



Power BI: Data  
visualization and  
reporting



Excel: Pre-cleaning and  
formatting

# Data Pipeline Methodology



Data Upload: User place flat files(CSV/Excel) in a predefined local directory.



Trigger: A .txt file in which all the year data's csv file names will be written in that file



Connection: Use Informatica Cloud to connect flat files (source) with MySQL (target).

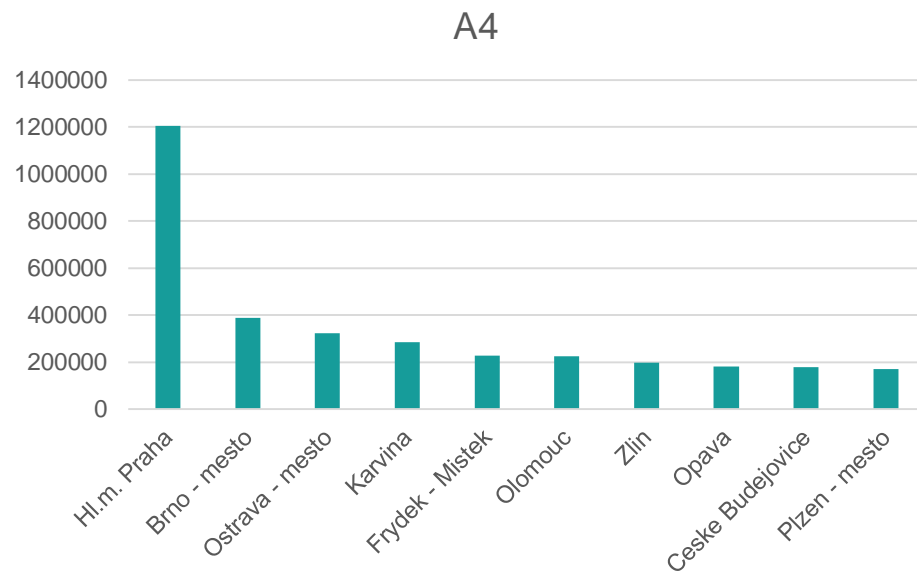


Mapping Configurations: Mapping read the .txt file, load CSVs into corresponding MYSQL table



Visualization: Connect power BI to MYSQL, enabling live dashboard updates.

# Demographic profile of Bank's Client



- The Czech Republic has **77 districts** and the banks has successfully expanded their operations across all districts with **5346 clients** and **4500 account holders**, with a strong presence in **11 cities**.
- Among all district **Hl.m. Praha** stands out with **666 clients**, contributing a significant **12.3%** of the total client base (A clear indication of its role as the bank's key financial hub). It is followed Karvina and Ostrava – mesto with **177** and **163** clients, respectively. One major reason behind H.I.m. Praha's dominance is its higher average salary levels compared to other district, which increases banking and financial engagement. This economic advantage makes Praha an attractive market for premium banking services and investment products.
- The **gender distribution** of clients is almost **uniform** as male and female are **51.44%** and **48.56%** of total client respectively, reflecting a balance outreach strategy
- The **middle age** and the **senior citizen** are **27.09%** and **25.01%** of the total clients and then millennial with **18.2%**. It shows the senior and middle age as backbone of banking operations while millennial indicates rising engagement from younger demographics.
- Client registration has shown upward trend over past two years but in 2022 it drops **34.17%**, highlighting a potential slowdown in reach or client acquisition – **A strategic area for future focus**.

# Banks performance over the years



The bank has demonstrated strong operational growth, expanding its footprint across all **77 districts** of the Czech Republic, currently serving over **5,346 clients** and maintaining **4,500 active account holders**. Notably, the **average number of transactions per account** has increased by **16% in recent years**, reflecting greater client engagement and digital adoption.



As of now, the **total balance deposited** across all accounts stands at **207 million CZK**. The **distribution of balances across account types** remains uniform, indicating a balanced product offering and successful client targeting across segments.



However, a **significant drop in average account balance was observed in 2018**, followed by a period of **stagnant growth at 4–5% annually**. This sudden shift could reflect growing caution among clients—perhaps due to a dip in trust, economic uncertainty, or risk aversion toward banking deposits.



Supporting this hypothesis, data reveals that the **percentage of total funds withdrawn** has consistently remained between **60% and 70%**, suggesting clients prefer liquidity or alternative investment avenues over parking larger sums in bank accounts.

# Most common type of accounts

- . There are 3 types of accounts
  - . NRI Account
  - . Salary Account
  - . Saving Account

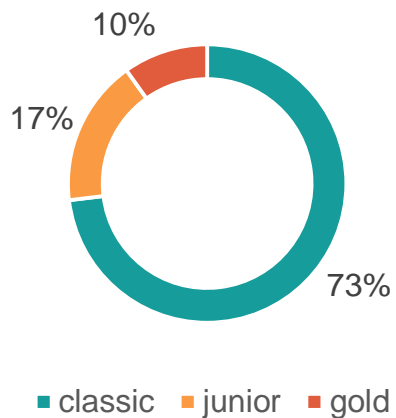
Transaction pattern remains uniform across all the account types, indicating that clients are actively engaged with the bank's full range of service. This highlights operational stability and reflects the bank's success in encouraging clients to use their accounts for wide range of financial activities.





# Most frequently used cards by bank's client

Number of transactions



- The bank offers three types of cards: **Classic**, **Junior**, and **Gold**. Among these, **Classic cards dominate the transaction landscape**, contributing to **73.09% of total transactions**, establishing them as the **core driver of banking operations**. This trend is also reflected in the **consistent growth in the number of Classic cardholders** over recent years.
- However, there are notable operational challenges. The **average time taken to allot a card is 762 days**, which is exceptionally high and poses a significant barrier to customer satisfaction. Additionally, the **cardholder penetration rate remains low at just 17%**, indicating that a large portion of account holders are not utilizing card services.
- To enhance customer experience and operational efficiency, the bank should:
- **Significantly reduce the card allotment period.**
- **Implement targeted strategies to boost card penetration rates**, such as awareness campaigns, onboarding incentives, or bundling cards with account openings.

# Ways to improve profitability



- Over the past four years, the bank has issued loans totaling **103 million CZK**, with a current outstanding loan balance of **84.28 million CZK**. The **average loan duration** is relatively short at **36 days**, suggesting high-frequency, short-term lending. However, **17.03% of borrowers fall below the 25th percentile** in terms of transaction activity, indicating weak engagement and possible risk of default.
- The bank's loan recovery process appears to be underperforming, as reflected in **11.2 million CZK declared as bad debt**. This points to inefficiencies in credit risk assessment and collection strategies, which must be addressed to protect profitability and minimize future write-offs.
- While the bank has successfully expanded operations to **all districts in the Czech Republic**, the **number of accounts opened in several districts remains below the national district average**. This highlights a gap in regional outreach and client acquisition.
- To address this, the bank should:
- Launch **financial literacy and banking awareness programs** in underperforming regions
- Provide **targeted onboarding offers** or incentives for new account holders
- Improve credit evaluation and monitoring systems to **reduce bad debt and improve loan recovery**



# What is the bank's loan portfolio ?

- Over the past four years, the bank has issued a total of **103 million CZK in loans**, with a current outstanding loan balance of **84.28 million CZK**. The **average loan duration is 36 days**, reflecting a strategy focused on **short-term lending**.
- However, the loan portfolio carries a **moderate level of credit risk**, with **11.2 million CZK** currently recognized as **bad debt**, highlighting a need for stronger credit risk management and recovery processes.
- From a regional perspective, **Hl.m. Praha leads in total loan disbursement with 9.9M CZK**, followed by **Brno-mesto (3.8M CZK)** and **Zlin (2.5M CZK)**. This pattern aligns with economically active urban centers where demand for credit is typically higher.
- Gender-wise, the bank has shown success in capturing both segments of the population, with **43M CZK in loans issued to male clients** and **41M CZK to female clients**, demonstrating **balanced outreach and financial inclusion**.
- A point of concern is the **rise in bad debt associated with savings-type accounts**, suggesting a need for more cautious underwriting or monitoring in that account category.



# Can the bank introduce new financial products or services to attract more customers and increase profitability?

Banks can introduce new financial products or services to attract more customers and increase profitability like :

1. **Instant Digital Card issuance:** Replace long wait times with virtual or instant physical card service via mobile.
2. **Longer tenure Loan Product:** As the shorter duration loan dominates, introduce personal loan, home loan with 6–24 month payments.
3. **Financial literacy campaign + Referral Bonuses:** Encourage people to open account, Run campaign on banking awareness and give small rewards for referring new customer.
4. **Targeted Offers for Gold & Junior Cardholders:** to encourage **higher transaction volume** and better usage of non-Classic card types, increasing overall card profitability.
5. **Dedicated Loan Recovery & Risk Monitoring Team:** Introduce an effective department to recover the loan and keeps track of bad loans.

# Executive Summary

- This project successfully delivered actionable insights to optimize customer engagement, improve loan recovery and drive product innovation. Future work should focus on predictive modelling and customer churn and credit risk.

