create database Bank;

use bank;

Problem Statement:

1. What is the demographic profile of the bank clients and how does it vary across districts?

Code:

## Data Cleaning

select \* from client;

create table client\_new as

select client\_id, birth\_number, mid(birth\_number,3,2) as month, district\_id

from client;

select \* from client\_new;

create table new\_client as

select client\_id, birth\_number, month,

case

when month>50 then 'Female'

else 'Male'

end as 'Gender',

district\_id

from client\_new;

select \* from new\_client;

select \* from district;

create table new\_district as

select a1 as district\_id,a2 as district\_name,a3 as region,a4 as no\_of\_inhabitants,

a5 as no\_of\_MI\_lessthan\_499, a6 as no\_of\_MI\_between\_500to1999,

a7 as no\_of\_MI\_between\_2000to9999,

a8 as no\_of\_MI\_greaterthan\_10000,a9 as no\_of\_cities,a10 as ratio\_of\_UI,

a11 as Average\_salary,a12 as unemployement\_rate\_95,

a13 as unemployement\_rate\_96,

a14 as no\_of\_entrepreneurs,a15 as no\_of\_crimes\_95,

a16 as no\_of\_crimes\_96

from district;

select \* from new\_district;

## Data Analysis

select Gender,count(gender) as 'Gender Count' from new\_client

group by gender

order by count(gender) desc;

## Male clients(2724) are more in number when compared to Female clients(2645)

select district\_name,gender,count(gender) as 'Gender count' from new\_district,new\_client

where new\_district.district\_id=new\_client.district\_id

group by district\_name,gender

order by count(gender) desc;

## Solution:

## The district Hl.m.Praha has maximum number of male clients (339) and district Ceske Budejovice has minimum no of male clients (18)

## The district Hl.m.Praha has maximum number of female clients (324) and district Pribrom has minimum no of female clients (19)

Problem Statement:

2. How the banks have performed over the years? Give their detailed analysis year and month wise.

Code:

#Data Cleaning

create table trans\_new as

select trans\_id,account\_id,date,left(date,2) as Year,mid(date,3,2) as Month,type as Transaction\_type,

operation as Mode\_of\_transaction,amount,balance,k\_symbol,bank,account

from trans;

select \* from trans\_new;

# Data Analysis

select year,month,transaction\_type, mode\_of\_transaction,k\_symbol,sum(amount) as Total\_amount

from trans\_new

group by year,month,transaction\_type,mode\_of\_transaction,k\_symbol

order by year,month,sum(amount) desc;

Solution:

From the year 93 to 98 most of the amount is credited in cash

Problem Statement:

3. What are the most common types of accounts and how do they differ in terms of usage and profitability?

Code:

# Data Cleaning

select \* from trans;

create table new\_trans as

select trans\_id, account\_id, date, type, operation, amount, balance, k\_symbol, bank, account,

case

when account regexp '^[0-9]' then 'Combined account'

else 'Single account'

end as account\_type

from trans;

select \* from new\_trans;

## Data Analysis

select account\_type,count(account\_id) as 'Count of clients',sum(amount) as 'Total amount'

from new\_trans

group by account\_type;

select account\_type,k\_symbol, count(trans\_id) as 'Total transactions',

sum(amount) as 'Total Profitable amount'

from new\_trans

where k\_symbol in ('POJISTNE','SLUZBY','UROK','UVER','SIPO')

group by account\_type,k\_symbol

order by sum(amount) desc;

Solution:

The count of clients who are using single accounts (760931) is more than clients using combined account (295389)

More profits to the bank is obtaining through household of the clients having combined account

Problem Statement:

4.Which type of cards are most frequently used by bank's clients and what is the overall profitability of credit card business?

Code:

## Data Analysis

select \* from card;

select type as card\_type,count(card\_id) as 'Total count' from card

group by card\_type

order by count(card\_id) desc;

select operation, sum(amount) as credit\_card\_profitability from trans

where operation in ('VYBER')

GROUP BY operation;

Solution:

The Classic card is most frequently used by the clients followed by Junior and Gold

The overall profitability from credit card usage is 2339570649

Problem Statement:

5. What are the major expenses of the bank and how can they be reduced to improve profitability?

Solution:

The major expenses include Cost of Goods Sold, Marketing, advertising and promotion, Salaries, benefits and wages, Selling, general and administrative, Rent and insurance, Depreciation and amortization

The expenses of the bank can be reduced by taking some steps like Investing in technology, Simplifying products and services, digitize the operations, improve staff productivity, use less-expensive marketing methods.

Problem Statement:

6. What is the bank's loan portfolio and how how does it vary across different purposes and client segments?

Code:

## Data Cleaning

select \* from loan;

create table new\_loan as

select loan\_id,account\_id,date,left(date,2) as Year,mid(date,3,2) as Month,amount,

duration,payments,status from loan;

select \* from new\_loan;

## Data Analysis

select year,status,count(account\_id) as no\_of\_clients,sum(amount) as 'Total Amount' from new\_loan

group by year,status

order by year, sum(amount) desc;

Solution:

## In the year 93 the cleared loan amount of clients with status A (contract finished and cleared loan), is more

## In the year 94 the cleared loan amount of clients with status A (contract finished and cleared loan), is more

## In the year 95 the cleared loan amount of clients with status C (running contract and clearing loan), is more

## In the year 96 the cleared loan amount of clients with status C (running contract and clearing loan), is more

## In the year 97 the cleared loan amount of clients with status C (running contract and clearing loan), is more

## In the year 98 the cleared loan amount of clients with status C (running contract and clearing loan), is more

Problem Statement:

7. How can the bank improve its customer service and satisfaction levels?

Solution:

The services of the bank can be improved by making it easy for the customers to open an account,

providing all types of credit cards and debit cards, advancement of loans, cheque payments, collecting and paying credit instruments, so that customer satisfaction will be improved because of no waiting time and collect and implement the customer feedback like how to improve the banking customer experience

Problem Statement:

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

Solution:

Banks can improve services like modernization which includes automating many applications, reviews, and decisions and enabling workers to be mobile, empowering customers to initiate actions themselves through self-serve options through digital banking.