User(<u>user_national_id</u>, name, phone, phone_verified, address, gender, username, password, email, email_verified)

Client(<u>user_national_id</u>, approved_by)
Client.user_national_id REFERENCES User
Client.approved_by REFERENCES Banker

Bank_Employee(<u>user_national_id</u>, salary, office)
Bank_Employee.user_national_id REFERENCES User

Admin(<u>user_national_id</u>)
Admin.user_national_id REFERENCES Bank_Employee

Banker(<u>user_national_id</u>)
Banker.user_national_id REFERENCES Bank_Employee

Announcement(<u>announcement_id</u>, content, title, date, posted_by)
Announcement.posted_by REFERENCES Bank_Employee

Announcement_Targetted_Towards(<u>user_national_id</u>, <u>announcement_id</u>)
Announcement.user_national_id REFERENCES Client
Announcement.announcement_id REFERENCES Announcement

Complaint(<u>complaint_id</u>, date, content, status, issued_by)
Complaint.issued_by REFERENCES Client

Credit_Card_Complaint(<u>complaint_id</u>, type, credit_card_number, account_id)
Credit_Card_Complaint.complaint_id REFERENCES Complaint
Credit_Card_Complaint.(credit_card_number, account_id) REFERENCES Credit_Card

Account_Complaint(<u>complaint_id</u>, account_id)
Account_Complaint.complaint_id REFERENCES Complaint
Account_Complaint.account_id REFERENCES Account

Technical_Complaint(<u>complaint_id</u>)
Technical_Complaint.complaint_id REFERENCES Complaint

General_Complaint(<u>complaint_id</u>)
General_Complaint.complaint_id REFERENCES Complaint

Complaint_Handled_By(complaint_id, banker)
Complaint_Handled_By.complaint_id REFERENCES Complaint
Complaint_Handled_By.banker REFERENCES Banker

Account(account_id, status, type, iban, user_national_id, balance)
Account.user_national_id REFERENCES Client
Account.balance is calculated from deposits and transactions made by the account

Credit_Card(card_number, account_id, expiry_date, CVV, limit, wireless_enabled, PIN, status, due_reminder_on, type, approved_by ,points)
Credit_Card.account_id REFERENCES Account,
Credit_Card.approved_by REFERENCES Banker
Credit_Card.points are computed from points_earned in Credit_Card_Transaction

Loan(loan_id, account_id, type, amount, issue_date, status, duration, interest, due_reminder_on, approved_by, installment , paid_amount , due_date)
Loan.account_id REFERENCES Account
Loan.approved_by REFERENCES Banker
Loan.installmet is computed from amount ,interest and duration in Loan
Loan. paid_amount is computed form amount , installment and issue_date in Loan and current date
Loan.due_date is computed form duration and issue_date in Loan and current date

Bill_Type(bill_type_id, name, company)

Bill(bill_id, due_date, amount, client_national_id, bill_type_id)
Bill.client_national_id REFERENCES Client
Bill.bill_type_id REFERENCES Bill_Type

Bill_Reminder(user_national_id, bill_type_id)
Bill_Reminder.user_national_id REFERENCES Client
Bill_Reminder.bill_type_id REFERENCES Bill_Type

Transaction(transaction_id, amount, date)

Account_Transaction(transaction_id, account_id)
Account_Transaction.transaction_id REFERENCES Transaction
Account_Transaction.account_id REFERENCES Account

Credit_Card_Transaction(<u>transaction_id</u>, card_number, account_id, points_earned)
Credit_Card_Transaction.transaction_id REFERENCES Transaction
Credit_Card_Transaction.(card_number, account_id) REFERENCES Credit_Card

To_Account_Credit_Card_Transaction(<u>transaction_id</u>, reciever_account_iban)
To_Account_Credit_Card_Transaction.transaction_id REFERENCES Credit_Card_Transaction
Bill_Credit_Card_Transaction(<u>transaction_id</u>, <u>bill_id</u>, is_partial)
Bill_Credit_Card_Transaction.transaction_id REFERENCES Credit_Card_Transaction
Bill_Credit_Card_Transaction.bill_id REFERENCES Bill

Bank_Transfer(<u>transaction_id</u>)
Bank_Transfer.transaction_id REFERENCES Account_Transaction

Internal(<u>transaction_id</u>, <u>reciever_account_id</u>)
Internal.transaction_id REFERENCES Bank_Transfer
Internal.reciever_account_id REFERENCES Account

Domestic(<u>transaction_id</u>, bank_name, account_number)
Domestic.transaction_id REFERENCES Bank_Transfer

International(<u>transaction_id</u>, iban)
International.transaction_id REFERENCES Bank_Transfer

Loan_Payment(<u>transaction_id</u>, <u>loan_id</u>, <u>account_id</u>)
Loan_Payment.transaction_id REFERENCES Account_Transaction
Loan_Payment.(loan_id, account_id) REFERENCES Loan

Bill_Payment(<u>transaction_id</u>, is_partial, <u>bill_id</u>)
Bill_Payment.transaction_id REFERENCES Account_Transaction
Bill_Payment.bill_id REFERENCES Bill

Withdraw_Deposit(<u>transaction_id</u>, atm_location)
Withdraw_Deposit.transaction_id REFERENCES Account_Transaction

Credit_Balance_Payment(<u>transaction_id</u>, is_partial, <u>card_number</u>, <u>account_id</u>)
Credit_Balance_Payment.transaction_id REFERENCES Account_Transaction
Credit_Balance_Paymen.(card_number, account_id) REFERENCES Credit_Card

Redeem_Cashback(<u>transaction_id</u>, redeemed_points, <u>card_number</u>, <u>account_id</u>)
Redeem_Cashback.transaction_id REFERENCES Account_Transaction

Redeem_Cashback.(card_number, account_id) REFERENCES Credit_Card