**Lab Sheet 04**

**IE2042 – Database Management Systems for Security Semester 1, 2021**

Consider the schema for the Bank.

# Bank (bCode, bankName, registration)

**Branch (bCode, branchNo, branchName, address) Foreign key (bCode) references Bank (bCode)**

**AccountType (accCode, accName, description, intRate, maxCheques, type) Account (accNo, balance, bCode, branchNo, accCode)**

**Foreign key (bCode,branchNo) references Branch(bCode,branchNo) Foreign key (accCode) references AccountType(accCode)**

**Customer (custNo, custName, address, phone, NIC, PIN) Belongs\_to (custNo, accNo)**

**Foreign key (custNo) references Customer (custNo) Foreign key (accNo) references Account (accNo)**

**Transaction (tid, amount , description, executedBy, date) Has (tid, accountNo, type)**

**Foreign key (accNo) references Account (accNo) Foreign key (tid) references Transaction (tid)**

**Lab Sheet 04**

**IE2042 – Database Management Systems for Security Semester 1, 2021**

**Activity 01**

1. Implement the Bank schema in SQL Server.
2. Ensure that the interest\_rate of Savings account is a non-negative number (>= 0).
3. Ensure that the customer’s PIN number is a four digit (0-9) number.
4. Ensure that the customer’s NIC number contains 10 digits.
5. Ensure that the customer’s name is not null.
6. Ensure that the balance in an account is always non-negative number (>= 0).
7. In the Transaction table, the default value for date&time should be the system datetime.
8. In the Transaction table, the value for by attribute must be one of the following: “ATM”, “Teller”, “Bank”, “Standing Order”, “Cheque”, “On-Line” or “Other”.
9. The type descriptive attribute of the “has” relationship between Transaction table and Account table should have one of the following values: “credit” or “debit”.
10. Insert at least two tuples into each table you created.

**Lab Sheet 04**

**IE2042 – Database Management Systems for Security Semester 1, 2021**

**Activity 02**

1. Find the account numbers of accounts with a balance over 1 million.
2. Find the money credited to account number 51678 via cheques.
3. Find the names of Account numbers and balances of Accounts in ‘Panadura’ branch of bank with bank code ‘1.
4. Find the account number, balance and account type (‘Savings’,’Current’) of all accounts belonging to customer with NIC ‘856200009V’ in Sampath Bank.
5. Find the total amount of money in accounts of ‘Seylan Bank’ in Gampaha.
6. Find the total amount of money withdrawn from Commercial Bank between 1st to 10th July 2021 via ATMs.
7. Find the names of customers who has a total balance of accounts in Commercial bank over 10 million.
8. Find the account numbers of accounts which has over 100,000 rupees withdrawn via ATMs in July 2021.
9. Find the names of customers who has current accounts in Bank of Ceylon but not savings accounts.
10. Find the account numbers of savings accounts with no withdrawals performed between 1st July 2021 to 31st December 2021.