

## Sri Lanka Institute of Information Technology

## Database Management Systems for Security - IE2024

Lab Submission 04

IT22151056 De Silva K.R.K.D Group – WD.CS 01.02

## **Activity 01**

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💹 SQLQuery1.sql - DESKTOP-OASRVSC\SQLEXPRESS.master (DESKTOP-OASRVSC\Kavindya Desilva (72))* - Microsoft SQL Server Management Studio
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                                                                                   SQLQuery1.sql - DES...indya Desilva (72))* ⇒ ×
                                                       bank
                                            CREATE TABLE Bank1(
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booklame varchar (200),
registration varchar(20),
CONSTRAINT Bank1_PK PRIMARY KEY(bCode));
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Databases
Security
Server Objects
Replication
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Support Management
Support Management
                                            --Branch--
CREATE TABLE Branch1(
                                                  branchNo int,
branchName varchar(150),
                                                  branchName varchar(200),
b_address varchar(200),
bCode int FOREIGN KEY REFERENCES Bank1 (bCode),
CONSTRAINT Branch1_PK PRIMARY KEY(branchNo));
                                            CREATE TABLE AccountType1(
accCode int NOT NULL PRIMARY KEY,
accName varchar(50),
                                                  a_description varchar(100),
intRate int CHECK (intRate >=0),
maxCheques int,
atype varchar (50));
                                           B<sup>™</sup> Messages
                                         (1 row affected)
                                         Completion time: 2023-08-27T18:24:38.3644435+05:30
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SQLQueryi sqq - DEs.indya Desika (72)) 

AccCode int FOREIGN KEY REFERENCES AccountType1(accCode));
 Connect ▼ ¥ ¥ ■ ▼ 🖒
--Customer--
GCREATE TABLE Customer1(
custNo int NOT NULL PRIMARY KEY,
custName varchar(50) NOT NULL,
                                                   c_address varchar(100),
                                                  C_address varchar(100),
phone int,
NIC varchar(10) CHECK (LEN(NIC)=10),
PIN int NOT NULL CHECK (PIN >=0000 AND PIN<=9999));
                                            --belongs to--
CREATE TABLE Belongs_to(
                                                  custNo int FOREIGN KEY REFERENCES Customer1(custNo), accNo int FOREIGN KEY REFERENCES Account1(accNo));
                                                  --Iransaction-
ATE TABLE Transaction1(
tid int NOT NULL PRIMARY KEY,
amount float,
t_description varchar(200),
                                                 executedBy varchar(200),
executedBy IN ('ATM', 'TELLER', 'Bank', 'Standing Order',
'Cheque', 'On-Line', 'Other')),
Tdate DATE DEFAULT GETDATE());
                                            Rill Messages
                                         (1 row affected)
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    Query executed successfully.

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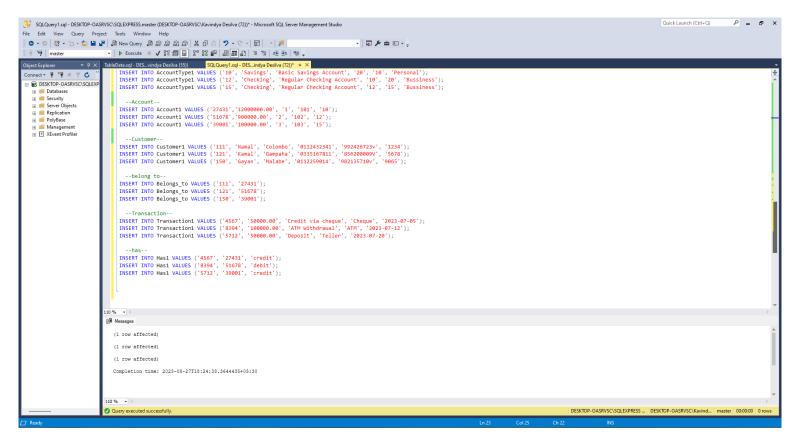
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    --bank--
INSERT INTO Bank1 VALUES ('1', 'Commercial Bank', 'Reg123');
INSERT INTO Bank1 VALUES ('2', 'Seylan Bank', 'Reg234');
INSERT INTO Bank1 VALUES ('3', 'Bank Of Ceylon', 'Reg652');
     --BYBANCHI--
INISERT INTO Branchi VALUES ('101','Main Commercial branch' ,'Panadura', '1');
INISERT INTO Branchi VALUES ('102','Central branch', 'Gampaha','2');
INISERT INTO Branchi VALUES ('103','80C branch', 'Malabe','3');
                                                     **INISERT INTO AccountType1 VALUES ('10', 'Savings', 'Basic Savings Account', '20', '10', 'Personal');
**INISERT INTO AccountType1 VALUES ('12', 'Checking', 'Regular Checking Account', '10', '20', 'Bussiness');
**INISERT INTO AccountType1 VALUES ('15', 'Checking', 'Regular Checking Account', '12', '15', 'Bussiness');
                                                     --ACCOUNT--
INISERT INTO ACCOUNT1 VALUES ('27431', '12000000.00', '1', '101', '10');
INISERT INTO ACCOUNT1 VALUES ('51678', '900000.00', '2', '102', '12');
INISERT INTO ACCOUNT1 VALUES ('39001', '100000.00', '3', '103', '15');
                                                         --Customer
                                                     "INSERT INTO Customer1 VALUES ('111', 'Nama1', 'Colombo', '0112432341', '992426723v', '1234');
INSERT INTO Customer1 VALUES ('121', 'Kama1', 'Gampaha', '0335167811', '856200009V', '5678');
INSERT INTO Customer1 VALUES ('150', 'Gayan', 'Malabe', '0112259014', '082135710v', '9065');
                                                    --belong to--
INSERT INTO Belongs_to VALUES ('111', '27431');
INSERT INTO Belongs_to VALUES ('121', '51678');
INSERT INTO Belongs_to VALUES ('150', '39001');
                                             ⊞ Messages
                                                (1 row affected)
                                                 (1 row affected)
                                                 (1 row affected)
                                                 Completion time: 2023-08-27T18:24:38.3644435+05:30

    Query executed successfully.

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```



## **Activity 02**

```
--01--
SELECT accNo FROM Account1
WHERE balance > 1000000;
--02--
SELECT Sum(T.amount)
From Transaction1 T, Has1 H
WHERE T.tid = H.tid AND H.accountNo = '51678' AND T.executedBy = 'Cheque';
--03--
SELECT A.accNo, A.balance
FROM Account1 A
jOIN Branch1 B ON A.bCode = B.bCode AND A.branchNo= B.branchNo
JOIN Bank1 BK ON B.bCode = BK.bCode
WHERE B.branchName='Panadura' AND BK.bCode ='1';
SELECT A.accNo, A.balance, ACT.accName
FROM Account1 A
JOIN Customer1 C ON A.accNo = C.custNo
JOIN Bank1 B ON A.bCode = B.bCode
JOIN AccountType1 ACT ON A.accCode = ACT.accCode
WHERE C.NIC = '856200009V' AND B.bankName = 'Sampath Bank';
--05--
SELECT SUM(A.balance)
FROM Account1 A
JOIN Bank1 B ON A.bCode = B.bCode
JOIN Branch1 BR ON A.branchNo = BR.branchNo
WHERE B.bankName = 'Seylan Bank' AND BR.b_address LIKE '%Gampaha';
--06--
SELECT SUM(T.amount)
FROM Transaction1 T
JOIN Has1 H ON T.tid = H.tid
JOIN Account1 A ON H.accountNo = A.accNo
JOIN Branch1 B ON A.bCode = B.bCode AND A.branchNo = B.branchNo
JOIN Bank1 BK ON B.bCode = BK.bCode
WHERE BK.bankName = 'Commercial Bank'
   AND T.executedBy = 'ATM'
   AND T.Tdate BETWEEN '2021-07-01' AND '2021-07-10';
--07--
SELECT C.custName
FROM Customer1 C
JOIN Belongs_to BT ON C.custNo = BT.custNo
JOIN Account1 A ON BT.accNo = A.accNo
JOIN Bank1 BK ON A.bCode = BK.bCode
GROUP BY C.custName
HAVING SUM(A.balance) > 10000000.00;
--08--
SELECT DISTINCT H.accountNo
FROM Transaction1 T
```

```
JOIN Has1 H ON T.tid = H.tid
JOIN Account1 A ON H.accountNo = A.accNo
WHERE T.executedBy = 'ATM'
   AND T.Tdate BETWEEN '2021-07-01' AND '2021-07-31'
   AND T.amount > 100000.00;
--09--
SELECT DISTINCT C.custName
FROM Customer1 C
JOIN Belongs_to BT ON C.custNo = BT.custNo
JOIN Account1 A ON BT.accNo = A.accNo
JOIN Branch1 B ON A.bCode = B.bCode AND A.branchNo = B.branchNo
JOIN Bank1 BK ON B.bCode = BK.bCode
JOIN AccountType1 AT ON A.accCode = AT.accCode
WHERE BK.bankName = 'Bank of Ceylon'
   AND AT.accName = 'Current'
   AND NOT EXISTS (
       SELECT 1
        FROM Account1 SA
        JOIN AccountType1 SAT ON SA.accCode = SAT.accCode
       WHERE SAT.accName = 'Savings' AND SA.accNo = A.accNo
   );
--10--
SELECT DISTINCT A.accNo
FROM Account1 A
JOIN AccountType1 AT ON A.accCode = AT.accCode
WHERE AT.accName = 'Savings'
   AND NOT EXISTS (
       SELECT 1
        FROM Transaction1 T
        JOIN Has1 H ON T.tid = H.tid
        WHERE T.Tdate BETWEEN '2021-07-01' AND '2021-12-31'
           AND H.accountNo = A.accNo
           );
```