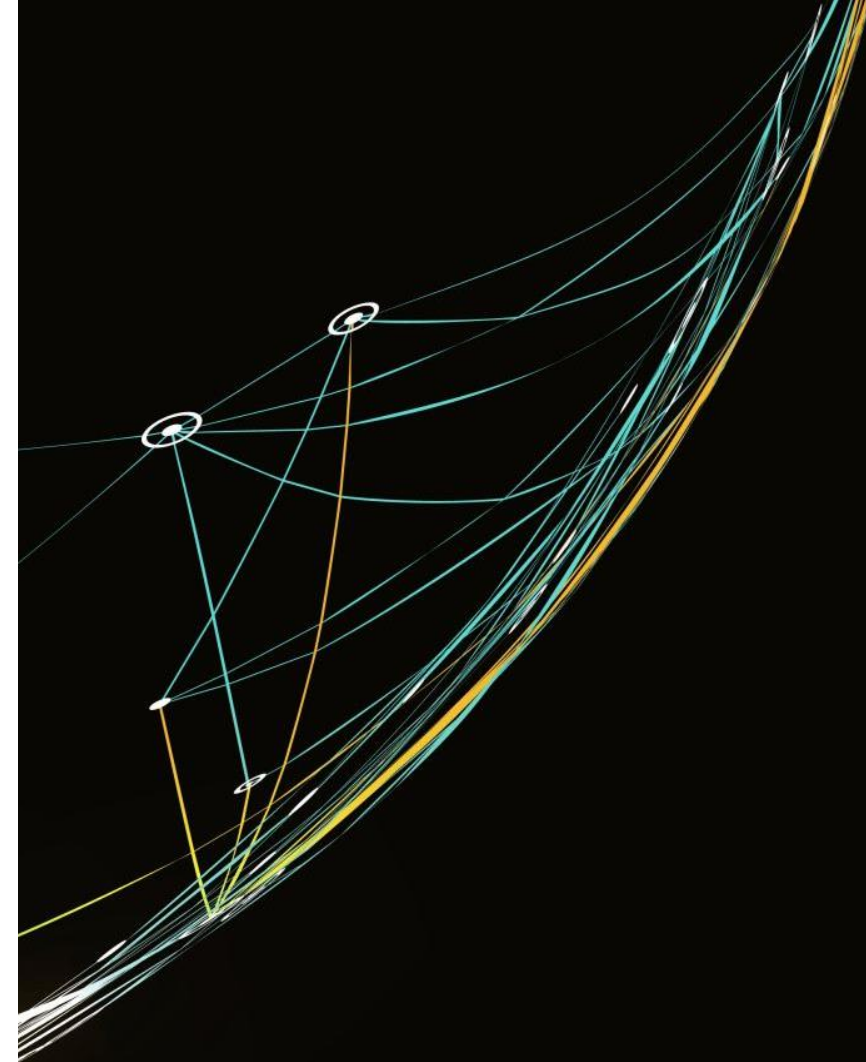# SKYHAWK BANK DATABASE

Database Summary

- We will be working on a database for a bank. It will be used to manage the customers' bank accounts with the bank. The database will include customers' personal information such as name, social security number, date of birth, phone number, address, and email address

- It will also store information on the accounts themselves, account balance history (keeps tracks of money going in or out based on the fluctuating balance on different dates), branch (EX: address of the branches), employees (EX: position and salary), card (EX: Card ID and account number it is linked to), and transactions (EX: transaction type such as withdraw or deposit)

- The users of the database will be used for company use; it will be accessible to bank employees to view customers' information

Skyhawk Bank

Business Rules

1. A customer owns zero or many cards

   Each card is owned by one and only one customer

2. A customer has one or many accounts

   Each account belongs to one and only one customer

3. An account makes zero or many transactions

   Each transaction is made by one and only one account

4. An account has one or many account balance histories

   Each account balance history belongs to one and only one account

5. An employee manages zero or many accounts

   Each account is managed by one and only one employee
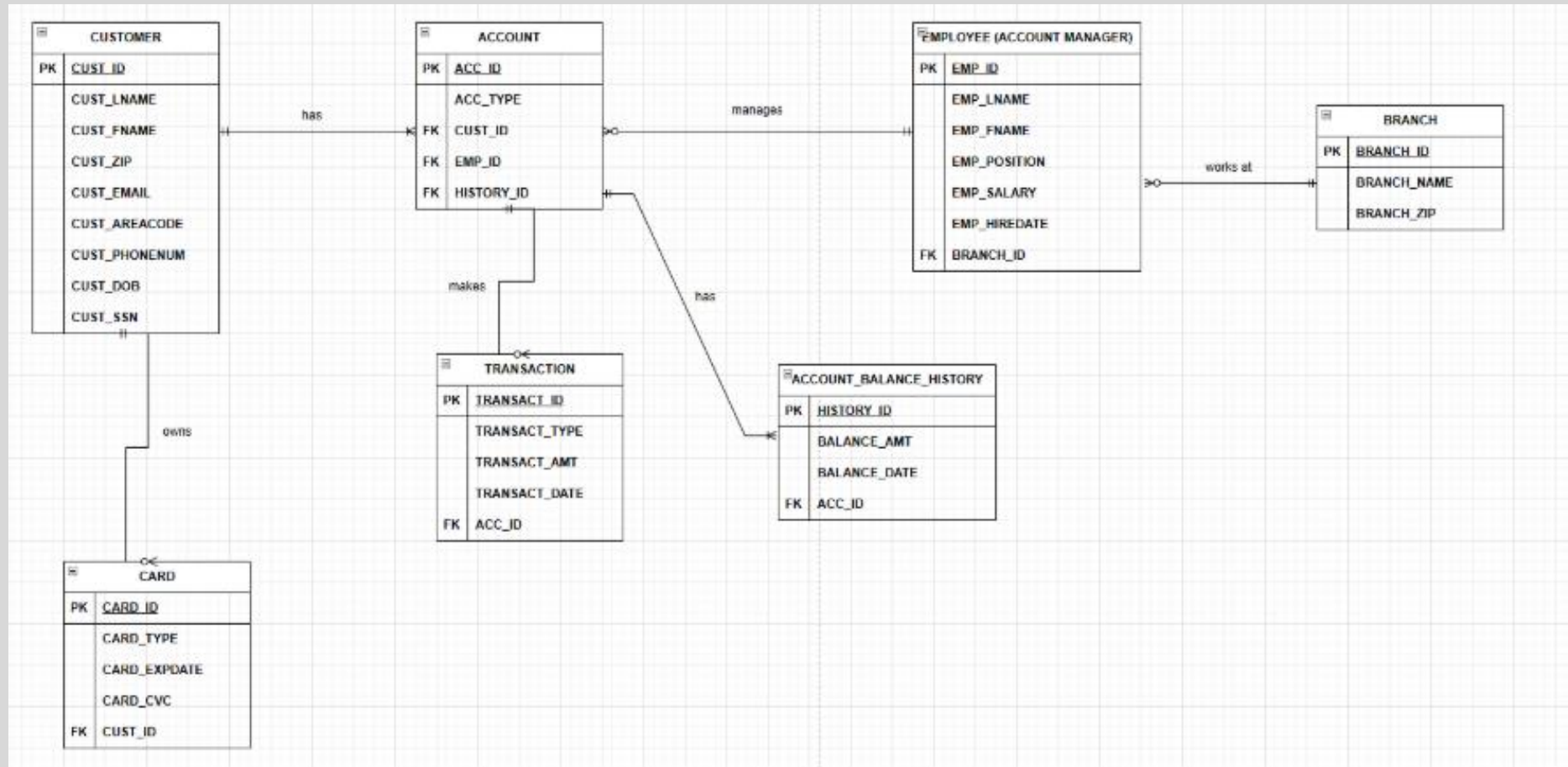
6. An employee works at one and only one branch

   Each branch employs zero or many employees

Table Name	Attribute Name	Contents	Type	Calculated	Required	PK or FK	FK Referenced Table
CUSTOMER	CUST_ID	Customer ID	INT	N	Y	PK	
	CUST_LNAME	Customer Last Name	VARCHAR(30)	N	Y		
	CUST_FNAME	Customer First Name	VARCHAR(30)	N	Y		
	CUST_ZIP	Customer Zip Code	CHAR(5)	N	Y		
	CUST_EMAIL	Customer Email	VARCHAR(50)	N	Y		
	CUST_AREACODE	Customer Area Code	CHAR(3)	N	Y		
	CUST_PHONENUM	Customer Phone Number	CHAR(8)	N	Y		
	CUST_DOB	Customer Date of Birth	DATE	N	Y		
	CUST_SSN	Customer Social Security Number	CHAR(11)	N	Y		
CARD	CARD_ID	Card ID	INT	N	Y	PK	
	CARD_TYPE	Type of Card	VARCHAR(30)	N	Y		
	CARD_EXPDATE	Card Expiration Date	CHAR(4)	N	Y		
	CARD_CVC	Card Verification Code	CHAR(3)	N	Y		
	CUST_ID	Customer ID	INT	N	Y	FK	CUSTOMER
ACCOUNT	ACC_ID	Account ID	INT	N	Y	PK	
	ACC_TYPE	Account Type	VARCHAR(15)	N	Y		
	CUST_ID	Customer ID	INT	N	Y	FK	ACCOUNT
	EMP_ID	Employee ID	INT	N	Y	FK	CUSTOMER
	HISTORY_ID	History ID	INT	N	Y	FK	ACCOUNT_BALANCE_HISTORY

Table Name	Attribute Name	Contents	Type	Calculated	Required	PK or FK	FK Referenced Table
BANK_TRANSACTION	TRANSACT_ID	Transaction ID	INT	N	Y	PK	
	TRANSACT_TYPE	Type of Transaction	VARCHAR(15)	N	Y		
	TRANSACT_AMT	Transaction Amount	DECIMAL(10,2)	N	Y		
	TRANSACT_DATE	Date of Transaction	DATE	N	Y		
	ACC_ID	Account ID	INT	N	Y	FK	ACCOUNT
ACCOUNT_BALANCE_HISTORY	HISTORY_ID	History ID	INT	N	Y	PK	
	BALANCE_AMT	Account Balance Amount	DECMIAL(10,2)	N	Y		
	BALANCE_DATE	Date of Account Balance Amount	DATETIME	N	Y		
	ACC_ID	Account ID	INT	N	Y	FK	ACCOUNT
EMPLOYEE (ACCOUNT MANAGER)	EMP_ID	Employee ID	INT	N	Y	PK	
	EMP_LNAME	Employee Last Name	VARCHAR(30)	N	Y		
	EMP_FNAME	Employee First Name	VARCHAR(30)	N	Y		
	EMP_POSITION	Bank Position held by employee	VARCHAR(50)	N	Y		
	EMP_SALARY	Employee Yearly Salary	DECIMAL(10,2)	N	Y		
	EMP_HIREDATE	Employee Hire Date	DATE	N	Y		
	BRANCH_ID	Branch ID	INT	N	Y	FK	BRANCH
BRANCH	BRANCH_ID	Branch ID	INT	N	Y	PK	
	BRANCH_NAME	Name of Branch	VARCHAR(100)	N	Y		
	BRANCH_ZIP	Branch Zip Code	CHAR(5)	N	Y		

DATA STORED

ERD Diagram

CREATION SQL TABLES

```sql
33    -- Create all tables
34    CREATE TABLE BRANCH (
35    BRANCH_ID INT PRIMARY KEY,
36    BRANCH_NAME VARCHAR(100),
37    BRANCH_ZIP CHAR(5)
38    );
39
40    CREATE TABLE EMPLOYEE (
41    EMP_ID INT PRIMARY KEY,
42    EMP_LNAME VARCHAR(30) NOT NULL,
43    EMP_FNAME VARCHAR(30) NOT NULL,
44    EMP_POSITION VARCHAR(50),
45    EMP_SALARY DECIMAL(10,2),
46    EMP_HIREDATE DATE,
47    BRANCH_ID INT,
48    FOREIGN KEY (BRANCH_ID) REFERENCES BRANCH(BRANCH_ID)
49    );
50
51    CREATE TABLE CUSTOMER (
52    CUST_ID INT PRIMARY KEY,
53    CUST_LNAME VARCHAR(30) NOT NULL,
54    CUST_FNAME VARCHAR(30),
55    CUST_ZIP CHAR(5),
56    CUST_EMAIL VARCHAR(50),
57    CUST_AREACODE CHAR(3),
58    CUST_PHONENUM CHAR(8),
59    CUST_DOB DATE,
60    CUST_SSN CHAR(11)
61    );
62
63    CREATE TABLE ACCOUNT_BALANCE_HISTORY (
64    HISTORY_ID INT PRIMARY KEY,
65    BALANCE_AMT DECIMAL(10,2) NOT NULL,
66    BALANCE_DATE DATETIME NOT NULL
67    );
```

```sql
69   CREATE TABLE ACCOUNT (
70   ACC_ID INT PRIMARY KEY,
71   ACC_TYPE VARCHAR(15) NOT NULL,
72   CUST_ID INT NOT NULL,
73   EMP_ID INT NOT NULL,
74   HISTORY_ID INT,
75   FOREIGN KEY (CUST_ID) REFERENCES CUSTOMER(CUST_ID),
76   FOREIGN KEY (EMP_ID) REFERENCES EMPLOYEE(EMP_ID),
77   FOREIGN KEY (HISTORY_ID) REFERENCES ACCOUNT_BALANCE_HISTORY(HISTORY_ID)
78   );
79
80   ALTER TABLE ACCOUNT_BALANCE_HISTORY
81   ADD ACC_ID INT;
82
83   ALTER TABLE ACCOUNT_BALANCE_HISTORY
84   ADD CONSTRAINT FK_BALANCE_ACCOUNT FOREIGN KEY (ACC_ID) REFERENCES ACCOUNT(ACC_ID);
85
86   CREATE TABLE CARD (
87   CARD_ID INT PRIMARY KEY,
88   CARD_TYPE VARCHAR(30) NOT NULL,
89   CARD_EXPDATE CHAR(4) NOT NULL,
90   CARD_CVC CHAR(3) NOT NULL,
91   CUST_ID INT NOT NULL,
92   FOREIGN KEY (CUST_ID) REFERENCES CUSTOMER(CUST_ID)
93   );
94
95   CREATE TABLE BANK_TRANSACTION (
96   TRANSACT_ID INT PRIMARY KEY,
97   TRANSACT_TYPE VARCHAR(15) NOT NULL,
98   TRANSACT_AMT DECIMAL(10,2) NOT NULL,
99   TRANSACT_DATE DATE NOT NULL,
100  ACC_ID INT NOT NULL,
101  FOREIGN KEY (ACC_ID) REFERENCES ACCOUNT(ACC_ID)
102  );
103
```

CREATION SQL TABLES

```sql
116    INSERT INTO CUSTOMER (CUST_ID, CUST_LNAME, CUST_FNAME, CUST_ZIP, CUST_EMAIL, CUST_AREACODE, CUST_PHONENUM, CUST_DOB, CUST_SSN)
117    VALUES (378316, 'John', 'Doe', '11395', 'john.doe378316@example.com', '509', '4400107', '1985-04-10', '123-45-6789');
118
119    INSERT INTO CUSTOMER (CUST_ID, CUST_LNAME, CUST_FNAME, CUST_ZIP, CUST_EMAIL, CUST_AREACODE, CUST_PHONENUM, CUST_DOB, CUST_SSN)
120    VALUES (146819, 'Jane', 'Smith', '24832', 'jane.smith146819@example.com', '077', '6833835', '1992-08-23', '234-56-7890');
121
122    INSERT INTO CUSTOMER (CUST_ID, CUST_LNAME, CUST_FNAME, CUST_ZIP, CUST_EMAIL, CUST_AREACODE, CUST_PHONENUM, CUST_DOB, CUST_SSN)
123    VALUES (448336, 'Michael', 'Johnson', '13117', 'michael.johnson448336@example.com', '512', '1264813', '1988-02-14', '345-67-8901');
124
125    INSERT INTO CUSTOMER (CUST_ID, CUST_LNAME, CUST_FNAME, CUST_ZIP, CUST_EMAIL, CUST_AREACODE, CUST_PHONENUM, CUST_DOB, CUST_SSN)
126    VALUES (402050, 'Emily', 'Williams', '88459', 'emily.williams402050@example.com', '516', '2216960', '1990-12-05', '456-78-9012');
```

SQL TABLE INSERTS (CUSTOMER)

SQL TABLE INSERTS (EMPLOYEE)

```
349    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (1, 'DEBIT', '0727', '123', 101112);
350    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (2, 'CREDIT', '0826', '456', 101223);
351    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (3, 'DEBIT', '0925', '789', 112233);
352    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (4, 'CREDIT', '0628', '234', 112334);
353    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (5, 'DEBIT', '0527', '567', 123456);
354    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (6, 'CREDIT', '1126', '890', 146819);
355    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (7, 'DEBIT', '0427', '135', 223344);
356    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (8, 'CREDIT', '0326', '246', 223445);
357    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (9, 'DEBIT', '0725', '357', 228416);
358    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (10, 'CREDIT', '1228', '468', 234567);
359
360    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (11, 'DEBIT', '0627', '579', 334455);
361    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (12, 'CREDIT', '0726', '681', 334556);
362    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (13, 'DEBIT', '1027', '792', 345678);
363    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (14, 'CREDIT', '1125', '803', 369543);
364    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (15, 'DEBIT', '0926', '914', 378316);
365    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (16, 'CREDIT', '0828', '025', 402050);
366    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (17, 'DEBIT', '0327', '136', 445566);
367    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (18, 'CREDIT', '0526', '247', 445667);
368    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (19, 'DEBIT', '0628', '358', 448336);
369    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (20, 'CREDIT', '1127', '469', 456789);
370
371    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (21, 'DEBIT', '0127', '570', 474269);
372    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (22, 'CREDIT', '0226', '681', 556677);
373    INSERT INTO CARD (CARD_ID, CARD_TYPE, CARD_EXPDATE, CARD_CVC, CUST_ID) VALUES (23, 'DEBIT', '0328', '792', 556778);
```

SQL TABLE INSERTS (CARD)

```sql
-- Account Table Insertions (with updated EMP_IDs and corresponding CUST_IDs)
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1001, 'Savings', 378316, 1001, 3001);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1002, 'Checking', 146819, 1002, 3002);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1003, 'Savings', 448336, 1003, 3003);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1004, 'Checking', 402050, 1004, 3004);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1005, 'Savings', 682475, 1005, 3005);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1006, 'Checking', 228416, 1006, 3006);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1007, 'Savings', 369543, 1007, 3007);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1008, 'Checking', 601796, 1008, 3008);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1009, 'Savings', 639708, 1009, 3009);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1010, 'Checking', 474269, 1010, 3010);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1011, 'Savings', 988112, 1011, 3011);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1012, 'Checking', 797882, 1012, 3012);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1013, 'Savings', 750262, 1013, 3013);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1014, 'Checking', 988552, 1014, 3014);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1015, 'Savings', 123456, 1015, 3015);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1016, 'Checking', 234567, 1016, 3016);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
```

```sql
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1016, 'Checking', 234567, 1016, 3016);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1017, 'Savings', 345678, 1017, 3017);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1018, 'Checking', 456789, 1018, 3018);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1019, 'Savings', 567890, 1019, 3019);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1020, 'Checking', 678901, 1020, 3020);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1021, 'Savings', 789012, 1021, 3021);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1022, 'Checking', 890123, 1022, 3022);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1023, 'Savings', 901234, 1023, 3023);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1024, 'Checking', 112233, 1024, 3024);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1025, 'Savings', 223344, 1025, 3025);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
VALUES (1026, 'Checking', 334455, 1026, 3026);
INSERT INTO ACCOUNT (ACC_ID, ACC_TYPE, CUST_ID, EMP_ID, HISTORY_ID)
```

SQL TABLE INSERTS (ACCOUNT)

CUSTOMER TABLE RESULTS

Results | Messages

CUST_ID	CUST_LNAME	CUST_FNAME	CUST_ZIP	CUST_EMAIL	CUST_AREACODE	CUST_PHONENUM	CUST_DOB
1	101112	Perry	Amos	66090	amos.perry101112@example.com	023	5125858	1983-02-08
2	101223	King	Isaac	48732	isaac.king101223@ex...	303	9283834	1993-02-06
3	112233	Gonzalez	Charlotte	10428	charlotte.gonzalez112233@ex...	895	9652408	1993-04-29
4	112334	Young	Chloe	30655	chloe.young112334@example.c...	850	4340015	1989-12-18
5	123456	Taylor	David	11395	david.taylor123456@example...	509	4400107	1983-04-10
6	146819	Jane	Smith	24832	jane.smith146819@example.com	077	6833835	1992-08-23
7	223344	Martinez	Benjamin	39690	benjamin.martinez223344@exa...	712	7170878	1982-02-03
8	223445	Baker	Daniel	31527	daniel.baker223445@example...	408	2654789	1994-07-20
9	228416	Sarah	Davis	19351	sarah.davis228416@example.c...	262	8210177	1994-03-30
10	234567	Williams	Emma	24832	emma.williams234567@example...	077	6833835	1990-07-23
11	334455	Parker	Grace	96645	grace.parker334455@example...	763	8736651	1994-04-20
12	334556	Graham	Lily	44271	lily.graham334556@example.c...	714	9356721	1992-11-10
13	345678	Martinez	Olivia	13117	olivia.martinez345678@examp...	512	1264813	1992-02-14
14	369543	David	Miller	52590	david.miller369543@example...	328	1142731	1987-11-02
15	378316	John	Doe	11395	john.doe378316@example.com	509	4400107	1985-04-10
16	402050	Emily	Williams	88459	emily.williams402050@exampl...	516	2216960	1990-12-05
17	445566	Nelson	William	89121	william.nelson445566@exampl...	722	6026728	1987-12-15
18	445667	Green	Zoe	78950	zoe.green445667@example.com	949	8321209	1995-12-25
19	448336	Michael	Johnson	13117	michael.johnson448336@examp...	512	1264813	1988-02-14
20	456789	Rodriguez	Liam	88459	liam.rodriguez456789@exampl...	516	2216960	1995-12-05
21	474269	Patricia	Taylor	10428	patricia.taylor474269@examp...	895	9652408	1993-07-29

EMPLOYEE TABLE RESULTS

	EMP_ID	EMP_LNAME	EMP_FNAME	EMP_POSITION	EMP_SALARY	EMP_HIREDATE	BRANCH_ID
1	1001	Smith	John	Branch Manager	85000.00	2015-03-15	201
2	1002	Johnson	Emily	Teller	42000.00	2018-07-22	201
3	1003	Williams	Michael	Loan Officer	65000.00	2016-10-30	201
4	1004	Brown	Sarah	Branch Manager	87000.00	2014-06-12	202
5	1005	Jones	David	Teller	40000.00	2019-02-17	202
6	1006	Garcia	Olivia	Loan Officer	63000.00	2017-11-08	202
7	1007	Miller	James	Branch Manager	86000.00	2013-05-25	203
8	1008	Davis	Sophia	Teller	41000.00	2020-01-10	203
9	1009	Rodriguez	Daniel	Loan Officer	62000.00	2018-09-14	203
10	1010	Martinez	Ava	Branch Manager	88000.00	2012-04-20	204
11	1011	Hernandez	William	Teller	41500.00	2021-03-19	204
12	1012	Lopez	Isabella	Loan Officer	64000.00	2019-06-30	204
13	1013	Gonzalez	Matthew	Branch Manager	89000.00	2011-12-01	205
14	1014	Wilson	Amelia	Teller	43000.00	2020-10-05	205
15	1015	Anderson	Ethan	Loan Officer	66000.00	2017-08-11	205
16	1016	Thomas	Mia	Branch Manager	90000.00	2010-09-23	206
17	1017	Taylor	Alexander	Teller	43500.00	2022-05-02	206
18	1018	Moore	Charlotte	Loan Officer	67000.00	2016-12-07	206
19	1019	Jackson	Benjamin	Teller	44000.00	2021-11-15	207
20	1020	Martin	Ella	Loan Officer	68000.00	2018-04-03	207

CARD TABLE RESULTS

	CARD_ID	CARD_TYPE	CARD_EXPDATE	CARD_CVC	CUST_ID
1	1	DEBIT	0727	123	101112
2	2	CREDIT	0826	456	101223
3	3	DEBIT	0925	789	112233
4	4	CREDIT	0628	234	112334
5	5	DEBIT	0527	567	123456
6	6	CREDIT	1126	890	146819
7	7	DEBIT	0427	135	223344
8	8	CREDIT	0326	246	223445
9	9	DEBIT	0725	357	228416
10	10	CREDIT	1228	468	234567
11	11	DEBIT	0627	579	334455
12	12	CREDIT	0726	681	334556
13	13	DEBIT	1027	792	345678
14	14	CREDIT	1125	803	369543
15	15	DEBIT	0926	914	378316
16	16	CREDIT	0828	025	402050
17	17	DEBIT	0327	136	445566
18	18	CREDIT	0526	247	445667
19	19	DEBIT	0628	358	448336
20	20	CREDIT	1127	469	456789
21	21	DEBIT	0127	570	474269

BRANCH TABLE RESULTS

	BRANCH_ID ⌄	BRANCH_NAME ⌄	BRANCH_ZIP ⌄
1	201	Easton Main	02334
2	202	Brockton Center	02301
3	203	Stoughton Village	02072
4	204	West Bridgewater	02379
5	205	Bridgewater Commons	02324
6	206	Mansfield Crossing	02048
7	207	Taunton Central	02780
8	208	Raynham Depot	02767
9	209	Norton Center	02766
10	210	Sharon Heights	02067

SQL Queries

```sql
--Groups Customers With same Area code together--
SELECT * FROM CUSTOMER
WHERE CUST_AREACODE IN (
SELECT CUST_AREACODE
FROM CUSTOMER
GROUP BY CUST_AREACODE
HAVING COUNT(*) > 1
)
ORDER BY CUST_AREACODE, CUST_LNAME, CUST_FNAME;
```

```sql
-- All customers with a balance less than 500 low balance
SELECT *
FROM ACCOUNT_BALANCE_HISTORY
WHERE BALANCE_AMT < 500;
```

```sql
--lowest to highest balances

SELECT *
FROM ACCOUNT_BALANCE_HISTORY
ORDER BY BALANCE_AMT ASC;
```

```sql
16    --Employees and their branch
17
18    SELECT
19        E.EMP_ID,
20        E.EMP_FNAME,
21        E.EMP_LNAME,
22        E.EMP_POSITION,
23        B.BRANCH_NAME,
24        B.BRANCH_ZIP
25    FROM
26        EMPLOYEE E
27    JOIN
28        BRANCH B ON E.BRANCH_ID = B.BRANCH_ID;
29


30    --Customer and their cards
31    SELECT
32        C.CUST_ID,
33        C.CUST_LNAME,
34        C.CUST_FNAME,
35        D.CARD_ID,
36        D.CARD_TYPE,
37        D.CARD_EXPDATE
38    FROM
39        CUSTOMER C
40    JOIN
41        CARD D ON C.CUST_ID = D.CUST_ID;
```

SQL Queries (continued)

SQL Queries (continued)

--**How would add a new customer to the bank**
insert into customer (cust_id,cust_lname, cust_fname) values (101 ,'fry',
'chance')
select cust_id, cust_lname, cust_fname
from CUSTOMER
where cust_lname = 'fry' and cust_fname = 'chance'

-- **What if i wanted to get all the customrees and their account balances**
select * from ACCOUNT_BALANCE_HISTORY
select c.cust_id, c.cust_lname, c.cust_fname, h.balance_amt
from CUSTOMER c
join account a on c.cust_id = a.cust_id
join account_balance_history h on a.acc_id = h.acc_id
select * from account
select * from employee

-- **I just opened a new account. How do you add that to the database**
insert into account (acc_id, acc_type,cust_id) values (34, 'Savings', 101)
select c.cust_lname, c.cust_fname, a.acc_id, a.acc_type,a.CUST_ID
from Account a
join customer c on c.cust_id = a.cust_id
where acc_id = 34

--**Show me all the tranactions made from account 1001**
select * from bank_transaction
where acc_id = 1001

-- **How would you show all cards connected to a customer whose name starts with J**
select * from card
select u.cust_fname, c.card_id, c.card_type, c.card_expdate, c.card_cvc, u.cust_id
from card c
join customer u on c.cust_id = u.CUST_ID
where cust_fname like 'J%'

-- **List all the customers who have $1000 or more in their account**
select c.cust_fname, c.cust_lname, h.BALANCE_AMT
from customer c join account a on c.cust_id = a.CUST_ID
join ACCOUNT_BALANCE_HISTORY h on h.acc_id = a.acc_id
where BALANCE_AMT >= 1000
select * from customer
-- **how do you change a customer's phone number?**
update customer set CUST_PHONENUM = (6626873) where cust_id = 101
update customer set cust_areacode = (401) where cust_id = 101

-- **How to delete a customer from the system and clean their account**
delete from account
where cust_id = 101
delete from CUSTOMER
where cust_id = 101

SQL Queries (continued)

Questions

1. Are there any assumptions made about our data or database structure?

2. Based on the code presented, what are some of the main tasks being performed?

3. Does the code solve any problems/issues banks endure?

4. If any, what are some way to improve the code or queries?