

ASSIGNMENT-BANKING SYSTEM

TASK 2

1. Insert at least 10 sample records into each of the following tables.

- Customers

```
INSERT INTO Customers (customer_id, first_name, last_name, DOB, email, phone_number, address) VALUES
(1, 'Harry', 'Potter', '1990-07-31', 'harry.potter@gmail.com', '9876543210', '4 Privet Drive, Little Whinging, Surrey'),
(2, 'Ron', 'Weasley', '1990-03-01', 'ron.weasley@gmail.com', '9845678901', 'The Burrow, Ottery St. Catchpole, Devon'),
(3, 'Hermione', 'Granger', '1989-09-19', 'hermione.granger@gmail.com', '9786543210', 'Hampstead Garden Suburb, London'),
(4, 'Sirius', 'Black', '1959-11-03', 'sirius.black@gmail.com', '9765432109', '12 Grimmauld Place, London'),
(5, 'Remus', 'Lupin', '1960-03-10', 'remus.lupin@gmail.com', '9876504321', '13th Avenue Road, London'),
(6, 'Lily', 'Evans', '1960-01-30', 'lily.evans@gmail.com', '9876543098', 'Spinner's End, Cokeworth'),
(7, 'Luna', 'Lovegood', '1981-02-13', 'luna.lovegood@gmail.com', '9785463210', 'Lovegood House, Ottery St. Catchpole'),
(8, 'Narcissa', 'Malfoy', '1955-06-01', 'narcissa.malfoy@gmail.com', '9898765432', 'Malfoy Manor, Wiltshire'),
(9, 'James', 'Potter', '1960-03-27', 'james.potter@gmail.com', '9876234510', 'Godric's Hollow, West Country, England'),
(10, 'Tom', 'Riddle', '1926-12-31', 'tom.riddle@gmail.com', '9887766543', 'Wool's Orphanage, London');
```

```
mysql> SELECT * FROM Customers;
```

customer_id	first_name	last_name	DOB	email	phone_number	address
1	Harry	Potter	1990-07-31	harry.potter@gmail.com	9876543210	4 Privet Drive, Little Whinging, Surrey
2	Ron	Weasley	1990-03-01	ron.weasley@gmail.com	9845678901	The Burrow, Ottery St. Catchpole, Devon
3	Hermione	Granger	1989-09-19	hermione.granger@gmail.com	9786543210	Hampstead Garden Suburb, London
4	Sirius	Black	1959-11-03	sirius.black@gmail.com	9765432109	12 Grimmauld Place, London
5	Remus	Lupin	1960-03-10	remus.lupin@gmail.com	9876504321	13th Avenue Road, London
6	Lily	Evans	1960-01-30	lily.evans@gmail.com	9876543098	Spinner's End, Cokeworth
7	Luna	Lovegood	1981-02-13	luna.lovegood@gmail.com	9785463210	Lovegood House, Ottery St. Catchpole
8	Narcissa	Malfoy	1955-06-01	narcissa.malfoy@gmail.com	9898765432	Malfoy Manor, Wiltshire
9	James	Potter	1960-03-27	james.potter@gmail.com	9876234510	Godric's Hollow, West Country, England
10	Tom	Riddle	1926-12-31	tom.riddle@gmail.com	9887766543	Wool's Orphanage, London

0 rows in set (0.00 sec)

- **Accounts**

```
INSERT INTO Accounts (account_id, customer_id, account_type, balance)
VALUES
(1, 1, 'savings', 1500.00),
(2, 2, 'current', 3200.50),
(3, 3, 'savings', 7800.75),
(4, 4, 'zero_balance', 0.00),
(5, 5, 'savings', 5400.00),
(6, 6, 'current', 9000.25),
(7, 7, 'savings', 1200.00),
(8, 8, 'current', 4300.00),
(9, 9, 'savings', 10000.00),
(10, 10, 'zero_balance', 0.00);
```

```
mysql> SELECT * FROM Accounts;
```

account_id	customer_id	account_type	balance
1	1	savings	1500.00
2	2	current	3200.50
3	3	savings	7800.75
4	4	current	777700.00
5	5	savings	5400.00
6	6	current	9000.25
7	7	savings	1200.00
8	8	current	4300.00
9	9	savings	10000.00
10	10	zero_balance	0.00

10 rows in set (0.03 sec)

- **Transactions**

```
INSERT INTO Transactions (transaction_id, account_id, transaction_type, amount,
transaction_date) VALUES
(1, 1, 'deposit', 500.00, '2024-03-20 10:15:00'),
(2, 2, 'withdrawal', 200.00, '2024-03-21 14:30:00'),
(3, 3, 'deposit', 1000.00, '2024-03-22 09:45:00'),
(4, 4, 'transfer', 1500.00, '2024-03-23 11:10:00'),
(5, 5, 'withdrawal', 600.00, '2024-03-24 16:20:00'),
(6, 6, 'deposit', 2500.00, '2024-03-25 12:00:00'),
(7, 7, 'withdrawal', 400.00, '2024-03-26 17:40:00'),
(8, 8, 'transfer', 1800.00, '2024-03-27 15:05:00'),
```

(9, 9, 'deposit', 5000.00, '2024-03-28 08:30:00'),
(10, 10, 'withdrawal', 300.00, '2024-03-29 19:55:00');

```
mysql> SELECT * FROM Transactions;
```

transaction_id	account_id	transaction_type	amount	transaction_date
1	1	deposit	500.00	2024-03-20 10:15:00
2	2	withdrawal	200.00	2024-03-21 14:30:00
3	3	deposit	1000.00	2024-03-22 09:45:00
4	4	transfer	1500.00	2024-03-23 11:10:00
5	5	withdrawal	600.00	2024-03-24 16:20:00
6	6	deposit	2500.00	2024-03-25 12:00:00
7	7	withdrawal	400.00	2024-03-26 17:40:00
8	8	transfer	1800.00	2024-03-27 15:05:00
9	9	deposit	5000.00	2024-03-28 08:30:00
10	10	withdrawal	300.00	2024-03-29 19:55:00

Write SQL queries for the following tasks:

1. Write a SQL query to retrieve the name, account type and email of all customers.

```
SELECT C.first_name, C.last_name, A.account_type, C.email  
FROM Customers C  
JOIN Accounts A ON C.customer_id = A.customer_id;
```

```
mysql> SELECT C.first_name, C.last_name, A.account_type, C.email  
-> FROM Customers C  
-> JOIN Accounts A ON C.customer_id = A.customer_id;
```

first_name	last_name	account_type	email
Harry	Potter	savings	harry.potter@gmail.com
Ron	Weasley	current	ron.weasley@gmail.com
Hermione	Granger	savings	hermione.granger@gmail.com
Sirius	Black	current	sirius.black@gmail.com
Remus	Lupin	savings	remus.lupin@gmail.com
Lily	Evans	current	lily.evans@gmail.com
Luna	Lovegood	savings	luna.lovegood@gmail.com
Narcissa	Malfoy	current	narcissa.malfoy@gmail.com
James	Potter	savings	james.potter@gmail.com
Tom	Riddle	zero_balance	tom.riddle@gmail.com

10 rows in set (0.01 sec)

2. Write a SQL query to list all transaction corresponding customer.

```
SELECT C.first_name, C.last_name, T.transaction_type, T.amount,  
T.transaction_date  
FROM Customers C  
JOIN Accounts A ON C.customer_id = A.customer_id  
JOIN Transactions T ON A.account_id = T.account_id;
```

first_name	last_name	transaction_type	amount	transaction_date
Harry	Potter	deposit	500.00	2024-03-20 10:15:00
Ron	Weasley	withdrawal	200.00	2024-03-21 14:30:00
Hermione	Granger	deposit	1000.00	2024-03-22 09:45:00
Sirius	Black	transfer	1500.00	2024-03-23 11:10:00
Remus	Lupin	withdrawal	600.00	2024-03-24 16:20:00
Lily	Evans	deposit	2500.00	2024-03-25 12:00:00
Luna	Lovegood	withdrawal	400.00	2024-03-26 17:40:00
Narcissa	Malfoy	transfer	1800.00	2024-03-27 15:05:00
James	Potter	deposit	5000.00	2024-03-28 08:30:00
Tom	Riddle	withdrawal	300.00	2024-03-29 19:55:00

10 rows in set (0.00 sec)

3. Write a SQL query to increase the balance of a specific account by a certain amount.

```
UPDATE Accounts  
SET balance = balance + 500  
WHERE account_id = 1;
```

```
mysql> UPDATE Accounts SET balance = balance + 500 WHERE account_id = 1;  
Query OK, 1 row affected (0.01 sec)  
Rows matched: 1 Changed: 1 Warnings: 0  
  
mysql> SELECT * FROM ACCOUNTS;  
+-----+-----+-----+-----+  
| account_id | customer_id | account_type | balance |  
+-----+-----+-----+-----+  
| 1 | 1 | savings | 2000.00 |  
| 2 | 2 | current | 3200.50 |  
| 3 | 3 | savings | 7800.75 |  
| 4 | 4 | current | 777700.00 |  
| 5 | 5 | savings | 5400.00 |  
| 6 | 6 | current | 9000.25 |  
| 7 | 7 | savings | 1200.00 |  
| 8 | 8 | current | 4300.00 |  
| 9 | 9 | savings | 10000.00 |  
| 10 | 10 | zero_balance | 0.00 |  
+-----+-----+-----+-----+  
10 rows in set (0.00 sec)
```


4. Write a SQL query to Combine first and last names of customers as a full_name.

SELECT CONCAT(first_name, ' ', last_name) AS full_name
FROM Customers;

```
mysql> SELECT CONCAT(first_name, ' ', last_name) AS full_name  
-> FROM Customers;  
+-----+  
| full_name |  
+-----+  
| Harry Potter |  
| Ron Weasley |  
| Hermione Granger |  
| Sirius Black |  
| Remus Lupin |  
| Lily Evans |  
| Luna Lovegood |  
| Narcissa Malfoy |  
| James Potter |  
| Tom Riddle |  
+-----+  
10 rows in set (0.01 sec)
```

5. Write a SQL query to remove accounts with a balance of zero where the account type is savings.(no records deleted in table)

DELETE FROM Accounts
WHERE balance = 0 AND account_type = 'savings';

```
mysql> DELETE FROM Accounts  
-> WHERE balance = 0 AND account_type = 'savings';  
Query OK, 0 rows affected (0.01 sec)  
  
mysql> SELECT * FROM ACCOUNTS;  
+-----+-----+-----+-----+  
| account_id | customer_id | account_type | balance |  
+-----+-----+-----+-----+  
| 1 | 1 | savings | 2000.00 |  
| 2 | 2 | current | 3200.50 |  
| 3 | 3 | savings | 7800.75 |  
| 4 | 4 | current | 777700.00 |  
| 5 | 5 | savings | 5400.00 |  
| 6 | 6 | current | 9000.25 |  
| 7 | 7 | savings | 1200.00 |  
| 8 | 8 | current | 4300.00 |  
| 9 | 9 | savings | 10000.00 |  
| 10 | 10 | zero_balance | 0.00 |  
+-----+-----+-----+-----+
```

6. Write a SQL query to Find customers living in a specific city.

```
SELECT *
FROM Customers
WHERE address LIKE '%London%';
```

customer_id	first_name	last_name	DOB	email	phone_number	address
3	Hermione	Granger	1989-09-19	hermione.granger@gmail.com	9786543210	Hampstead Garden Suburb, London
4	Sirius	Black	1959-11-03	sirius.black@gmail.com	9765432109	12 Grimmauld Place, London
5	Remus	Lupin	1960-03-10	remus.lupin@gmail.com	9876504321	13th Avenue Road, London
10	Tom	Riddle	1926-12-31	tom.riddle@gmail.com	9887766543	Wool's Orphanage, London

4 rows in set (0.01 sec)

7. Write a SQL query to Get the account balance for a specific account.

```
SELECT balance
FROM Accounts
WHERE account_id = 1;
```

```
mysql> SELECT balance
-> FROM Accounts
-> WHERE account_id = 1;
+-----+
| balance |
+-----+
| 2000.00 |
+-----+
1 row in set (0.01 sec)
```

8. Write a SQL query to List all current accounts with a balance greater than \$1,000

```
SELECT *
FROM Accounts
WHERE account_type = 'current' AND balance > 1000;
```

account_id	customer_id	account_type	balance
2	2	current	3200.50
4	4	current	777700.00
6	6	current	9000.25
8	8	current	4300.00

4 rows in set (0.00 sec)

9. Write a SQL query to Retrieve all transactions for a specific account

```
SELECT *  
FROM Transactions  
WHERE account_id = 1;
```

```
mysql> SELECT *  
      -> FROM Transactions  
      -> WHERE account_id = 1;  
+-----+-----+-----+-----+-----+  
| transaction_id | account_id | transaction_type | amount | transaction_date |  
+-----+-----+-----+-----+-----+  
|             1 |          1 | deposit         | 500.00 | 2024-03-20 10:15:00 |  
+-----+-----+-----+-----+-----+  
1 row in set (0.01 sec)
```

10. Write a SQL query to Calculate the interest accrued on savings accounts based on a given interest rate.

```
SELECT account_id, balance,  
       (balance * 0.05) AS interest_accrued  
FROM Accounts  
WHERE account_type = 'savings';
```

```
mysql> SELECT account_id, balance, (balance * 0.05) AS interest_accrued FROM Accounts WHERE account_type = 'savings';  
+-----+-----+-----+  
| account_id | balance | interest_accrued |  
+-----+-----+-----+  
|          1 | 2000.00 | 100.0000         |  
|          3 | 7800.75 | 390.0375         |  
|          5 | 5400.00 | 270.0000         |  
|          7 | 1200.00 | 60.0000          |  
|          9 | 10000.00 | 500.0000         |  
+-----+-----+-----+  
5 rows in set (0.00 sec)
```

11. Write a SQL query to Identify accounts where the balance is less than a specified overdraft limit.

```
SELECT *  
FROM Accounts  
WHERE balance < 500;
```

```
mysql> SELECT * FROM Accounts WHERE balance < 500;  
+-----+-----+-----+-----+  
| account_id | customer_id | account_type | balance |  
+-----+-----+-----+-----+  
|          10 |          10 | zero_balance | 0.00    |  
+-----+-----+-----+-----+  
1 row in set (0.01 sec)
```

12. Write a SQL query to Find customers not living in a specific city.

SELECT *

FROM Customers

WHERE address NOT LIKE '%London%';

customer_id	first_name	last_name	DOB	email	phone_number	address
1	Harry	Potter	1990-07-31	harry.potter@gmail.com	9876543210	4 Privet Drive, Little Whinging, Surrey
2	Ron	Weasley	1990-03-01	ron.weasley@gmail.com	9845678901	The Burrow, Ottery St. Catchpole, Devon
6	Lily	Evans	1960-01-30	lily.evans@gmail.com	9876543098	Spinner's End, Cokeworth
7	Luna	Lovegood	1981-02-13	luna.lovegood@gmail.com	9785463210	Lovegood House, Ottery St. Catchpole
8	Narcissa	Malfoy	1955-06-01	narcissa.malfoy@gmail.com	9898765432	Malfoy Manor, Wiltshire
9	James	Potter	1960-03-27	james.potter@gmail.com	9876234510	Godric's Hollow, West Country, England

6 rows in set (0.01 sec)