ASSIGNMENT-2

```
-- task 1
create database bank_hex_feb_24;
use  bank_hex_feb_24;
show tables;

describe customer;

insert into customer(first_name,last_name,dob) values
('harry','potter','2002-03-21'),
('ronald','weasley','2001-02-10'),
('hermione','granger','2002-11-15');
select*from customer;
/*output:
        1       harry    potter     2002-03-21
        2       ronald   weasley    2001-02-10
        3       hermione granger          2002-11-15
  */

insert into account(account_type,balance,customer_id) values
('savings',50000,1) ,
('current',120000,2) ,
('zero_balance',100000,3),
('current',150000,1) ,
('savings',30000,3);
select*from account;

/*output:
        1       savings 50000   1
        2       current 120000 2
        3       zero_balance    101000 3
        4       current 150000 1
        5       savings 30000   3
*/

insert into transaction(transaction_type,amount,transaction_date,account_id)
values
('deposit', 10000, '2024-02-01',1),
('withdrawal', 5000, '2024-02-02',1),
('deposit', 20000, '2024-02-02',2),
('withdrawal', 8000, '2024-02-02',3),
('transfer', 20000, '2024-02-01',4),
('transfer', 7000, '2024-02-05',5);
select*from transaction;

/*output:
        1       deposit   10000         2024-02-01      1
        2       withdrawal      5000    2024-02-02      1
        3       deposit   20000         2024-02-02      2
        4       withdrawal      8000    2024-02-02      3
        5       transfer20000   2024-02-01      4
        6       transfer7000    2024-02-05      5
  */
-- task:2
-- 1:Write a SQL query to retrieve the name, account type and email of all customers.

select distinct c.id, c.first_name,c.last_name,dob,a.account_type
from customer c,account a
where c.id=a.customer_id;

/*output:
        id      first_name      last_name       dob             account_type
        1       harry       potter          2002-03-21    savings

        2       ronald      weasley         2001-02-10    current

        3       hermione         granger    2002-11-15    zero_balance

        1       harry       potter          2002-03-21    current

        3       hermione         granger    2002-11-15    savings

  */


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


select c.id,c.first_name,c.last_name,t.*

from customer c ,account a,transaction t

where c.id=a.customer_id and a.id=t.account_id;


/*output:

        id      first_name      last_name      id      transaction_type       amount
        transaction_date        account_id

        1       harry       potter          1      deposit       10000    2024-02-01          1

        1       harry       potter          2      withdrawal         5000        2024-02-02
1

        1       harry       potter          5      transfer     20000      2024-02-01          4

        2       ronald      weasley         3      deposit       20000    2024-02-02          2

        3       hermione         granger    4      withdrawal         8000        2024-02-02
3

        3       hermione         granger    6      transfer     7000       2024-02-05          5

  */


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


update account

set balance=balance+1000

where account_type='zero_balance' and id=3 ;
```

```
select*from account;

/*output:
            id          account_type     balance customer_id
            1           savings         50000        1
            2           current         120000       2
            3           zero_balance      102000 3
            4           current         150000       1
            5           savings          30000       3
   */
```

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

```
select id,concat(first_name,last_name) as full_name
from customer;

/*output:
   id       full_name
            1           harrypotter
            2           ronaldweasley
            3           hermionegranger

*/
```

-- 5: Write a SQL query to remove accounts with a balance of zero where the account type is savings.

```
delete from account
where balance=0 and account_type='savings';
```

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

```
-- if suppose city column present in customer table
select concat(first_name,last_name)
from customer
where city='salem';

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

select id,account_type,balance
from account
where account_type='savings' and customer_id=1;

/*output:
        id      account_type    balance
        1       savings     50000
*/

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

 select account.*
 from account
 where account_type='current' and balance>1000;

 /*output:
        2       current 120000 2
        4       current 150000 1
   */

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

 select t.*
 from account a,transaction t
 where a.id=t.account_id and account_type='savings' and a.customer_id=1;

 /*output:
        id      transaction_type        amount transaction_date         account_id
        1       deposit         10000   2024-02-01          1
        2       withdrawal          5000        2024-02-02          1
  */

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

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

select account.*
from account
where balance<120000;

/*output:
1       savings     50000       1
3       zero_balance    102000 3
5       savings     30000       3
*/

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

-- task 3:

-- 1:Write a SQL query to Find the average account balance for all customers.

select avg(balance) as average_balance,c.*
from account a JOIN Customer c ON  c.id=a.customer_id
```

```
Group by c.id;



/*output:
average_balance         id        first_name       last_name        dob
           100000 1         harry     potter   2002-03-21
           120000 2         ronald    weasley2001-02-10
           66000   3        hermione          granger 2002-11-150
*/

-- 2:Write a SQL query to Retrieve the top 10 highest account balances.

select *
from account
order by balance DESC
limit 10;

/*output:
           1          savings        50000         1
           5          savings        30000         3
           4          current        150000        1
           2          current        120000        2
           3          zero_balance     102000 3
   */
-- 3:Write a SQL query to Calculate Total Deposits for All Customers in specific date

Select sum(amount) as total_deposits
from transaction
where transaction_type = 'deposit'
and transaction_date = '2024-02-01';
```

```
/*output:

        total_deposits

        10000

  */

-- 4. Write a SQL query to Find the Oldest and Newest Customers.


select *

from customer

order by dob ASC

limit 1;


/*output:

        2       ronald   weasley2001-02-10

  */


-- 5. Write a SQL query to Retrieve transaction details along with the account type.


select t.*, a.account_type

from transaction t

JOIN account a ON t.account_id = a.id;


/*output:

        id      transaction_type        amounttransaction_date          account_id
        account_type

        1       deposit         10000   2024-02-01              1       savings

        2       withdrawal              5000    2024-02-02              1       savings

        3       deposit         20000   2024-02-02              2       current

        4       withdrawal              8000    2024-02-02              3       zero_balance

        5       transfer        20000   2024-02-01              4       current

        6       transfer        7000    2024-02-05              5       savings

  */
```

```
-- 6. Write a SQL query to Get a list of customers along with their account details.

select c.*, a.*
from customer c
JOIN account a ON c.id = a.customer_id;

/*output:
        id      first_name      last_name       dob         id  account_type    balance
        customer_id
        1       harry     potter          2002-03-21  1       savings       50000     1
        2       ronald    weasley         2001-02-10  2       current       120000    2
        3       hermione        granger   2002-11-15  3       zero_balance     1020003
        1       harry     potter          2002-03-21  4       current       150000    1
        3       hermione        granger   2002-11-15  5       savings       30000     3
  */

-- 7. Write a SQL query to Retrieve transaction details along with customer information for a specific
account.

select t.*, c.*
from transaction t
JOIN account a ON t.account_id = a.id
JOIN customer c ON a.customer_id = c.id
where a.id = 1;

/*output:
        id      transaction_type        amount transaction_date        account_id      id
        first_name      last_name       dob
        1       deposit         10000   2024-02-01          1       1   harry   potter  2002-03-21
        2       withdrawal          5000        2024-02-02          1       1   harry   potter
        2002-03-21
  */

-- 8. Write a SQL query to Identify customers who have more than one account.

select c.*, count(a.id) as num_accounts
from customer c
JOIN account a ON c.id = a.customer_id
group by c.id
having num_accounts > 1;

/*output:
        id      first_name      last_name       dob         num_accounts
        1       harry       potter          2002-03-21    2
        3       hermione        granger   2002-11-15    2
  */

-- 9. Write a SQL query to Calculate the difference in transaction amounts between deposits and withdrawals.



-- 10. Write a SQL query to Calculate the average daily balance for each account over a specified period.

-- 11. Calculate the total balance for each account type.

select account_type, sum(balance) as total_balance
from account
group by account_type;

/*output:
        account_type    total_balance
        current       270000
        savings      80000

        zero_balance   102000

  */


-- 12. Identify accounts with the highest number of transactions order by descending order.


select account_id, count(*) as num_transactions

from transaction

group by account_id

order by num_transactions DESC;


/*output:

        account_id      num_transactions

        1               2

        2               1

        3               1

        4               1

        5               1

  */


-- 13..List customers with high aggregate account balances, along with their account types


select *, sum(a.balance)

from customer c join account a on c.id = a.customer_id

group by c.first_name

having sum(a.balance)>100000;


/*output:

        first_name      last_name       total_balance    account_types

        harry       potter          200000            savings,current

        ronald      weasley       120000      current
        hermione        granger    132000              zero_balance,savings
  */

  -- 14. Identify and list duplicate transactions based on transaction amount, date, and account

select transaction_date, account_id, amount, count(*) as num_duplicates
from transaction
group by transaction_date, account_id, amount
having num_duplicates > 1;

/*output:
no data,empty
*/
-- task 4:

-- 1 Retrieve the customer(s) with the highest account balance
select *
from customer
where id = (select customer_id
from account
order by balance DESC
limit 1);

/*output:
        1        harry    potter   2002-03-21
  */

-- 2 Calculate the average account balance for customers who have more than one account.

select avg(a.balance) as avg,count(*)
from customer c join account a on c.id = a.customer_id
```

```
group by c.id
having count(*) > 1;


/*output:
        avg     count(*)
        100000 2
        66000  2
  */

-- 3 Retrieve accounts with transactions whose amounts exceed the average transaction amount.

select *
from account a join transaction t on a.id = t.account_id
where t.amount > (select avg(amount) from transaction);

/*output:
        2       current 120000 2
        4       current 150000 1
  */

-- 4 Identify customers who have no recorded transactions.

select *
from customer
where id NOT IN (select distinct customer_id from account);

/*output:
id      first_name      last_name       dob
*/
```

```
-- 5 Calculate the total balance of accounts with no recorded transactions.

select sum(balance)
from account
where customer_id IN (select id from customer where id NOT IN
(select  customer_id from transaction));

/*output:
no data,empty
*/

-- 6 Retrieve transactions for accounts with the lowest balance.

select *
from transaction t
where t.account_id IN (select a.id from account a
order by balance ASC )
limit 1;

/*output:
        1       deposit 10000   2024-02-01      1
*/

--  7 Identify customers who have accounts of multiple types.

select *
from customer
where id in (select customer_id
        from account
        group by customer_id
        having count(distinct account_type) > 1);
```

```
/*output:
        1       harry   potter  2002-03-21
        3       hermione        granger 2002-11-15
  */

-- 8 Calculate the percentage of each account type out of the total number of accounts.

select account_type,
    count(*) as num_accounts,
    (count(*) * 100.0 / (select count(*) from account)) as percentage
from account
group by account_type;
 /*output:
        account_type    num_accounts   percentage
        current         2               40.00000
        savings     2           40.00000
        zero_balance    1               20.00000
  */

-- 9 Retrieve all transactions for a customer with a given customer_id.

select *
from transaction
where account_id in (select id from account where customer_id = 2);

/*output:
        3       deposit 20000   2024-02-02      2
*/
```

```
-- 10 Calculate the total balance for each account type, including a subquery within the SELECT clause.


select account_type,sum(balance)

from account

group by account_type;


/*output:

        account_type    total_balance

        current         270000

        savings         80000

        zero_balance    102000

  */
```