

## **Software use - MySql WorkBench**

### **Table creation with attributes**

```
CREATE TABLE customer
(
    custid VARCHAR(6),
    fname VARCHAR(30),
    mname VARCHAR(30),
    ltname VARCHAR(30),
    city VARCHAR(15),
    mobileno VARCHAR(10),
    occupation VARCHAR(10),
    dob DATE,
    CONSTRAINT customer_custid_pk PRIMARY KEY(custid)
);
```

```
CREATE TABLE branch
(
    bid VARCHAR(6),
    bname VARCHAR(30),
    bcity VARCHAR(30),
    CONSTRAINT branch_bid_pk PRIMARY KEY(bid)
);
```

```
CREATE TABLE account
(
    acnumber VARCHAR(6),
    custid VARCHAR(6),
```

```

        bid VARCHAR(6),

        opening_balance INT(7),

        aod DATE,

        atype VARCHAR(10),

        astatus VARCHAR(10),

        CONSTRAINT account_acnumber_pk PRIMARY KEY(acnumber),

        CONSTRAINT account_custid_fk FOREIGN KEY(custid) REFERENCES
customer(custid),

        CONSTRAINT account_bid_fk FOREIGN KEY(bid) REFERENCES
branch(bid)

    );

```

```

CREATE TABLE trandetails

(

    tnumber VARCHAR(6),

    acnumber VARCHAR(6),

    dot DATE,

    medium_of_transaction VARCHAR(20),

    transaction_type VARCHAR(20),

    transaction_amount INT(7),

    CONSTRAINT trandetails_tnumber_pk PRIMARY KEY(tnumber),

    CONSTRAINT trandetails_acnumber_fk FOREIGN KEY(acnumber)
REFERENCES account(acnumber)

);

```

```

CREATE TABLE loan

(

```

```

    custid VARCHAR(6),

    bid VARCHAR(6),

    loan_amount INT(7),

    CONSTRAINT loan_customer_custid_bid_pk PRIMARY
KEY(custid,bid),

    CONSTRAINT loan_custid_fk FOREIGN KEY(custid) REFERENCES
customer(custid),

    CONSTRAINT loan_bid_fk FOREIGN KEY(bid) REFERENCES
branch(bid)

);

```

### **Records for the bank customers**

```

INSERT INTO customer
VALUES('C00001','Ramesh','Chandra','Sharma','Delhi','9543198345','Service','1976-12-06');

```

```

INSERT INTO customer
VALUES('C00002','Avinash','Sunder','Minha','Delhi','9876532109','Service','1974-10-16');

```

```

INSERT INTO customer
VALUES('C00003','Rahul',null,'Rastogi','Delhi','9765178901','Student','1981-09-26');

```

```

INSERT INTO customer
VALUES('C00004','Parul',null,'Gandhi','Delhi','9876532109','Housewife','1976-11-03');

```

```

INSERT INTO customer
VALUES('C00005','Naveen','Chandra','Aedekar','Mumbai','8976523190','Service','1976-09-19');

```

```

INSERT INTO customer
VALUES('C00006','Chitresh',null,'Barwe','Mumbai','7651298321','Student','1992-11-06');

```

```

INSERT INTO customer
VALUES('C00007','Amit','Kumar','Borkar','Mumbai','9875189761','Student','1981-09-06');

```

```

INSERT INTO customer

```

```
VALUES('C00008','Nisha',null,'Damle','Mumbai','7954198761','Service','1975-12-03');
```

```
INSERT INTO customer  
VALUES('C00009','Abhishek',null,'Dutta','Kolkata','9856198761','Service','1973-05-22');
```

```
INSERT INTO customer  
VALUES('C00010','Shankar',null,'Nair','Chennai','8765489076','Service','1976-07-12');
```

### **Records for the bank branches**

```
INSERT INTO branch VALUES('B00001','Asaf ali road','Delhi');
```

```
INSERT INTO branch VALUES('B00002','New delhi main  
branch','Delhi');
```

```
INSERT INTO branch VALUES('B00003','Delhi cantt','Delhi');
```

```
INSERT INTO branch VALUES('B00004','Jasola','Delhi');
```

```
INSERT INTO branch VALUES('B00005','Mahim','Mumbai');
```

```
INSERT INTO branch VALUES('B00006','Vile parle','Mumbai');
```

```
INSERT INTO branch VALUES('B00007','Mandvi','Mumbai');
```

```
INSERT INTO branch VALUES('B00008','Jadavpur','Kolkata');
```

```
INSERT INTO branch VALUES('B00009','Kodambakkam','Chennai');
```

### **Records for account master**

```
INSERT INTO account VALUES('A00001','C00001','B00001',1000,'2012-  
12-15','Saving','Active');
```

```
INSERT INTO account VALUES('A00002','C00002','B00001',1000,'2012-  
06-12','Saving','Active');
```

```
INSERT INTO account VALUES('A00003','C00003','B00002',1000,'2012-  
05-17','Saving','Active');
```

```
INSERT INTO account VALUES('A00004','C00002','B00005',1000,'2013-01-27','Saving','Active');
```

```
INSERT INTO account VALUES('A00005','C00006','B00006',1000,'2012-12-17','Saving','Active');
```

```
INSERT INTO account VALUES('A00006','C00007','B00007',1000,'2010-08-12','Saving','Suspended');
```

```
INSERT INTO account VALUES('A00007','C00007','B00001',1000,'2012-10-02','Saving','Active');
```

```
INSERT INTO account VALUES('A00008','C00001','B00003',1000,'2009-11-09','Saving','Terminated');
```

```
INSERT INTO account VALUES('A00009','C00003','B00007',1000,'2008-11-30','Saving','Terminated');
```

```
INSERT INTO account VALUES('A00010','C00004','B00002',1000,'2013-03-01','Saving','Active');
```

#### **Records for transaction details**

```
INSERT INTO trandetails VALUES('T00001','A00001','2013-01-01','Cheque','Deposit',2000);
```

```
INSERT INTO trandetails VALUES('T00002','A00001','2013-02-01','Cash','Withdrawal',1000);
```

```
INSERT INTO trandetails VALUES('T00003','A00002','2013-01-01','Cash','Deposit',2000);
```

```
INSERT INTO trandetails VALUES('T00004','A00002','2013-02-01','Cash','Deposit',3000);
```

```
INSERT INTO trandetails VALUES('T00005','A00007','2013-01-11','Cash','Deposit',7000);
```

```
INSERT INTO trandetails VALUES('T00006','A00007','2013-01-13','Cash','Deposit',9000);
```

```
INSERT INTO trandetails VALUES('T00007','A00001','2013-03-13','Cash','Deposit',4000);
```

```
INSERT INTO trandetails VALUES('T00008','A00001','2013-03-14','Cheque','Deposit',3000);
```

```
INSERT INTO trandetails VALUES('T00009','A00001','2013-03-21','Cash','Withdrawal',9000);
```

```
INSERT INTO trandetails VALUES('T00010','A00001','2013-03-22','Cash','Withdrawal',2000);
```

```
INSERT INTO trandetails VALUES('T00011','A00002','2013-03-25','Cash','Withdrawal',7000);
```

```
INSERT INTO trandetails VALUES('T00012','A00007','2013-03-26','Cash','Withdrawal',2000);
```

### **Records for loan details**

```
INSERT INTO loan VALUES('C00001','B00001',100000);
```

```
INSERT INTO loan VALUES('C00002','B00002',200000);
```

```
INSERT INTO loan VALUES('C00009','B00008',400000);
```

```
INSERT INTO loan VALUES('C00010','B00009',500000);
```

```
INSERT INTO loan VALUES('C00001','B00003',600000);
```

```
INSERT INTO loan VALUES('C00002','B00001',600000);
```

-----

**Display the customer number , firstname, customer's date of birth . Display in a sorted order of date of birth year and within that sort by firstname.**

```
SELECT custid, fname, dob
```

```
FROM customer
```

```
ORDER BY year(DOB), fname;
```

```
+-----+-----+-----+
| custid | fname      | dob          |
+-----+-----+-----+
```

	C00009		Abhishek		1973-05-22	
	C00002		Avinash		1974-10-16	
	C00008		Nisha		1975-12-03	
	C00005		Naveen		1976-09-19	
	C00004		Parul		1976-11-03	
	C00001		Ramesh		1976-12-06	
	C00010		Shankar		1976-07-12	
	C00007		Amit		1981-09-06	
	C00003		Rahul		1981-09-26	
	C00006		Chitresh		1992-11-06	

+-----+-----+-----+

10 rows in set (0.01 sec)

-----

**Display customer's number, first name and middle name. The customers who don't have middle name, for them display the last name. Give the alias name as Cust\_Name.**

```
SELECT concat(fname, " ", ifnull(mname, lname)) AS 'CUST_NAME'
FROM customer;
```

+-----+

	CUST_NAME	
--	-----------	--

+-----+

Ramesh Chandra
Avinash Sunder
Rahul Rastogi
Parul Gandhi
Naveen Chandra
Chitresh Barwe
Amit Kumar
Nisha Damle
Abhishek Dutta
Shankar Nair

+-----+

10 rows in set (0.01 sec)

-----

**Display account number, customer's number, customer's  
firstname,lastname,account opening date.**

```
SELECT a.acnumber, a.custid, c.fname, c.ltname, a.aod
FROM account a, customer c
WHERE a.custid=c.custid;
```

+-----+	+-----+	+-----+	+-----+	+-----+
acnumber	custid	fname	ltname	aod
+-----+	+-----+	+-----+	+-----+	+-----+



A00001	C00001	Ramesh	Sharma	2012-12-15	
A00002	C00002	Avinash	Minha	2012-06-12	
A00003	C00003	Rahul	Rastogi	2012-05-17	
A00004	C00002	Avinash	Minha	2013-01-27	
A00005	C00006	Chitresh	Barwe	2012-12-17	
A00006	C00007	Amit	Borkar	2010-08-12	
A00007	C00007	Amit	Borkar	2012-10-02	
A00008	C00001	Ramesh	Sharma	2009-11-09	
A00009	C00003	Rahul	Rastogi	2008-11-30	
A00010	C00004	Parul	Gandhi	2013-03-01	

+-----+-----+-----+-----+-----+

10 rows in set (0.01 sec)

-----

**Display the number of customers from Delhi. Give the count an alias name of Cust\_Count.**

```
SELECT count(custid) as 'CUST_COUNT'
FROM customer
WHERE city='DELHI';
```

+-----+

CUST_COUNT	
------------	--

+-----+

	4	
--	---	--

+-----+

1 row in set (0.00 sec)

-----

**Display the customer number, customer firstname, account number for the customers whose accounts were created after 15th of any month.**

```
SELECT c.custid, c.fname, a.acnumber
FROM customer c, account a
WHERE c.custid=a.custid AND day(a.aod)>15;
```

```
+-----+-----+-----+
| custid | fname    | acnumber |
+-----+-----+-----+
| C00002 | Avinash  | A00004   |
| C00003 | Rahul    | A00003   |
| C00003 | Rahul    | A00009   |
| C00006 | Chitresh | A00005   |
+-----+-----+-----+

4 rows in set (0.00 sec)
```

-----:

**Display the female customers firstname, city and account number who are not into business, service or studies.**

```
SELECT c.fname, c.city, a.acnumber
FROM customer c, account a
WHERE c.custid=a.custid AND occupation in ('Business', 'service',
'student');
```

```

+-----+-----+-----+
| fname   | city    | acnumber |
+-----+-----+-----+
| Ramesh   | Delhi   | A00001   |
| Ramesh   | Delhi   | A00008   |
| Avinash  | Delhi   | A00002   |
| Avinash  | Delhi   | A00004   |
| Rahul    | Delhi   | A00003   |
| Rahul    | Delhi   | A00009   |
| Chitresh | Mumbai  | A00005   |
| Amit     | Mumbai  | A00006   |
| Amit     | Mumbai  | A00007   |
+-----+-----+-----+

```

9 rows in set (0.00 sec)

---

**Display city name and count of branches in that city. Give the count of branches an alias name of Count\_Branch.**

```

SELECT bcity, count(bid) as 'COUNT_BRANCH'
FROM branch
GROUP BY bcity;

```

```

+-----+-----+
| bcity  | COUNT_BRANCH |
+-----+-----+
| Chennai |          1 |
| Delhi   |          4 |
| Kolkata |          1 |
| Mumbai  |          3 |
+-----+-----+

4 rows in set (0.00 sec)

```

-----

**Display account id, customers firstname, customer's lastname for the customers whose account is Active.**

```

SELECT a.acnumber, c.fname, c.ltname
FROM customer c, account a
WHERE c.custid=a.custid AND a.astatus='active';

```

```

+-----+-----+-----+
| acnumber | fname    | ltname  |
+-----+-----+-----+
| A00001   | Ramesh   | Sharma  |
| A00002   | Avinash  | Minha   |
| A00004   | Avinash  | Minha   |
| A00003   | Rahul    | Rastogi  |
| A00010   | Parul    | Gandhi   |
| A00005   | Chitresh | Barwe    |
| A00007   | Amit     | Borkar   |
+-----+-----+-----+

```

7 rows in set (0.00 sec)

-----

**Display the customer's number, customer's firstname, branch id and loan amount for people who have taken loans.**

```
SELECT c.custid, c.fname, l.bid, l.loan_amount
FROM customer c, loan l
WHERE c.custid=l.custid;
```

custid	fname	bid	loan_amount
C00001	Ramesh	B00001	100000
C00001	Ramesh	B00003	600000
C00002	Avinash	B00001	600000
C00002	Avinash	B00002	200000
C00009	Abhishek	B00008	400000
C00010	Shankar	B00009	500000

6 rows in set (0.00 sec)

-----

**Display customer number, customer name, account number where the account status is terminated.**

```
SELECT c.custid, c.fname, a.acnumber
FROM customer c, account a
```

```
WHERE c.custid=a.custid AND a.astatus='Terminated';
```

```
+-----+-----+-----+
| custid | fname  | acnumber |
+-----+-----+-----+
| C00001 | Ramesh | A00008   |
| C00003 | Rahul  | A00009   |
+-----+-----+-----+
```

```
2 rows in set (0.00 sec)
```

-----

**Display the total number of withdrawals and total number of deposits being done by customer whose registration is C00001. Give the count an alias name of Trans\_Count.**

```
SELECT transaction_type, count(*) as 'Trans_Count'
```

```
FROM trandetails
```

```
WHERE transaction_type in ('Deposit', 'Withdrawal') AND acnumber
in (SELECT acnumber FROM account where custid='c00001')
```

```
GROUP BY transaction_type;
```

```
+-----+-----+
| transaction_type | Trans_Count |
+-----+-----+
| Deposit          |            3 |
| Withdrawal       |            3 |
+-----+-----+
```

```
2 rows in set (0.02 sec)
```

-----

**Display the customer's number, customer's firstname, customer's city and branch city where the city of the customer and city of the branch is different.**

```
SELECT c.custid, c.fname, c.city, b.bcity
FROM customer c, branch b, account a
WHERE c.custid=a.custid AND a.bid=b.bid AND c.city != b.bcity;
```

```
+-----+-----+-----+-----+
| custid | fname   | city   | bcity  |
+-----+-----+-----+-----+
| C00007 | Amit    | Mumbai | Delhi  |
| C00002 | Avinash | Delhi  | Mumbai |
| C00003 | Rahul   | Delhi  | Mumbai |
+-----+-----+-----+-----+

3 rows in set (0.00 sec)
```

-----

**Display the customer number, customer firstname, customer lastname who has taken loan from more than 1 bank.**

```
SELECT c.custid, c.fname, c.ltname
FROM customer c
WHERE c.custid in (SELECT custid FROM loan GROUP BY custid having
count(bid)>1);
```

```

+-----+-----+-----+
| custid | fname   | lname |
+-----+-----+-----+
| C00001 | Ramesh  | Sharma |
| C00002 | Avinash | Minha  |
+-----+-----+-----+

2 rows in set (0.00 sec)

```

-----

**Display the number of client who have asked for loans but they don't have any account in the bank though they are registered customers. Give the count an alias name of Count.**

```

SELECT count(custid) as 'COUNT'

FROM customer

WHERE custid NOT IN (SELECT custid from account) AND custid IN
(SELECT custid FROM loan);

```

```

+-----+
| COUNT |
+-----+
|      2 |
+-----+

1 row in set (0.00 sec)

```



+-----+

| COUNT |

+-----+

| 2 |

+-----+

1 row in set (0.00 sec)

-----

**Display account id, and total amount deposited by each account holder ( Including the opening balance ). Give the total amount deposited an alias name of Deposit\_Amount.**

```
SELECT t.acnumber, a.opening_balance + sum(t.transaction_amount)
as 'Deposit_Amount'
```

```
FROM trandetails t, account a
```

```
WHERE t.acnumber=a.acnumber AND t.transaction_type='deposit'
```

```
GROUP BY t.acnumber;
```

+-----+-----+

| acnumber | Deposit\_Amount |

+-----+-----+

| A00001 | 10000 |

| A00002 | 6000 |

| A00007 | 17000 |

+-----+-----+

3 rows in set (0.00 sec)

-----

**Count the number of customers who have registration but no account in the bank.**

**Give the alias name as Count\_Customer.**

```
SELECT count(custid) as 'Count_Customer'
FROM customer
WHERE custid not in (SELECT custid from account);
```

```
+-----+
| Count_Customer |
+-----+
|                4 |
+-----+
```

1 row in set (0.00 sec)

-----

**Display citywise, branchwise count of accounts. For the branch where we don't have any records display 0.**

```
SELECT b.bcity, b.bname, count(a.acnumber)
FROM branch b LEFT OUTER JOIN account a
ON b.bid=a.bid
GROUP BY b.bid;
```

bcity	bname	count(a.acnumber)
Delhi	Asaf ali road	3
Delhi	New delhi main branch	2
Delhi	Delhi cantt	1
Delhi	Jasola	0
Mumbai	Mahim	1
Mumbai	Vile parle	1
Mumbai	Mandvi	2
Kolkata	Jadavpur	0
Chennai	Kodambakkam	0

9 rows in set (0.00 sec)

**Display the customer's firstname who have more than 1 account.**

SELECT fname

FROM customer

WHERE custid IN (SELECT custid FROM account GROUP BY custid HAVING  
count(custid)>1);

fname
-------

```
+-----+
```

```
| Ramesh |
```

```
| Avinash |
```

```
| Rahul |
```

```
| Amit |
```

```
+-----+
```

```
4 rows in set (0.00 sec)
```

```
-----
```

**Display the customer's firstname who have multiple accounts  
atleast in 2 banks.**

```
SELECT fname
```

```
FROM customer
```

```
WHERE custid in (SELECT custid FROM account GROUP BY custid HAVING  
count(bid)>=2);
```

```
+-----+
```

```
| fname |
```

```
+-----+
```

```
| Ramesh |
```

```
| Avinash |
```

```
| Rahul |
```

```
| Amit |
```

```
+-----+
```

4 rows in set (0.00 sec)

-----

**Display the customer number, customer name, account number and number of transactions being made by a customer. Give the alias name for number of transactions as Count\_Trans**

```
SELECT c.custid, c.fname, t.acnumber, count(a.custid) as  
'Count_Trans'
```

```
FROM customer c, trandetails t, account a
```

```
WHERE c.custid=a.custid AND a.acnumber=t.acnumber
```

```
GROUP BY custid;
```

```
+-----+-----+-----+-----+  
| custid | fname   | acnumber | Count_Trans |  
+-----+-----+-----+-----+  
| C00001 | Ramesh  | A00001   |          6 |  
| C00002 | Avinash | A00002   |          3 |  
| C00007 | Amit    | A00007   |          3 |  
+-----+-----+-----+-----+
```

3 rows in set (0.00 sec)

-----

**Display the account number who has done the highest transaction**

```
SELECT acnumber, transaction_amount, MAX(c)
FROM (SELECT acnumber, transaction_amount, count(acnumber) c FROM
trandetails
GROUP BY acnumber)a;
```

```
+-----+-----+-----+
| acnumber | transaction_amount | MAX(c) |
+-----+-----+-----+
| A00001   |          2000     |      6 |
+-----+-----+-----+
1 row in set (0.00 sec)
```

-----

Show the branch name,branch city where we have the maximum customers.

```
SELECT b.bname, b.bcity, MAX(c)
FROM (SELECT count(custid) c
FROM account
GROUP BY bid)x, branch b, account a;
```

```
+-----+-----+-----+
```

bname	bcity	MAX(c)
Asaf ali road	Delhi	3

1 row in set (0.00 sec)

-----

**Show the balance amount for account number A00001.**

```

SELECT ob+sum(c1-c2) AS 'BALANCE'
FROM (SELECT t.transaction_type, (if(t.transaction_type='DEPOSIT',
sum(t.transaction_amount), 0)) c1,
(if(t.transaction_type='WITHDRAWAL', sum(t.transaction_amount),
0)) c2, a.opening_balance ob
FROM trandetails t, account a
WHERE t.acnumber=a.acnumber AND a.acnumber='A00001'
GROUP BY t.transaction_type)x;

```

BALANCE
-2000

1 row in set (0.00 sec)

-----

**Display all those account number, deposit, withdrawal where withdrawal is more then deposit amount.**

```

SELECT t.acnumber, dep AS 'DEPOSIT', wid AS 'WITHDRAWAL'
FROM trandetails t,
(SELECT acnumber, sum(transaction_amount) dep FROM trandetails
WHERE transaction_type='deposit' group by acnumber)d,
(SELECT acnumber, sum(transaction_amount) wid FROM trandetails
WHERE transaction_type='withdrawal' group by acnumber)w
WHERE t.acnumber=d.acnumber AND d.acnumber=w.acnumber AND
w.wid>d.dep
GROUP BY acnumber;

```

```

+-----+-----+-----+
| acnumber | DEPOSIT | WITHDRAWAL |
+-----+-----+-----+
| A00001   |      9000 |      12000 |
| A00002   |      5000 |      7000  |
+-----+-----+-----+
2 rows in set (0.00 sec)

```

---

**Display the customer number, firstname, lastname for those client where total loan amount taken is maximum and at least taken from 2 banks.**

```

SELECT c.custid, c.fname, c.lname

```



```

FROM customer c
WHERE custid = (SELECT custid
                FROM loan
                GROUP BY custid
                HAVING sum(loan_amount) = (SELECT max(c)
                                           FROM (SELECT sum(loan_amount) c
                                                  FROM loan
                                                  GROUP BY custid)temp
                                           )
                );

```

```

+-----+-----+-----+
| custid | fname   | lname |
+-----+-----+-----+
| C00002 | Avinash | Minha  |
+-----+-----+-----+
1 row in set (0.00 sec)

```