

# Water Billing Application

I have created a database which consists different tables with data to manage water billing system. It stores information about users, amount, bill\_date, due etc. Some queries are performed on tables for the following questions.

## Q1) Create database water\_bill to store all information

```
mysql> create database Water_bill;
Query OK, 1 row affected (0.01 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| frnds    |
| information_schema |
| jatiratnalu |
| joins    |
| mysql    |
| performance_schema |
| rajiv    |
| revision |
| sakila   |
| sys      |
| water_bill |
| world    |
+-----+
12 rows in set (0.00 sec)

mysql>
```

## Q2) Create tables of users, meterraeding and bills. Specify the necessary columns and datatypes for each table

```
mysql> use Water_bill;
Database changed

mysql> create table Users(User_Id int primary key,
    -> User_name varchar(30),Address varchar(30), Phone_No varchar(30),Age int);
Query OK, 0 rows affected (0.03 sec)

mysql> create table MeterReading(Meter_Id int primary key,Emp_Id int,Emp_name varchar(30),User_Id int,Reading_Date date,
    -> foreign key(User_Id) references Users(User_Id));
Query OK, 0 rows affected (0.03 sec)

mysql> create table Bills(Bill_Id int primary key,Amount int,Bill_Date date,Due_Date date,User_Id int,Meter_Id int,
    -> foreign key(User_Id) references Users(User_Id),
    -> foreign key(Meter_Id) references MeterReading(Meter_Id));
Query OK, 0 rows affected (0.04 sec)

mysql> |
```

3 rows in set (0.02 sec)

mysql> desc users;

Field	Type	Null	Key	Default	Extra
User_Id	int	NO	PRI	NULL	
User_name	varchar(30)	YES		NULL	
Address	varchar(30)	YES		NULL	
Phone_No	varchar(30)	YES		NULL	
Age	int	YES		NULL	

5 rows in set (0.01 sec)

mysql> desc meterreading;

Field	Type	Null	Key	Default	Extra
Meter_Id	int	NO	PRI	NULL	
Emp_Id	int	YES		NULL	
Emp_name	varchar(30)	YES		NULL	
User_Id	int	YES	MUL	NULL	
Reading_Date	date	YES		NULL	

5 rows in set (0.00 sec)

mysql> desc bills;

Field	Type	Null	Key	Default	Extra
Bill_Id	int	NO	PRI	NULL	
Amount	int	YES		NULL	
Bill_Date	date	YES		NULL	
Due_Date	date	YES		NULL	
User_Id	int	YES	MUL	NULL	
Meter_Id	int	YES	MUL	NULL	

6 rows in set (0.00 sec)

mysql>

### Q3) Insert data into all tables

```
mysql> insert into users values(10,'Vamsi','1/9 oldtown','8688859430',25),
-> (11,'Lokesh','Sri Nagar','9949307039',22),
-> (12,'Sai Veera','Sri Sai Nagar','8939307033',22),
-> (13,'Naveen','Sai Nagar','8922222033',23),
-> (14,'Dastagiri','Ayapa Society','9456792033',23),
-> (15,'Khaja','Peta','9456456033',21),
-> (16,'Srikar','Board','9453323456',22),
-> (17,'Goutham','Board','8935562935',30),
-> (18,'Sai','Nizampet','8935589123',28);
```

Query OK, 9 rows affected (0.01 sec)

Records: 9 Duplicates: 0 Warnings: 0

```
mysql>
```

```
mysql> insert into meterreading values(102,1232,'Krishna',11,"2023-01-12"),
-> (103,1232,'Krishna',12,"2023-01-12"),
-> (104,1233,'Siva',13,"2023-01-13"),
-> (105,1234,'Brahma',14,"2023-01-15"),
-> (106,1235,'Vishnu',15,"2023-01-18"),
-> (107,1235,'Vishnu',16,"2023-01-18");
```

Query OK, 6 rows affected (0.01 sec)

Records: 6 Duplicates: 0 Warnings: 0

```
mysql>
```

```
mysql> insert into bills values(10256,235,"2023-01-11","2023-01-15",10,101),
-> (10694,321,"2023-01-12","2023-01-20",11,102),
-> (21664,150,"2023-01-12","2023-01-20",12,103),
-> (21659,222,"2023-01-13","2023-01-21",13,104),
-> (21645,282,"2023-01-15","2023-01-20",14,105),
-> (21644,282,"2023-01-18","2023-01-20",15,106),
-> (10364,152,"2023-01-18","2023-01-20",16,107);
```

Query OK, 7 rows affected (0.01 sec)

Records: 7 Duplicates: 0 Warnings: 0

## Q4)Retrieving all the data from tables

```
mysql> use water_bill;
Database changed
mysql> select * from users;
```

User_Id	User_name	Address	Phone_No	Age
10	Vamsi	1/9 oldtown	8688859430	25
11	Lokesh	Sri Nagar	9949307039	22
12	Sai Veera	Sri Sai Nagar	8939307033	22
13	Naveen	Sai Nagar	8922222033	23
14	Dastagiri	Ayapa Society	9456792033	23
15	Khaja	Peta	9456456033	21
16	Srikar	Board	9453323456	22
17	Goutham	Board	8935562935	30
18	Sai	Nizampet	8935589123	28

```
9 rows in set (0.00 sec)

mysql> select * from meterreading;
ERROR 1146 (42S02): Table 'water_bill.meterreading' doesn't exist
mysql> select * from meterreading;
```

Meter_Id	Emp_Id	Emp_name	User_Id	Reading_Date
101	1231	Ram	10	2023-01-11
102	1232	Krishna	11	2023-01-12
103	1232	Krishna	12	2023-01-12
104	1233	Siva	13	2023-01-13
105	1234	Brahma	14	2023-01-15
106	1235	Vishnu	15	2023-01-18
107	1235	Vishnu	16	2023-01-18

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

```
mysql> select * from bills;
```

Bill_Id	Amount	Bill_Date	Due_Date	User_Id	Meter_Id
10256	235	2023-01-11	2023-01-15	10	101
10364	152	2023-01-18	2023-01-20	16	107
10694	321	2023-01-12	2023-01-20	11	102
21644	282	2023-01-18	2023-01-20	15	106
21645	282	2023-01-15	2023-01-20	14	105
21659	222	2023-01-13	2023-01-21	13	104
21664	150	2023-01-12	2023-01-20	12	103

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

```
mysql> |
```

## Q5)Retrieving the details of users with id

```
mysql> select User_Id,Phone_No from users;
```

User_Id	Phone_No
10	8688859430
11	9949307039
12	8939307033
13	8922222033
14	9456792033
15	9456456033
16	9453323456
17	8935562935
18	8935589123

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

```
mysql> |
```

```
mysql> select * from users where User_Id=15 or User_Id=13;
```

User_Id	User_name	Address	Phone_No	Age
13	Naveen	Sai Nagar	8922222033	23
15	Khaja	Peta	9456456033	21

```
2 rows in set (0.01 sec)
```

```
mysql> |
```

## Q6) Adding a new column to meter table using alter

```
mysql> alter table bills add column Is_Paid varchar(10) default 'No';
```

```
Query OK, 0 rows affected (0.02 sec)
```

```
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> select * from bills;
```

Bill_Id	Amount	Bill_Date	Due_Date	User_Id	Meter_Id	Is_Paid
10256	235	2023-01-11	2023-01-15	10	101	No
10364	152	2023-01-18	2023-01-20	16	107	No
10694	321	2023-01-12	2023-01-20	11	102	No
21644	282	2023-01-18	2023-01-20	15	106	No
21645	282	2023-01-15	2023-01-20	14	105	No
21659	222	2023-01-13	2023-01-21	13	104	No
21664	150	2023-01-12	2023-01-20	12	103	No

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

```
mysql> |
```



### Q9) Retrieving data from User/Bills tables based on Inner Join

```
mysql> -- retriving matched from tables users and bills;
mysql> select * from users inner join bills on users.User_Id = bills.User_Id;
```

User_Id	User_name	Address	Phone_No	Age	Bill_Id	Amount	Bill_Date	Due_Date	User_Id	Meter_Id	Is_Paid
10	Vamsi	1/9 oldtown	8688859430	25	10256	235	2023-01-11	2023-01-15	10	101	No
16	Srikar	Board	9453323456	22	10364	152	2023-01-18	2023-01-20	16	107	yes
11	Lokesh	Sri Nagar	9949307039	22	10694	321	2023-01-12	2023-01-20	11	102	No
15	Khaja	Peta	9456456033	21	21644	282	2023-01-18	2023-01-20	15	106	yes
14	Dastagiri	Ayapa Society	9456792033	23	21645	282	2023-01-15	2023-01-20	14	105	No
13	Naveen	Sai Nagar	8922222033	23	21659	222	2023-01-13	2023-01-21	13	104	No
12	Sai Veera	Sri Sai Nagar	8939307033	22	21664	150	2023-01-12	2023-01-20	12	103	No

```
7 rows in set (0.00 sec)

mysql> |
```

### Q10) Retrieving data from User/Meter tables based on Left Join

```
mysql> -- retriving data from users and meterreading using left join;
mysql> select * from users left join meterreading on users.User_Id = meterreading.User_Id;
```

User_Id	User_name	Address	Phone_No	Age	Meter_Id	Emp_Id	Emp_name	User_Id	Reading_Date
10	Vamsi	1/9 oldtown	8688859430	25	101	1231	Ram	10	2023-01-11
11	Lokesh	Sri Nagar	9949307039	22	102	1232	Krishna	11	2023-01-12
12	Sai Veera	Sri Sai Nagar	8939307033	22	103	1232	Krishna	12	2023-01-12
13	Naveen	Sai Nagar	8922222033	23	104	1233	Siva	13	2023-01-13
14	Dastagiri	Ayapa Society	9456792033	23	105	1234	Brahma	14	2023-01-15
15	Khaja	Peta	9456456033	21	106	1235	Vishnu	15	2023-01-18
16	Srikar	Board	9453323456	22	107	1235	Vishnu	16	2023-01-18
17	Goutham	Board	8935562935	30	NULL	NULL	NULL	NULL	NULL
18	Sai	Nizampet	8935589123	28	NULL	NULL	NULL	NULL	NULL

```
9 rows in set (0.00 sec)

mysql> |
```

### Q11) Counting total number of users paying bills

```
mysql> select count(User_Id) from users;
```

count(User_Id)
9

```
1 row in set (0.01 sec)
```

## Q12) Delete a user from a database

```
mysql> delete from users where User_Id=18;  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> select * from users;
```

User_Id	User_name	Address	Phone_No	Age
10	Vamsi	1/9 oldtown	8688859430	25
11	Lokesh	Sri Nagar	9949307039	22
12	Sai Veera	Sri Sai Nagar	8939307033	22
13	Naveen	Sai Nagar	8922222033	23
14	Dastagiri	Ayapa Society	9456792033	23
15	Khaja	Peta	9456456033	21
16	Srikar	Board	9453323456	22
17	Goutham	Board	8935562935	30

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

```
mysql> |
```