SRM INSTITUTE OF SCIENCE AND

TECHNOLOGY

SCHOOL OF COMPUTING

DEPARTMENT OF DATASCIENCE AND

BUSINESS SYSTEMS

18CSC303J DATABASE MANAGEMENT

SYSTEMS

MINI PROJECT REPORT
Title – Telephone Billing System

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Semester: VI

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INTRODUCTION

The purpose of the project is to present the requirement of the Computerization of TelephoneBilling System. The project thus calculates the telephone bills automatically. It does almostevery work which is related to automatic telephone billing connection system via- newconnection , customer record modification, viewing customer records & all works related to
rate of bills, meter readings in addition to bill calculation and bill generation. "TelephoneBilling System " is developed as per seeing the increasing requirement
to speed up the work
and incorporate a new work culture. Thus a new software has been proposed to reduce manualwork, improving work efficiency, saving time and to provide greater flexibility and

user-friendliness as the system previously followed was totally manual one with lots of errors
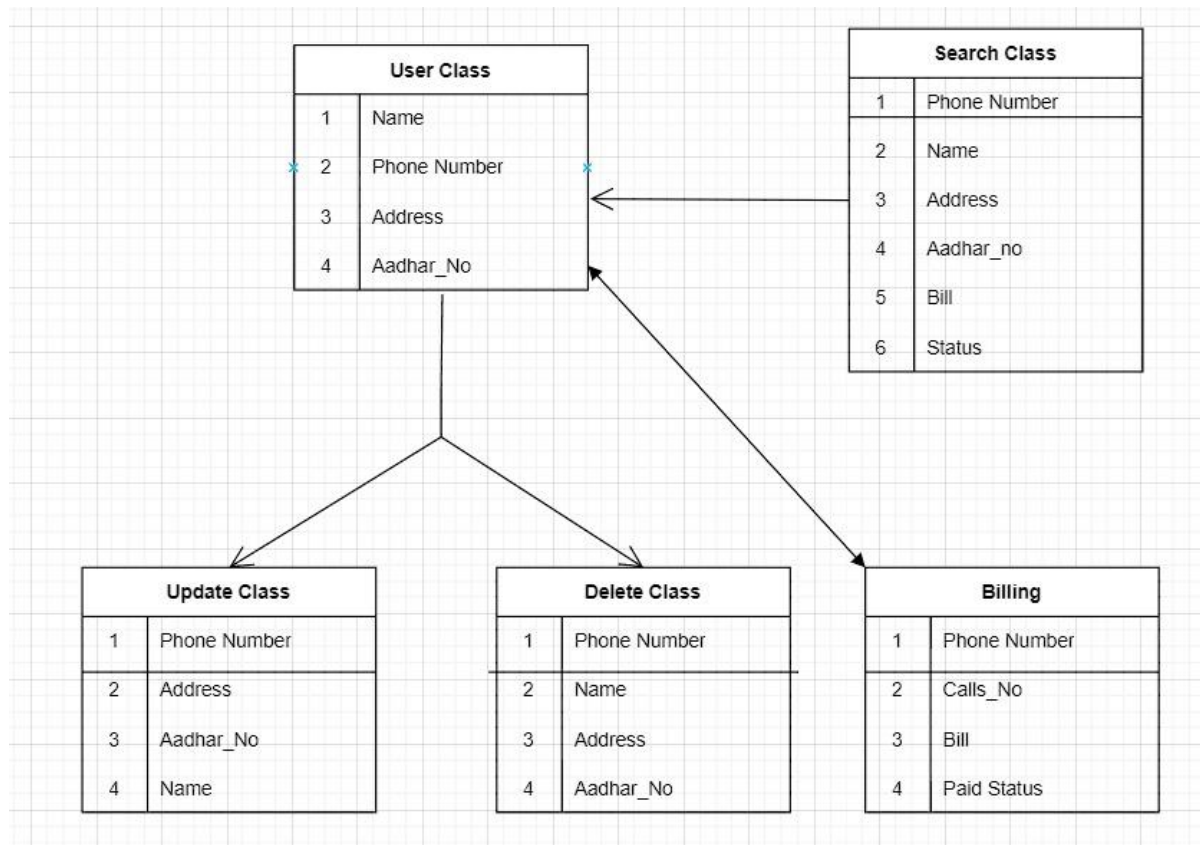
SYNOPSIS

The purpose of this project is to help the customers to use the Computerization of Telephone Billing System. It does almost every work which is related to automatic telephone billingconnection system via new connection, customer registration, viewing customer details, modifications to customer details and all works related to rate of bills, in addition to bill calculation and bill generation.

Telephone Billing System is developed as per seeing the increasing requirement to speed up thework and incorporate a new work culture. Thus a new program has been proposed to reduce manual work, improving work efficiency, saving time and to provide greater flexibility and user friendliness.

DESIGN AND ARCHITECTURE

- Python
- Mysql

COMPONENTS OF THE TELEPHONE TABLE USING CLASS
DIAGRAM

SOURCE CODE

```python
import mysql.connector as mq
def menu():
    print("\t\t\t ONLINE TELEPHONE BILLING SYSTEM")
    print("\t\t\t ==============================\n")
    print("\t\t\t\t MAIN MENU")
    print("\t\t\t\t ========\n")
    print("\t\t1. Register User \t 2. Search customer \n")
    print("\t\t3. Update Customer \t 4. Generate Bill \n")
    print("\t\t5. Delete Customer \t 6. Display records \n")
    print("\t\t7. Help \t 8. Exit \n")
def register():
    print("\n\t\t\tNew Customer Registration.....")
    print("\t\t\t==========================\n")
    print("Details of the customer are phone_no, name, address, aadhar_no
respectively:")
    ph=input("Enter your Phone number:")
    n=input("Enter your Name:")
    add=input("Enter your Address:")
    adh=input("Enter your 12-digit Aadhar Card number:")


    con=mq.connect(host="localhost",user="root",password="Calvin@0203",database=
"telephone")
    cur=con.cursor()
    query="insert into
customer(Phno,name,address,aadhar_no,ftp)values({},'{}','{}','{}',{})".format(ph,n,add
,adh,0)
    cur.execute(query)
    con.commit()
    print("\nSuccessfully Registered the user.....")
    con.close()
def search():
```

```python
    print("\n\t\t\tSearch Customer.....")
    print("\t\t\t===================\n")
    print("Details of the customer are phone_no, name, address, aadhar_no,
bill,status(paid or unpaid), first time payer(yes:0/no:1) respectively:")
    ph=input("\nEnter your phone number:")



con=mq.connect(host="localhost",user="root",password="Calvin@0203",database=
"telephone")
    cur=con.cursor()
    query="select * from customer where Phno={}".format(ph)
    cur.execute(query)
    res=cur.fetchall()
    if res==[]:
        print("Customer does not exist.....")
    else:
        print(res)
    con.close()
def modify():
    print("\n\t\t\tUpdate Customer Data.....")
    print("\t\t\t=======================\n")
    ph=input("\nEnter your phone number:")



con=mq.connect(host="localhost",user="root",password="Calvin@0203",database=
"telephone")
    cur=con.cursor()
    query="select * from customer where Phno={}".format(ph)
    cur.execute(query)
    res=cur.fetchall()
    if res==[]:
        print("Customer does not exist.....")
```

```python
        else:
            print("1. Name\n2. Address\n3. Aadhar_no")
            ch=int(input("Enter choice to update:"))
            if ch==1:
                n=input("Enter new name:")
                query="update customer set name='{}' where phno={}".format(n,ph)
                cur.execute(query)
                con.commit()
                print("Successfully updated name.....")
            elif ch==2:
                add=input("Enter new address:")
                query="update customer set address='{}' where phno={}".format(add,ph)
                cur.execute(query)
                con.commit()
                print("Successfully updated address.....")
            elif ch==3:
                adr=input("Enter new aadhar_no:")
                query="update customer set aadhar_no='{}' where phno={}".format(adr,ph)
                cur.execute(query)
                con.commit()
                print("Successfully updated aadhar_no.....")
            else:
                print("Please choose the correct choice.....")
    con.close()
def billing():
    print("\t\t\tBilling.....")
    print("\t\t\t===========\n")
    ph=input("\nEnter your phone number:")


con=mq.connect(host="localhost",user="root",password="Calvin@0203",database=
"telephone")
```

```python
cur=con.cursor()
query="select * from customer where phno={}".format(ph)
cur.execute(query)
res=cur.fetchall()
if res==[]:
    print("Customer does not exist.....")
else:
    calls=int(input("Enter number of calls:"))
    bill=0
    finalbill=0
    ftime=0
    next50to100_=0
    next100to150_=0
    over150_=0
    if res[0][6]==0:
        ftime=0
        if calls>150:
            bill=bill+(calls-150)*3 + 50*2 + 50*1
            next50to100_=50
            next100to150_=100
            over150_=(calls-150)*3
        elif 100<calls<=150:
            bill=bill+(calls-100)*2 + 50*1
            next100to150_=(calls-100)*2
            next50to100_=50
        elif 50<calls<100:
            bill=bill+(calls-50)*1
            next50to100_=(calls-50)*1
    elif res[0][6]==1:
        ftime=1
        if calls>150:
            bill=bill+(calls)*3
```

```python
            over150_=calls*3
        elif 100<calls<150:
            bill=bill+(calls)*2
            next100to150_=calls*2
        elif calls<100:
            bill=bill+(calls)*1
            next50to100_=calls*1
print("\t\t\tBilling.....")
print("\t\t\t==========\n")
old_bill=res[0][4]
if res[0][5]!="Paid":
    print("\n\t\tPending bill amount:",old_bill)
    if ftime==0:
        print("\n\t\tFirst 50 free calls:",0)
        print("\n\t\tNext 51-100 calls@1.0Rs/call:",next50to100_)
        print("\n\t\tNext 100-150 calls@2.0Rs/call:",next100to150_)
        print("\n\t\tNext over 150 calls@3.0Rs/call:",over150_)
    else:
        print("\n\t\tTotal calls",calls)
        if calls>150:
            print("\n\t\tover 150 calls is Rs3.0/call =",over150_)
        elif 100<calls<150:
            print("\n\t\tbetween 150-100 calls is Rs2.0/call =",next100to150_)
        else:
            print("\n\t\tbelow 100 calls is Rs1.0/call =",next50to100_)
    print("\n\t\tNew bill amount: ",bill)
    print("\n\t\t======================")
    finalbill=old_bill+bill
    print("\t\tTotal amount to pay: ",finalbill)
else:
    print("\n\t\tLast paid bill amount",old_bill)
    print("\n\t\tTotal calls",calls)
```

```python
        if calls>150:
            print("\n\t\tover 150 calls is Rs3.0/call =",over150_)
        elif 100<calls<150:
            print("\n\t\tbetween 150-100 calls is Rs2.0/call =",next100to150_)
        else:
            print("\n\t\tbelow 100 calls is Rs1.0/call =",next50to100_)
        print("\n\t\tNew bill amount: ",bill)
        print("\n\t\t======================")
    finalbill=bill
    print("\t\tTotal bill amount: ",finalbill)
    print("\t\t=====================")
    ch=input("\nPress Y to pay the bill now or any other key to pay later:")
    if ch in ['Y','y','yes','Yes']:
        if ftime==0:
            query="update customer set bill='{}',status='Paid',ftp=1 where
phno={}".format(finalbill,ph)
        else:
            query="update customer set bill='{}',status='Paid' where
phno={}".format(finalbill,ph)
        cur.execute(query)
        con.commit()
        print("Successfully paid the bill.....")
    else:
        query="update customer set bill='{}',status='Unpaid',ftp=1 where
phno={}".format(finalbill,ph)
        cur.execute(query)
        con.commit()
        print("Please make payment as soon as possible.....")
    con.close()
def remove():
    ph=input("\nEnter your phone number:")
```

```python
con=mq.connect(host="localhost",user="root",password="Calvin@0203",database=
"telephone")
    cur=con.cursor()
    query="select * from customer where phno={}".format(ph)
    cur.execute(query)
    res=cur.fetchall()
    if res==[]:
        print("Customer does not exist.....")
    else:
        ch=input("Are you sure to delete the customer.....Yes/No:")
        if ch in ['Y', 'y','yes', 'Yes']:
            query="delete from customer where Phno={}".format(ph)
            cur.execute(query)
            con.commit()
            print("Successfully deleted from database.....")
        else:
            print("No changes made in the databse")
    con.close()
def display():

con=mq.connect(host="localhost",user="root",password="Calvin@0203",database=
"telephone")
    cur=con.cursor()
    query="select * from customer"
    cur.execute(query)
    res=cur.fetchall()
    con.commit()
    fh=open('tele_file.txt','w+')
    for eachrecord in res:
        strformat=str(eachrecord)
        fh.write(strformat)
        fh.write('\n')
```

```python
            fh.flush()
        fh.close
        fh=open('tele_file.txt',"r")
        readr=fh.read()
        print(readr)
        fh.close()
        con.close()
def helping():
    print("\t\t\tHelp")
    print("\t\t\t====")
    print("First 50 calls are free")
    print("51-100 calls are 1.0 Rs per call")
    print("101-150 calls are 2.0 Rs per call")
    print("Above 150 calls are 3.0 Rs per call")


while True:
    menu()
    ch=int(input("Enter your choice:"))
    if ch==1:
        register()
    elif ch==2:
        search()
    elif ch==3:
        modify()
    elif ch==4:
        billing()
    elif ch==5:
        remove()
    elif ch==6:
        display()
    elif ch==7:
        helping()
```

```python
    elif ch==8:
        exit()
    else:
        print("Please choose the correct choice and try again")

    ch=input("\n\nPress y to continue and any other key to exit:")
    if ch not in ["Y","y","yes","Yes"]:
        break
```

OUTPUT

#registering customer

```
                              ONLINE TELEPHONE BILLING SYSTEM
                              ===============================

                                      MAIN MENU
                                      =========

                      1. Register User        2. Search customer

                      3. Update Customer      4. Generate Bill

                      5. Delete Customer      6. Display records

                      7. Help                 8. Exit

Enter your choice:1

                              New Customer Registration.....
                              ==============================

Details of the customer are phone_no, name, address, aadhar_no respectively:
Enter your Phone number:9798623217
Enter your Name:Anjali Vaish
Enter your Address:Goa
Enter your 12-digit Aadhar Card number:678924351278

Successfully Registered the user.....


Press y to continue and any other key to exit:y
```

MySQL 8.0 Command Line Client

```
mysql> select * from customer;
+------------+----------------+-----------+--------------+------+--------+------+
| phno       | name           | address   | aadhar_no    | bill | status | ftp  |
+------------+----------------+-----------+--------------+------+--------+------+
| 9999847323 | Shaurya Srinet | Delhi     | 123456781234 |    0 | N.A.   |    0 |
| 9757301623 | Madhav Gautam  | Bangalore | 123412345678 |    0 | N.A.   |    0 |
| 9999071623 | Arnav Neil     | Noida     | 567812345678 |    0 | N.A.   |    0 |
| 9831200841 | Surabhi Tiwari | Hyderabad | 567842316753 |    0 | N.A.   |    0 |
| 9798623217 | Anjali Vaish   | Goa       | 678924351278 |    0 | N.A.   |    0 |
+------------+----------------+-----------+--------------+------+--------+------+
5 rows in set (0.00 sec)

mysql>
```

#searching customer

```
                    ONLINE TELEPHONE BILLING SYSTEM
                    ===============================


                              MAIN MENU
                              =========


              1. Register User        2. Search customer

              3. Update Customer      4. Generate Bill

              5. Delete Customer      6. Display records

              7. Help                 8. Exit

Enter your choice:2


                         Search Customer.....
                         ====================


Details of the customer are phone_no,name,address,aadhar_no,bill,status(paid or unpaid),
first time payer(yes:0/no:1) respectively:

Enter your phone number:9757301623
[('9757301623', 'Madhav Gautam', 'Bangalore', '123412345678', 0, 'N.A.', 0)]



Press y to continue and any other key to exit:y
```

#updating customer

```
                              MAIN MENU
                              ========

            1. Register User          2. Search customer

            3. Update Customer        4. Generate Bill

            5. Delete Customer        6. Display records

            7. Help                   8. Exit

Enter your choice:3

                      Update Customer Data.....
                      =========================


Enter your phone number:9831200841
1. Name
2. Address
3. Aadhar_no
Enter choice to update:2
Enter new address:Gurugram
Successfully updated address.....


Press y to continue and any other key to exit:y
```

MySQL 8.0 Command Line Client

```
mysql> select * from customer;
+------------+----------------+-----------+--------------+------+--------+------+
| phno       | name           | address   | aadhar_no    | bill | status | ftp  |
+------------+----------------+-----------+--------------+------+--------+------+
| 9999847323 | Shaurya Srinet | Delhi     | 123456781234 |    0 | N.A.   |    0 |
| 9757301623 | Madhav Gautam  | Bangalore | 123412345678 |    0 | N.A.   |    0 |
| 9999071623 | Arnav Neil     | Noida     | 567812345678 |    0 | N.A.   |    0 |
| 9831200841 | Surabhi Tiwari | Gurugram  | 567842316753 |    0 | N.A.   |    0 |
| 9798623217 | Anjali Vaish   | Goa       | 678924351278 |    0 | N.A.   |    0 |
+------------+----------------+-----------+--------------+------+--------+------+
5 rows in set (0.00 sec)
```

#generating bill for a first time payer(1ˢᵗ 50 calls free offer applicable)

```
Enter your choice:4
                    Billing.....
                    ===========


Enter your phone number:9999847323
Enter number of calls:213
                    Billing.....
                    ===========


            Pending bill amount: 0

            First 50 free calls: 0

            Next 51-100 calls@1.0Rs/call: 50

            Next 100-150 calls@2.0Rs/call: 100

            Next over 150 calls@3.0Rs/call: 189

            New bill amount:      339


            =========================
            Total amount to pay:    339
            =========================

Press Y to pay the bill now or any other key to pay later:y
Successfully paid the bill.....


Press y to continue and any other key to exit:y
```

```
mysql> select * from customer;
+------------+---------------+-----------+---------------+------+--------+-----+
| phno       | name          | address   | aadhar_no     | bill | status | ftp |
+------------+---------------+-----------+---------------+------+--------+-----+
| 9999847323 | Shaurya Srinet | Delhi     | 123456781234  | 339  | Paid   |  1  |
| 9757301623 | Madhav Gautam | Bangalore | 123412345678  |  0   | N.A.   |  0  |
| 9999071623 | Arnav Neil    | Noida     | 567812345678  |  0   | N.A.   |  0  |
| 9831200841 | Surabhi Tiwari | Gurugram  | 567842316753  |  0   | N.A.   |  0  |
| 9798623217 | Anjali Vaish  | Goa       | 678924351278  |  0   | N.A.   |  0  |
+------------+---------------+-----------+---------------+------+--------+-----+
5 rows in set (0.00 sec)
```

#generating bill for same customer again(1ˢᵗ 50calls free offer NOT applicable)

```
Enter your choice:4
                        Billing.....
                        ===========


Enter your phone number:9999847323
Enter number of calls:32
                        Billing.....
                        ===========


            Last paid bill amount 339

            Total calls 32

            below 100 calls is Rs1.0/call = 32

            New bill amount:      32

            ========================
            Total bill amount:      32
            ========================

Press Y to pay the bill now or any other key to pay later:y
Successfully paid the bill.....


Press y to continue and any other key to exit:y
```

```
mysql> select * from customer;
+------------+----------------+-----------+-------------+------+--------+-----+
| phno       | name           | address   | aadhar_no   | bill | status | ftp |
+------------+----------------+-----------+-------------+------+--------+-----+
| 9999847323 | Shaurya Srinet | Delhi     | 123456781234 |   32 | Paid   |   1 |
| 9757301623 | Madhav Gautam  | Bangalore | 123412345678 |    0 | N.A.   |   0 |
| 9999071623 | Arnav Neil     | Noida     | 567812345678 |    0 | N.A.   |   0 |
| 9831200841 | Surabhi Tiwari | Gurugram  | 567842316753 |    0 | N.A.   |   0 |
| 9798623217 | Anjali Vaish   | Goa       | 678924351278 |    0 | N.A.   |   0 |
+------------+----------------+-----------+-------------+------+--------+-----+
5 rows in set (0.00 sec)
```

#refusing to pay bill generated for first time payer

```
Enter your choice:4
                        Billing.....
                        ============


Enter your phone number:9757301623
Enter number of calls:189
                        Billing.....
                        ============


            Pending bill amount: 0

            First 50 free calls: 0

            Next 51-100 calls@1.0Rs/call: 50

            Next 100-150 calls@2.0Rs/call: 100

            Next over 150 calls@3.0Rs/call: 117

            New bill amount:      267


            =========================
            Total amount to pay:    267
            =========================

Press Y to pay the bill now or any other key to pay later:n
Please make payment as soon as possible.....

Press y to continue and any other key to exit:y
```

```
mysql> select * from customer;
+------------+---------------+-----------+--------------+------+--------+------+
| phno       | name          | address   | aadhar_no    | bill | status | ftp  |
+------------+---------------+-----------+--------------+------+--------+------+
| 9999847323 | Shaurya Srinet | Delhi    | 123456781234 |   32 | Paid   |    1 |
| 9757301623 | Madhav Gautam | Bangalore | 123412345678 |  267 | Unpaid |    1 |
| 9999071623 | Arnav Neil    | Noida     | 567812345678 |    0 | N.A.   |    0 |
| 9831200841 | Surabhi Tiwari | Gurugram | 567842316753 |    0 | N.A.   |    0 |
| 9798623217 | Anjali Vaish  | Goa       | 678924351278 |    0 | N.A.   |    0 |
+------------+---------------+-----------+--------------+------+--------+------+
5 rows in set (0.00 sec)
```

#finally paying total bill for customer who refused to pay before

```
Enter your choice:4
                        Billing.....
                        ============


Enter your phone number:9757301623
Enter number of calls:43
                        Billing.....
                        ============


                Pending bill amount: 267

                Total calls 43

                below 100 calls is Rs1.0/call = 43

                New bill amount:        43

                =========================
                Total amount to pay:    310
                =========================

Press Y to pay the bill now or any other key to pay later:y
Successfully paid the bill.....


Press y to continue and any other key to exit:y
```

```
mysql> select * from customer;
+------------+---------------+-----------+--------------+------+--------+-----+
| phno       | name          | address   | aadhar_no    | bill | status | ftp |
+------------+---------------+-----------+--------------+------+--------+-----+
| 9999847323 | Shaurya Srinet | Delhi    | 123456781234 |   32 | Paid   |   1 |
| 9757301623 | Madhav Gautam | Bangalore | 123412345678 |  310 | Paid   |   1 |
| 9999071623 | Arnav Neil    | Noida     | 567812345678 |    0 | N.A.   |   0 |
| 9831200841 | Surabhi Tiwari | Gurugram | 567842316753 |    0 | N.A.   |   0 |
| 9798623217 | Anjali Vaish  | Goa       | 678924351278 |    0 | N.A.   |   0 |
+------------+---------------+-----------+--------------+------+--------+-----+
5 rows in set (0.00 sec)
```

#deleting customer

```
                                  ONLINE TELEPHONE BILLING SYSTEM
                                  ================================

                                           MAIN MENU
                                           =========

                 1. Register User          2. Search customer

                 3. Update Customer         4. Generate Bill

                 5. Delete Customer         6. Display records

                 7. Help                    8. Exit

Enter your choice:5

Enter your phone number:9999071623
Are you sure to delete the customer.....Yes/No:y
Successfully deleted from database.....


Press y to continue and any other key to exit:y
```

```
mysql> select * from customer;
+------------+----------------+-----------+-------------+------+--------+-----+
| phno       | name           | address   | aadhar_no   | bill | status | ftp |
+------------+----------------+-----------+-------------+------+--------+-----+
| 9999847323 | Shaurya Srinet | Delhi     | 123456781234 |   32 | Paid   |   1 |
| 9757301623 | Madhav Gautam  | Bangalore | 123412345678 |  310 | Paid   |   1 |
| 9831200841 | Surabhi Tiwari | Gurugram  | 567842316753 |    0 | N.A.   |   0 |
| 9798623217 | Anjali Vaish   | Goa       | 678924351278 |    0 | N.A.   |   0 |
+------------+----------------+-----------+-------------+------+--------+-----+
4 rows in set (0.00 sec)
```

#displaying records from file

```
                    ONLINE TELEPHONE BILLING SYSTEM
                    ================================

                             MAIN MENU
                             =========


              1. Register User            2. Search customer

              3. Update Customer          4. Generate Bill

              5. Delete Customer          6. Display records

              7. Help                     8. Exit

Enter your choice:6
('9999847323', 'Shaurya Srinet', 'Delhi', '123456781234', 32, 'Paid', 1)
('9757301623', 'Madhav Gautam', 'Bangalore', '123412345678', 310, 'Paid', 1)
('9831200841', 'Surabhi Tiwari', 'Gurugram', '567842316753', 0, 'N.A.', 0)
('9798623217', 'Anjali Vaish', 'Goa', '678924351278', 0, 'N.A.', 0)



Press y to continue and any other key to exit:y
```

MySQL 8.0 Command Line Client

```
mysql> select * from customer;
+------------+----------------+-----------+--------------+------+--------+-----+
| phno       | name           | address   | aadhar_no    | bill | status | ftp |
+------------+----------------+-----------+--------------+------+--------+-----+
| 9999847323 | Shaurya Srinet | Delhi     | 123456781234 |   32 | Paid   |   1 |
| 9757301623 | Madhav Gautam  | Bangalore | 123412345678 |  310 | Paid   |   1 |
| 9831200841 | Surabhi Tiwari | Gurugram  | 567842316753 |    0 | N.A.   |   0 |
| 9798623217 | Anjali Vaish   | Goa       | 678924351278 |    0 | N.A.   |   0 |
+------------+----------------+-----------+--------------+------+--------+-----+
4 rows in set (0.00 sec)

mysql>
```

#help

```
                    ONLINE TELEPHONE BILLING SYSTEM
                    ================================


                              MAIN MENU
                              =========


              1. Register User          2. Search customer

              3. Update Customer        4. Generate Bill

              5. Delete Customer        6. Display records

              7. Help                   8. Exit

Enter your choice:7
                         Help
                         ====
First 50 calls are free
51-100 calls are 1.0 Rs per call
101-150 calls are 2.0 Rs per call
Above 150 calls are 3.0 Rs per call



Press y to continue and any other key to exit:y
```

exit

```
                    ONLINE TELEPHONE BILLING SYSTEM
                    ===============================


                            MAIN MENU
                            =========


            1. Register User      2. Search customer

            3. Update Customer    4. Generate Bill

            5. Delete Customer    6. Display records

            7. Help               8. Exit

Enter your choice:8
>>>
```

CONCLUSION

A phone billing system is a process of gathering consumption data, calculating billing and charging information, availing customer bills, processing the customer payments as well as managing collection of debts.
So, with the help of a telephone billing software, the phone billing system is automated helping you to not only improve accuracy but also significantly reduce costs.

Consequently, it assists us to manage our billing operations.