

LAPORAN
PRAKTIKUM SISTEM BASIS DATA
(MODUL 12)
“Aplikasi Dengan Database”



Disusun oleh :

NAMA : CINDI DILA APRILIANA

NIM : L200200106

KELAS : E

INFORMATIKA
FAKULTAS KOMUNIKASI DAN INFORMATIKA
UNIVERSITAS MUHAMMADIYAH SURAKARTA
TAHUN 2021/2022

Langkah-langkah Praktikum

- SELECT

```
1
2
3
4
5 package tapraksbd;
6 import java.sql.Connection;
7 import java.sql.Driver;
8 import java.sql.DriverManager;
9 import java.sql.ResultSet;
10 import java.sql.Statement;
11 import java.sql.SQLException;
12 import java.util.logging.Level;
13 import java.util.logging.Logger;
14 /**
15  *
16  * @CINDI DILA APRILIANA_L200200106
17  */
18 public class TAPRAKSBD {
19     static final String JDBC_Driver = "com.mysql.jdbc.Driver";
20     static final String DB_URL = "jdbc:mysql://localhost/dbperbankan";
21     static final String USER = "root";
22     static final String PASS = "";
23
24     static Connection conn;
25     static Statement statement;
26     static ResultSet rs;
27
28     /**
29      * @param args the command line arguments
30      */
```

```
29     * @param args the command line arguments
30     */
31     public static void main(String[] args) throws SQLException{
32         try{
33             System.out.println("melakukan koneksi ke" +JDBC_Driver);
34             System.out.println("Loading driver");
35             Class.forName(JDBC_Driver);
36             conn = DriverManager.getConnection(DB_URL, USER, PASS);
37             System.out.println("use" + conn.getCatalog());
38             System.out.println("databae change");
39
40             //INSERT
41             //statement = conn.createStatement();
42             //String insert = "INSERT INTO nasabah(id_nasabah, nama_nasabah, alamat_nasabah)"
43             //      + " VALUE('%s','%s','%s')";
44             //insert = String.format(insert,101,"Cindi Dila Apriliana","jl.Sriwijaya");
45
46             //UPDATE
47             //String update = "UPDATE nasabah set alamat nasabah= 'Jl.Bougenvile' where id nasabah = 101";
48
49             // DELETE
50             //String delete = "delete from nasabah where id_nasabah = 101";
```

```

51
52
53     statement = conn.createStatement();
54     //statement.execute(insert);
55     //statement.execute(update);
56     //statement.execute(delete);
57     String sql = "Select * from nasabah";
58     rs = statement.executeQuery(sql);
59
60     String header = String.format("%2s | %-20s | %-40s", "ID", "Nama", "Alamat");
61     System.out.println(header);
62
63     while(rs.next()){
64         String output = String.format("%2s | %-20s | %-40s",rs.getInt("id_nasabah"),
65             rs.getString("nama_nasabah"), rs.getString("alamat_nasabah"));
66         System.out.println(output);
67     }
68     statement.close();
69     conn.close();
70
71 }catch (Exception e){
72     e.printStackTrace();
73 }
74 }
75
76 }
77

```

Output - TAPRAKSBD (run) X

```

run:
melakukan koneksi kecom.mysql.jdbc.Driver
Loading driver
Loading class 'com.mysql.jdbc.Driver'. This is deprecated. The new driver class is 'com.mysql.cj.jdbc.Driver'.
usedbperbankan
databae change
ID | Nama | Alamat
1 | Sutopo | Jl. Jendral Sudirman 12
2 | Maryati | Jl. MT. Heryono 31
3 | Suparman | Jl. Hasanudin 81
4 | Kartika Padmasari | Jl. Manggis 15
5 | Budi Eko Prayogo | Jl. Kantil 30
6 | Satria Eka Jaya | Jl. Slamet Riyadi 45
8 | Sari Murti | Jl. Pangandaran 11
9 | Canka Lokananta | Jl. Tidar 86
10 | Budi Murtono | Jl. Merak 22
11 | User 11 | Alamat 11
21 | User 21 | Alamat 21
31 | Susilo | Sukoharjo
BUILD SUCCESSFUL (total time: 0 seconds)

```

- insert

```
package tapraksbd;
import java.sql.Connection;
import java.sql.Driver;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;
import java.sql.SQLException;
import java.util.logging.Level;
import java.util.logging.Logger;
/**
 *
 * @CINDI DILA APRILIANA L200200106
 */
```

```
17  */
18  public class TAPRAKSBD {
19      static final String JDBC_Driver = "com.mysql.jdbc.Driver";
20      static final String DB_URL = "jdbc:mysql://localhost/dbperbankan";
21      static final String USER = "root";
22      static final String PASS = "";
23
24      static Connection conn;
25      static Statement statement;
26      static ResultSet rs;
27
28      /**
29       * @param args the command line arguments
30       */
31      public static void main(String[] args) throws SQLException{
32          try{
33              System.out.println("melakukan koneksi ke" + JDBC_Driver);
34              System.out.println("Loading driver");
35              Class.forName(JDBC_Driver);
36              conn = DriverManager.getConnection(DB_URL, USER, PASS);
37              System.out.println("use" + conn.getCatalog());
38              System.out.println("databae change");
39
40              //INSERT
41              statement = conn.createStatement();
42              String insert = "INSERT INTO nasabah(id_nasabah, nama_nasabah, alamat_nasabah)"
43                  + " VALUE('%s','%s','%s')";
44              insert = String.format(insert,101,"Cindi Dila Apriliana","jl.Sriwijaya");
45          }
```

```

52
53     statement = conn.createStatement();
54     statement.execute(insert);
55     //statement.execute(update);
56     //statement.execute(delete);
57     String sql = "Select * from nasabah";
58     rs = statement.executeQuery(sql);
59
60     String header = String.format("%2s | %-20s | %-40s", "ID", "Nama", "Alamat");
61     System.out.println(header);
62
63     while(rs.next()){
64         String output = String.format("%2s | %-20s | %-40s", rs.getInt("id_nasabah"),
65             rs.getString("nama_nasabah"), rs.getString("alamat_nasabah"));
66         System.out.println(output);
67     }
68     statement.close();
69     conn.close();
70
71 }catch (Exception e){
72     e.printStackTrace();
73 }
74
75

```

Output - TAPRAKSBD (run) ✕

```

usedbperbankan
database change
ID | Nama | Alamat
1 | Sutopo | Jl. Jendral Sudirman 12
2 | Maryati | Jl. MT. Heryono 31
3 | Suparman | Jl. Hasanudin 81
4 | Kartika Padmasari | Jl. Manggis 15
5 | Budi Eko Prayogo | Jl. Kantil 30
6 | Satria Eka Jaya | Jl. Slamet Riyadi 45
8 | Sari Murti | Jl. Pangandaran 11
9 | Canka Lokananta | Jl. Tidar 86
10 | Budi Murtono | Jl. Merak 22
11 | User 11 | Alamat 11
21 | User 21 | Alamat 21
31 | Susilo | Sukoharjo
101 | Cindi Dila Apriliana | jl.Sriwijaya
BUILD SUCCESSFUL (total time: 0 seconds)

```

- update

```

5 package tapraksbd;
6 import java.sql.Connection;
7 import java.sql.Driver;
8 import java.sql.DriverManager;
9 import java.sql.ResultSet;
10 import java.sql.Statement;
11 import java.sql.SQLException;
12 import java.util.logging.Level;
13 import java.util.logging.Logger;
14 /**
15  *
16  * @CINDI DILA APRILIANA_L200200106
17  */
18 public class TAPRAKSBD {
19     static final String JDBC_Driver = "com.mysql.jdbc.Driver";
20     static final String DB_URL = "jdbc:mysql://localhost/dbperbankan";
21     static final String USER = "root";
22     static final String PASS = "";
23
24     static Connection conn;
25     static Statement statement;
26     static ResultSet rs;
27
28     /**
29      * @param args the command line arguments
30      */
31
32

```

```

30  */
31  public static void main(String[] args) throws SQLException{
32      try{
33          System.out.println("melakukan koneksi ke" + JDBC_Driver);
34          System.out.println("Loading driver");
35          Class.forName(JDBC_Driver);
36          conn = DriverManager.getConnection(DB_URL, USER, PASS);
37          System.out.println("use" + conn.getCatalog());
38          System.out.println("databae change");
39
40          //INSERT
41          //statement = conn.createStatement();
42          //String insert = "INSERT INTO nasabah(id_nasabah, nama_nasabah, alamat_nasabah)"
43          //      + " VALUE('%s','%s','%s')";
44          //insert = String.format(insert,101,"Cindi Dila Apriliana","jl.Sriwijaya");
45
46          //UPDATE
47          String update = "UPDATE nasabah set alamat_nasabah= 'Jl.Bougenville' where id_nasabah = 101";
48
49          // DELETE
50          //String delete = "delete from nasabah where id_nasabah = 101";
51
52
53          statement = conn.createStatement();
54          //statement.execute(insert);
55          statement.execute(update);
56          //statement.execute(delete);
57          String sql = "Select * from nasabah";
58          rs = statement.executeQuery(sql);
59

```

```

60      String header = String.format("%2s | %-20s | %-40s", "ID", "Nama", "Alamat");
61      System.out.println(header);
62
63      while(rs.next()){
64          String output = String.format("%2s | %-20s | %-40s",rs.getInt("id_nasabah"),
65          rs.getString("nama_nasabah"), rs.getString("alamat_nasabah"));
66          System.out.println(output);
67      }
68      statement.close();
69      conn.close();
70
71      }catch (Exception e){
72          e.printStackTrace();
73      }
74  }
75
76  }
77
78

```

Output - TAPRAKSBD (run) ✕

```

run:
melakukan koneksi kecom.mysql.jdbc.Driver
Loading driver
Loading class 'com.mysql.jdbc.Driver'. This is deprecated. The new driver class
usedbperbankan
databae change
ID | Nama | Alamat
1 | Sutopo | Jl. Jendral Sudirman 12
2 | Maryati | Jl. MT. Heryono 31
3 | Suparman | Jl. Hasanudin 81
4 | Kartika Padmasari | Jl. Manggis 15
5 | Budi Eko Prayogo | Jl. Kantil 30
6 | Satria Eka Jaya | Jl. Slamet Riyadi 45
8 | Sari Murti | Jl. Pangandaran 11
9 | Canka Lokananta | Jl. Tidar 86
10 | Budi Murtono | Jl. Merak 22
11 | User 11 | Alamat 11
21 | User 21 | Alamat 21
31 | Susilo | Sukoharjo
101 | Cindi Dila Apriliana | Jl.Bougenville
BUILD SUCCESSFUL (total time: 0 seconds)

```

- delete

```

5 package tapraksbd;
6 import java.sql.Connection;
7 import java.sql.Driver;
8 import java.sql.DriverManager;
9 import java.sql.ResultSet;
10 import java.sql.Statement;
11 import java.sql.SQLException;
12 import java.util.logging.Level;
13 import java.util.logging.Logger;
14 /**
15  *
16  * @CINDI DILA APRILIANA_L200200106
17  */
18 public class TAPRAKSBD {
19     static final String JDBC_Driver = "com.mysql.jdbc.Driver";
20     static final String DB_URL = "jdbc:mysql://localhost/dbperbankan";
21     static final String USER = "root";
22     static final String PASS = "";
23
24     static Connection conn;
25     static Statement statement;
26     static ResultSet rs;
27

```

```

    public static void main(String[] args) throws SQLException{
        try{
            System.out.println("melakukan koneksi ke" + JDBC_Driver);
            System.out.println("Loading driver");
            Class.forName(JDBC_Driver);
            conn = DriverManager.getConnection(DB_URL, USER, PASS);
            System.out.println("use" + conn.getCatalog());
            System.out.println("databae change");

            //INSERT
            //statement = conn.createStatement();
            //String insert = "INSERT INTO nasabah(id_nasabah, nama_nasabah, alamat_nasabah)"
            //    + " VALUE('%s','%s','%s')";
            //insert = String.format(insert,101,"Cindi Dila Apriliana","Jl.Sriwijaya");

            //UPDATE
            //String update = "UPDATE nasabah set alamat nasabah= 'Jl.Bougenville' where id nasabah = 101";

            // DELETE
            String delete = "delete from nasabah where id nasabah = 101";

```

```

        statement = conn.createStatement();
        //statement.execute(insert);
        //statement.execute(update);
        statement.execute(delete);
        String sql = "Select * from nasabah";
        rs = statement.executeQuery(sql);

        String header = String.format("%2s | %-20s | %-40s", "ID", "Nama", "Alamat");
        System.out.println(header);

        while(rs.next()){
            String output = String.format("%2s | %-20s | %-40s", rs.getInt("id_nasabah"),
                rs.getString("nama_nasabah"), rs.getString("alamat_nasabah"));
            System.out.println(output);
        }
        statement.close();
        conn.close();
    } catch (Exception e){
        e.printStackTrace();
    }
}

```

Output - TAPRAKSBD (run)

```

run:
melakukan koneksi kecom.mysql.jdbc.Driver
Loading driver
Loading class `com.mysql.jdbc.Driver'. This is deprecated. The new driver class
usedbperbankan
databae change
ID | Nama | Alamat
1 | Sutopo | Jl. Jendral Sudirman 12
2 | Maryati | Jl. MT. Heryono 31
3 | Suparman | Jl. Hasanudin 81
4 | Kartika Padmasari | Jl. Manggis 15
5 | Budi Eko Prayogo | Jl. Kantil 30
6 | Satria Eka Jaya | Jl. Slamet Riyadi 45
8 | Sari Murti | Jl. Pangandaran 11
9 | Canka Lokananta | Jl. Tidar 86
10 | Budi Murtono | Jl. Merak 22
11 | User 11 | Alamat 11
21 | User 21 | Alamat 21
31 | Susilo | Sukoharjo
BUILD SUCCESSFUL (total time: 0 seconds)

```

Tugas

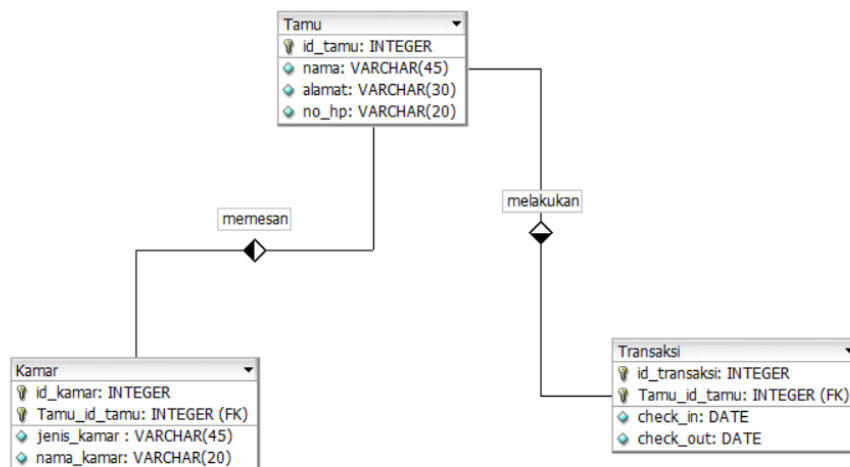
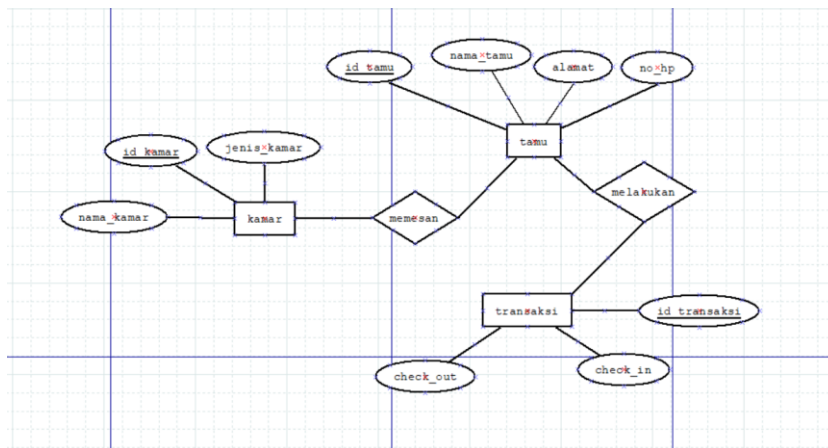
1. Buatlah sebuah aplikasi (berbasis Python atau berbasis Java) pada salah satu diantara studi kasus berikut :
 - a. Perhotelan, dengan minimal entitas yang ada, antara lain :
 - Tamu
 - Kamar
 - Transaksi
2. Pada aplikasi yang dipilih, buatlah penjelasan studi kasus serta ER Diagram-nya!
 1. Menentukan entities (object-object dasar) yang perlu ada di databases.
 - a. Tamu : menyimpan semua data pribadi semuatamu.
 - b. Kamar : menyimpan semua informasi tentang kamar yang akan di tempati
 - c. Transaksi : meyimpan informasi tentang semua transaksi yang dilakukan.
 2. Menentukan attributes (sifat-sifat) masing-masing entitas sesuai kebutuhan database
 - a. **tamu :**
 - id_tamu: nomor induk tamu(integer)
 - nama : nama lengkap tamu(varchar(45))
 - alamat : alamat lengkap tamu(varchar(30))
 - b. **kamar :**
 - id_kamar : nomor kamar (integer)
 - id_tamu: nomor induk tamu(integer)FK
 - jenis_kamar : jenis kamar yang di tempati(varchar(45))
 - nama_kamar : nama kamar yang di tempati(varchar(20))
 - c. **transaksi :**
 - id_transaksi : nomor transaksi(integer)
 - id_tamu: nomor induk tamu(integer)FK
 - check_in : tanggal check_in(Date)
 - check_out : tanggal check_out(Date)
 3. Menentukan relationship (hubungan) antar entitas

	Tamu	Kamar	Transaksi
Tamu		1 : n	1 : n
Kamar			-
Transaksi			

Hubungan

- **Tamu memesan kamar:**
 - Tabel utama : **tamu**
 - Tabel kedua : **kamar**
 - Relationship : one-to-many (1:n)
- **Tamu melakukan transaksi**
 - Tabel utama : **tamu**
 - Tabel kedua : **kamar**
 - Relationship : one-to-many (1:n)

4. ERD



3. Terapkan pada aplikasi yang dipilih, beberapa fungsi berikut untuk semua entitas :

a. Proses View (Select)

- Tamu

```
MariaDB [perhotelan]> select *from tamu;
```

id_tamu	nama	alamat	no_hp
1000	Cindi Dila Dila	Jl. Jerapah 9	087654987546
1001	Rida Arina	Jl.Uranus 10	087357298639
1002	Andika Risky Faizatama	Jl.Saturnus 12	089735277254
1003	Nicky Julyatrika Sari	Jl.Venus 30	08357937625
1004	Dionaca Wida Amaly	Jl.Merkurius 16	086524837876
1005	Lyan Budi Rosawati	Jl.Bumi 56	082654786349
1006	Fajar Indah Nur Azizah	Jl.Tulip 3	086547243176
1007	Dinny Patria Muslimawati	Jl.Bougenvile 5	087256387653
1008	Muhammad Naufal Aji Satrio	Jl.Kipas 21	082651826278
1009	Muhammad Alichwan	Jl.Aloevera11	082563782653

```
10 rows in set (0.000 sec)

MariaDB [perhotelan]>
```

- Kamar

```
MariaDB [perhotelan]> select *from kamar;
```

id_kamar	id_tamuFK	jenis_kamar	nama_kamar
1	1000	WIP	Anggrek A
2	1001	VIP	Anggrek B
3	1002	VIP	Anggrek C
4	1003	WVIP	Melati A
5	1004	VIP	Melati B
6	1005	WVIP	Tulip A
7	1006	VIP	Tulip B
8	1007	WVIP	Tulip C
9	1008	WVIP	Mawar A
10	1009	WVIP	Mawar B

```
10 rows in set (0.000 sec)

MariaDB [perhotelan]>
```

- Transaksi

```
MariaDB [perhotelan]> select *from transaksi;
```

id_transaksi	id_tamuFK	check_in	check_out
1231	1000	2022-02-02	2022-02-03
1232	1001	2022-02-03	2022-02-04
1233	1002	2022-02-07	2022-02-08
1234	1003	2022-02-12	2022-02-14
1235	1004	2022-02-20	2022-02-21
1236	1005	2022-02-24	2022-02-25
1237	1006	2022-02-27	0000-00-00
1238	1007	2022-03-02	2022-05-02
1239	1008	2022-03-15	2022-03-18
12310	1009	2022-03-22	2022-03-25

```
10 rows in set (0.000 sec)

MariaDB [perhotelan]>
```

b. Insert (memasukkan data)

Insert.py - C:/Users/MSI GF63/Documents/UMS/TUGAS SEMESTER 4/Praktikum SBD/Modul 12/Insert.py (3.10.5)

File Edit Format Run Options Window Help

```
#MODUL_12
#CINDI DILA APRILIANA_L200200106

#INSERT Tamu
from datetime import date, datetime, timedelta
import mysql.connector

cnx = mysql.connector.connect(user='root',database='perhotelan')
cursor = cnx.cursor()
data_tamu = ("INSERT INTO tamu(id_tamu, nama, alamat, no_hp) VALUES(%s, %s, %s, %s)")
tambah_tamu = ('1010','Diana','Jl. Mawar 14','087903752763')
cursor.execute(data_tamu, tambah_tamu)

cnx.commit()
cursor.close()
cnx.close()
```

MariaDB [perhotelan]> select *from tamu;

id_tamu	nama	alamat	no_hp
1000	Cindi Dila Dila	Jl. Jerapah 9	087654987546
1001	Rida Arina	Jl.Uranus 10	087357298639
1002	Andika Risky Faizatama	Jl.Saturnus 12	089735277254
1003	Nicky Julyatrika Sari	Jl.Venus 30	08357937625
1004	Dionaca Wida Amaly	Jl.Merkurius 16	086524837876
1005	Lyan Budi Rosawati	Jl.Bumi 56	082654786349
1006	Fajar Indah Nur Azizah	Jl.Tulip 3	086547243176
1007	Dinny Patria Muslimawati	Jl.Bougenville 5	087256387653
1008	Muhammad Naufal Aji Satrio	Jl.Kipas 21	082651826278
1009	Muhammad Alichwan	Jl.Aloevera11	082563782653
1010	Diana	Jl. Mawar 14	087903752763

11 rows in set (0.000 sec)

MariaDB [perhotelan]> _

c. Update (mengubah data)

update.py - C:/Users/MSI GF63/Documents/UMS/TUGAS SEMESTER 4/Praktikum SBD/Modul 12/update.py (3.10.5)

File Edit Format Run Options Window Help

```
#MODUL_12
#CINDI DILA APRILIANA_L200200106

from datetime import date, datetime, timedelta
import mysql.connector

cnx = mysql.connector.connect(user='root',database='perhotelan')
cursor = cnx.cursor()
update_kamar = ("UPDATE kamar SET jenis_kamar = 'VIP' WHERE id_tamuFK = '1009'")
cursor.execute(update_kamar)

cnx.commit()
cursor.close()
cnx.close()
```


```

MariaDB [perhotelan]> select *from kamar;
+-----+-----+-----+-----+
| id_kamar | id_tamuFK | jenis_kamar | nama_kamar |
+-----+-----+-----+-----+
| 1 | 1000 | WVIP | Anggrek A |
| 2 | 1001 | VIP | Anggrek B |
| 3 | 1002 | VIP | Anggrek C |
| 4 | 1003 | WVIP | Melati A |
| 5 | 1004 | VIP | Melati B |
| 6 | 1005 | WVIP | Tulip A |
| 7 | 1006 | VIP | Tulip B |
| 8 | 1007 | WVIP | Tulip C |
| 9 | 1008 | WVIP | Mawar A |
| 10 | 1009 | VIP | Mawar B |
+-----+-----+-----+-----+
10 rows in set (0.000 sec)

MariaDB [perhotelan]> _

```

d. Delete (menghapus data)

 delete.py - C:/Users/MSI GF63/Documents/UMS/TUGAS SEMESTER 4/Praktikum SBD/Modul ...

File Edit Format Run Options Window Help

#MODUL_12

#CINDI DILA APRILIANA_L200200106

```

from datetime import date, datetime, timedelta
import mysql.connector

```

```

cnx = mysql.connector.connect(user='root',database='perhotelan')
cursor = cnx.cursor()
update_kamar = ("DELETE FROM kamar WHERE id_tamuFK = 1009")
cursor.execute(update_kamar)

```

```

cnx.commit()
cursor.close()
cnx.close()

```

```

MariaDB [perhotelan]> select *from kamar;
+-----+-----+-----+-----+
| id_kamar | id_tamuFK | jenis_kamar | nama_kamar |
+-----+-----+-----+-----+
| 1 | 1000 | WVIP | Anggrek A |
| 2 | 1001 | VIP | Anggrek B |
| 3 | 1002 | VIP | Anggrek C |
| 4 | 1003 | WVIP | Melati A |
| 5 | 1004 | VIP | Melati B |
| 6 | 1005 | WVIP | Tulip A |
| 7 | 1006 | VIP | Tulip B |
| 8 | 1007 | WVIP | Tulip C |
| 9 | 1008 | WVIP | Mawar A |
+-----+-----+-----+-----+
9 rows in set (0.000 sec)

MariaDB [perhotelan]> _

```