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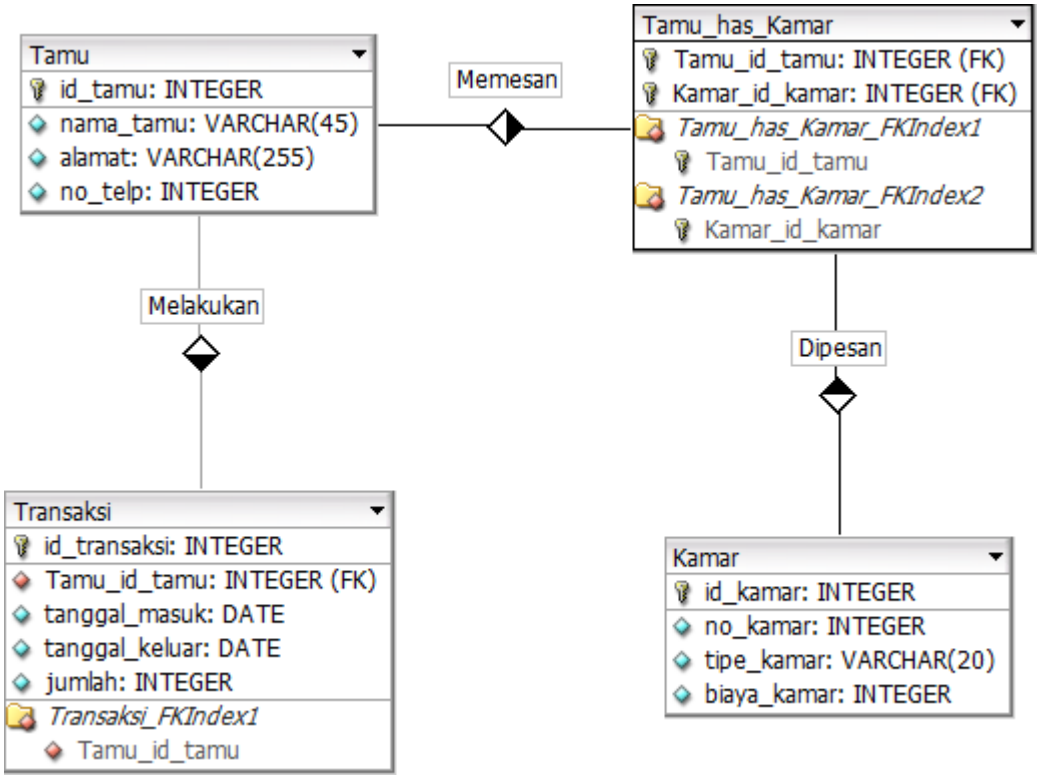
1. **Aplikasi Perhotelan Studi Kasus :**
   Membuat rancangan sebuah database untuk menangani data-data pehotelan.
   Data yang akan ditangani meliputi:
   - Data Tamu
   - Data Kamar
   - Data Transaksi

2. **Desain ER Diagram**



3. **Membuat Database Perhotelan**

```
MariaDB [(none)]> create database Perhotelan;
Query OK, 1 row affected (0.13 sec)

MariaDB [(none)]> use perhotelan;
Database changed
```

- Table Tamu

```
MariaDB [perhotelan]> create table tamu(
    -> id_tamu integer primary key,
    -> nama_tamu varchar(45) not null,
    -> alamat varchar(255));
Query OK, 0 rows affected (0.21 sec)

MariaDB [perhotelan]> insert into tamu values
    -> ('1', 'Angieta', 'Sragen'),
    -> ('2', 'Putri', 'Solo'),
    -> ('3', 'keyla', 'Ngawi');
Query OK, 3 rows affected (0.09 sec)
Records: 3  Duplicates: 0  Warnings: 0

MariaDB [perhotelan]> select * from tamu;
+---------+-----------+--------+
| id_tamu | nama_tamu | alamat |
+---------+-----------+--------+
|       1 | Angieta   | Sragen |
|       2 | Putri     | Solo   |
|       3 | keyla     | Ngawi  |
+---------+-----------+--------+
3 rows in set (0.00 sec)
```

- Table Kamar

```
MariaDB [perhotelan]> create table kamar (
    -> id_kamar integer primary key,
    -> no_kamar integer not null,
    -> tipe_kamar varchar(20) not null,
    -> biaya_kamar integer );
Query OK, 0 rows affected (0.18 sec)

MariaDB [perhotelan]> insert into kamar values
    -> (1101, 101, 'Standar', 150000),
    -> (1102, 102, 'Standar', 150000),
    -> (2201, 201, 'Suite', 300000),
    -> (2202, 202, 'Suite', 300000);
Query OK, 4 rows affected (0.06 sec)
Records: 4  Duplicates: 0  Warnings: 0

MariaDB [perhotelan]> select * from kamar;
+----------+----------+------------+-------------+
| id_kamar | no_kamar | tipe_kamar | biaya_kamar |
+----------+----------+------------+-------------+
|     1101 |      101 | Standar    |      150000 |
|     1102 |      102 | Standar    |      150000 |
|     2201 |      201 | Suite      |      300000 |
|     2202 |      202 | Suite      |      300000 |
+----------+----------+------------+-------------+
4 rows in set (0.00 sec)
```

- Table Transaksi

```
MariaDB [perhotelan]> create table transaksi(
    -> id_transaksi integer primary key,
    -> tamu_id_tamu integer references tamu(id_tamu) on delete set null on update cascade,
    -> tanggal_masuk date,
    -> tanggal_keluar date,
    -> jumlah integer);
Query OK, 0 rows affected (0.22 sec)

MariaDB [perhotelan]> insert into transaksi values
    -> (1111, 1, '2019-06-17', '2019-06-18', 150000),
    -> (1112, 2, '2019-06-20', '2019-06-22', 300000),
    -> (1113, 3, '2019-06-25', '2019-06-26', 300000);
Query OK, 3 rows affected (0.10 sec)
Records: 3  Duplicates: 0  Warnings: 0

MariaDB [perhotelan]> select * from transaksi;
+--------------+--------------+---------------+----------------+--------+
| id_transaksi | tamu_id_tamu | tanggal_masuk | tanggal_keluar | jumlah |
+--------------+--------------+---------------+----------------+--------+
|         1111 |            1 | 2019-06-17    | 2019-06-18     | 150000 |
|         1112 |            2 | 2019-06-20    | 2019-06-22     | 300000 |
|         1113 |            3 | 2019-06-25    | 2019-06-26     | 300000 |
+--------------+--------------+---------------+----------------+--------+
3 rows in set (0.00 sec)
```

- Table tamu_has_kamar

```
MariaDB [perhotelan]> create table tamu_has_kamar (
    -> tamu_id_tamu integer references tamu(id_tamu) on delete cascade on update cascade,
    -> kamar_id_kamar integer references kamar(id_kamar) on delete cascade on update cascade,
    -> primary key(tamu_id_tamu, kamar_id_kamar));
Query OK, 0 rows affected (0.17 sec)

MariaDB [perhotelan]> insert into tamu_has_kamar values
    -> (1, 1101),
    -> (2, 1102),
    -> (3, 2201);
Query OK, 3 rows affected (0.07 sec)
Records: 3  Duplicates: 0  Warnings: 0

MariaDB [perhotelan]> select * from tamu_has_kamar;
+--------------+----------------+
| tamu_id_tamu | kamar_id_kamar |
+--------------+----------------+
|            1 |           1101 |
|            2 |           1102 |
|            3 |           2201 |
+--------------+----------------+
3 rows in set (0.00 sec)
```

4. Aplikasi Perhotelan dengan Python

❖ Tamu

```
import mysql.connector
import os

db = mysql.connector.connect(
    host='localhost',
    user='root',
    passwd='',
    database='perhotelan'
)

def insert_data(db):
    id_tamu = input('Masukkan ID Tamu: ')
    nama_tamu = input('Masukkan Nama Tamu: ')
    alamat = input('Masukkan Alamat Tamu: ')
    val = (id_tamu, nama_tamu, alamat)
    cursor = db.cursor()
    sql = 'insert into tamu (id_tamu, nama_tamu, alamat) values (%s, %s, %s)'
    cursor.execute(sql,val)
    db.commit()
    print("{} data berhasil disimpan".format(cursor.rowcount))

def show_data(db):
    cursor = db.cursor()
    sql = 'select * from tamu'
    cursor.execute(sql)
    results = cursor.fetchall()

    if cursor.rowcount<0:
        print ('Tidak ada data')
    else:
        for data in results:
            print(data)

def update_data(db):
    cursor = db.cursor()
    show_data(db)
    id_tamu = input('Pilih ID Tamu> ')
    nama_tamu = input('Nama baru: ')
    alamat = input('Alamat baru: ')
    sql = 'update tamu set nama_tamu=%s, alamat=%s where id_tamu=%s'
    val = (nama_tamu, alamat, id_tamu)
    cursor.execute(sql,val)
    db.commit()
    print('{} data berhasil diubah'.format(cursor.rowcount))
```

```
def delete_data(db):
    cursor = db.cursor()
    show_data(db)
    id_tamu = input('Pilih ID Tamu> ')
    sql = 'delete from tamu where id_tamu=%s'
    val = (id_tamu,)
    cursor.execute(sql,val)
    db.commit()
    print('{} data berhasil dihapus'.format(cursor.rowcount))

def show_menu(db):
    print('===== Aplikasi Database Perhotelan =====')
    print('1. Tampilkan Data')
    print('2. Insert Data')
    print('3. Update Data')
    print('4. Hapus Data')
    print('5. Keluar')
    print('====================')
    menu = input('Pilih Menu: ')

    #clear screen
    os.system('clear')

    if menu == '1':
        show_data(db)
    elif menu == '2':
        insert_data(db)
    elif menu == '3':
        update_data(db)
    elif menu == '4':
        delete_data(db)
    elif menu == '5':
        exit()
    else:
        print('Menu Salah')

if __name__ == '__main__':
    while(True):
        show_menu(db)
```

- Menampilkan data (Select)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Delete Data
5. Exit
====================
Pilih Menu: 1
(1, 'Angieta', 'Sragen')
(2, 'Putri', 'Solo')
(3, 'keyla', 'Ngawi')
```

- Memasukkan data (Insert)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Delete Data
5. Exit
====================
Pilih Menu: 2
Masukkan ID Tamu: 4
Masukkan Nama Tamu: selly
Masukkan Alamat Tamu: jogja
1 Data berhasil disimpan
```

- Mengubah data (Update)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Delete Data
5. Exit
====================
Pilih Menu: 3
(1, 'Angieta', 'Sragen')
(2, 'Putri', 'Solo')
(3, 'keyla', 'Ngawi')
(4, 'selly', 'jogja')
Pilih ID Tamu> 4
Nama baru: roni
Alamat baru: bandung
1 Data Berhasil Diubah
```

- Menghapus data (delete)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Delete Data
5. Exit
====================
Pilih Menu: 4
(1, 'Angieta', 'Sragen')
(2, 'Putri', 'Solo')
(3, 'keyla', 'Ngawi')
(4, 'roni', 'bandung')
Pilih ID Tamu> 4
1 Data Berhasil Dihapus
```

❖ Kamar

```
import mysql.connector
import os
db = mysql.connector.connect(
    host='localhost',
    user='root',
    passwd='',
    database='perhotelan'
)
def insert_data(db):
    id_kamar = input('Masukkan ID Kamar: ')
    no_kamar = input('Masukkan No. Kamar: ')
    tipe_kamar = input('Masukkan Tipe Kamar: ')
    biaya_kamar = input('Harga Kamar: ')
    val = (id_kamar, no_kamar, tipe_kamar, biaya_kamar)
    cursor = db.cursor()
    sql = 'insert into kamar (id_kamar, no_kamar, tipe_kamar, biaya_kamar) values (%s, %s, %s, %s)'
    cursor.execute(sql,val)
    db.commit()
    print("{} data berhasil disimpan".format(cursor.rowcount))

def show_data(db):
    cursor = db.cursor()
    sql = 'select * from kamar'
    cursor.execute(sql)
    results = cursor.fetchall()

    if cursor.rowcount<0:
        print ('Tidak ada data')
    else:
        for data in results:
            print(data)

def update_data(db):
    cursor = db.cursor()
    show_data(db)
    id_kamar = input('Masukkan ID Kamar> ')
    no_kamar = input('Masukkan No. Kamar: ')
    tipe_kamar = input('Masukkan Tipe Kamar: ')
    biaya_kamar = input('Harga Kamar: ')
    sql = 'update kamar set no_kamar=%s, tipe_kamar=%s, biaya_kamar=%s where id_kamar=%s'
    val = (no_kamar, tipe_kamar, biaya_kamar, id_kamar)
    cursor.execute(sql,val)
    db.commit()
    print('{} data berhasil diubah'.format(cursor.rowcount))
```

```
def delete_data(db):
    cursor = db.cursor()
    show_data(db)
    id_kamar = input('Pilih ID Kamar> ')
    sql = 'delete from kamar where id_kamar=%s'
    val = (id_kamar,)
    cursor.execute(sql,val)
    db.commit()
    print('{} data berhasil dihapus'.format(cursor.rowcount))

def show_menu(db):
    print('===== Aplikasi Database Perhotelan =====')
    print('1. Tampilkan Data')
    print('2. Insert Data')
    print('3. Update Data')
    print('4. Hapus Data')
    print('5. Keluar')
    print('====================')
    menu = input('Pilih Menu: ')

    #clear screen
    os.system('clear')

    if menu == '1':
        show_data(db)
    elif menu == '2':
        insert_data(db)
    elif menu == '3':
        update_data(db)
    elif menu == '4':
        delete_data(db)
    elif menu == '5':
        exit()
    else:
        print('Menu Salah')

if __name__ == '__main__':
    while(True):
        show_menu(db)
```

- Menampilkan data (Select)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Delete Data
5. Exit
====================
Pilih Menu: 1
(1101, 101, 'Standar', 150000)
(1102, 102, 'Standar', 150000)
(2201, 201, 'Suite', 300000)
(2202, 202, 'Suite', 300000)
```

- Memasukkan data (Insert)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Delete Data
5. Exit
====================
Pilih Menu: 2
Masukkan ID Kamar: 2203
Masukkan No. Kamar: 203
Masukkan Tipe Kamar: Suite
Harga Kamar: 300000
1 Data berhasil disimpan
```

- Mengubah data (Update)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Delete Data
5. Exit
====================
Pilih Menu: 3
(1101, 101, 'Standar', 150000)
(1102, 102, 'Standar', 150000)
(2201, 201, 'Suite', 300000)
(2202, 202, 'Suite', 300000)
(2203, 203, 'Suite', 300000)
Masukkan ID Kamar> 2203
Masukkan No. Kamar: 103
Masukkan Tipe Kamar: Standar
Harga Kamar: 150000
1 Data Berhasil Diubah
```

- Menghapus data (delete)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Delete Data
5. Exit
====================
Pilih Menu: 4
(1101, 101, 'Standar', 150000)
(1102, 102, 'Standar', 150000)
(2201, 201, 'Suite', 300000)
(2202, 202, 'Suite', 300000)
(2203, 103, 'Standar', 150000)
Pilih ID Kamar> 2203
1 Data Berhasil Dihapus
```

❖ Transaksi

```
import mysql.connector
import os
db = mysql.connector.connect(
    host='localhost',
    user='root',
    passwd='',
    database='perhotelan'
)

def insert_data(db):
    id_transaksi = input('Masukkan ID Transaksi: ')
    tamu_id_tamu = input('Masukkan ID Tamu: ')
    tanggal_masuk = input('Tanggal Masuk: ')
    tanggal_keluar = input('Tanggal Keluar: ')
    jumlah = input('Total Transaksi: ')
    val = (id_transaksi, tamu_id_tamu, tanggal_masuk, tanggal_keluar, jumlah)
    cursor = db.cursor()
    sql = 'insert into transaksi (id_transaksi, tamu_id_tamu, tanggal_masuk, tanggal_keluar, jumlah) values (%s, %s, %s, %s, %s)'
    cursor.execute(sql,val)
    db.commit()
    print("{} data berhasil disimpan".format(cursor.rowcount))

def show_data(db):
    cursor = db.cursor()
    sql = 'select * from transaksi'
    cursor.execute(sql)
    results = cursor.fetchall()

    if cursor.rowcount<0:
        print ('Tidak ada data')
    else:
        for data in results:
            print(data)


def update_data(db):
    cursor = db.cursor()
    show_data(db)
    id_transaksi = input('Masukkan ID Transaksi> ')
    tamu_id_tamu = input('Masukkan ID Tamu: ')
    tanggal_masuk = input('Tanggal Masuk: ')
    tanggal_keluar = input('Tanggal Keluar: ')
    jumlah = input('Total Transaksi: ')
    sql = 'update transaksi set tamu_id_tamu=%s, tanggal_masuk=%s, tanggal_keluar=%s, jumlah=%s where id_transaksi=%s'
    val = (tamu_id_tamu, tanggal_masuk, tanggal_keluar, jumlah, id_transaksi)
    cursor.execute(sql,val)
    db.commit()
    print('{} data berhasil diubah'.format(cursor.rowcount))

def delete_data(db):
    cursor = db.cursor()
    show_data(db)
    id_transaksi = input('Pilih ID Transaksi> ')
    sql = 'delete from transaksi where id_transaksi=%s'
    val = (id_transaksi,)
    cursor.execute(sql,val)
    db.commit()
    print('{} data berhasil dihapus'.format(cursor.rowcount))
```

```
def show_menu(db):
    print('===== Aplikasi Database Perhotelan =====')
    print('1. Tampilkan Data')
    print('2. Insert Data')
    print('3. Update Data')
    print('4. Hapus Data')
    print('5. Keluar')
    print('====================')
    menu = input('Pilih Menu: ')

    #clear screen
    os.system('clear')

    if menu == '1':
        show_data(db)
    elif menu == '2':
        insert_data(db)
    elif menu == '3':
        update_data(db)
    elif menu == '4':
        delete_data(db)
    elif menu == '5':
        exit()
    else:
        print('Menu Salah')

if __name__ == '__main__':
    while(True):
        show_menu(db)
```

- Menampilkan data (Select)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Hapus Data
5. Keluar
====================
Pilih Menu: 1
(1111, 1, datetime.date(2019, 6, 17), datetime.date(2019, 6, 18), 150000)
(1112, 2, datetime.date(2019, 6, 20), datetime.date(2019, 6, 22), 300000)
(1113, 3, datetime.date(2019, 6, 25), datetime.date(2019, 6, 26), 300000)
```

- Memasukkan data (Insert)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Hapus Data
5. Keluar
====================
Pilih Menu: 2
Masukkan ID Transaksi: 1114
Masukkan ID Tamu: 4
Tanggal Masuk: 2019-6-27
Tanggal Keluar: 2019-6-28
Total Transaksi: 150000
1 data berhasil disimpan
```

- Mengubah data (Update)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Hapus Data
5. Keluar
====================
Pilih Menu: 3
(1111, 1, datetime.date(2019, 6, 17), datetime.date(2019, 6, 18), 150000)
(1112, 2, datetime.date(2019, 6, 20), datetime.date(2019, 6, 22), 300000)
(1113, 3, datetime.date(2019, 6, 25), datetime.date(2019, 6, 26), 300000)
(1114, 4, datetime.date(2019, 6, 27), datetime.date(2019, 6, 28), 150000)
Masukkan ID Transaksi> 1114
Masukkan ID Tamu: 4
Tanggal Masuk: 2019-6-27
Tanggal Keluar: 2019-6-30
Total Transaksi: 450000
1 data berhasil diubah
```

- Menghapus data (delete)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Hapus Data
5. Keluar
====================
Pilih Menu: 4
(1111, 1, datetime.date(2019, 6, 17), datetime.date(2019, 6, 18), 150000)
(1112, 2, datetime.date(2019, 6, 20), datetime.date(2019, 6, 22), 300000)
(1113, 3, datetime.date(2019, 6, 25), datetime.date(2019, 6, 26), 300000)
(1114, 4, datetime.date(2019, 6, 27), datetime.date(2019, 6, 30), 450000)
pilih ID Transaksi> 1114
1 data berhasil dihapus
```

❖ Tamu_has_kamar

```
import mysql.connector
import os

db = mysql.connector.connect(
    host='localhost',
    user='root',
    passwd='',
    database='perhotelan'
)

def insert_data(db):
    tamu_id_tamu = input('Masukkan ID Tamu: ')
    kamar_id_kamar = input('Masukkan ID Kamar: ')
    val = (tamu_id_tamu, kamar_id_kamar)
    cursor = db.cursor()
    sql = 'insert into tamu_has_kamar (tamu_id_tamu, kamar_id_kamar) values (%s, %s)'
    cursor.execute(sql,val)
    db.commit()
    print("{} data berhasil disimpan".format(cursor.rowcount))

def show_data(db):
    cursor = db.cursor()
    sql = 'select * from tamu_has_kamar'
    cursor.execute(sql)
    results = cursor.fetchall()

    if cursor.rowcount<0:
        print ('Tidak ada data')
    else:
        for data in results:
            print(data)

def update_data(db):
    cursor = db.cursor()
    show_data(db)
    tamu_id_tamu = input('Masukkan ID Tamu: ')
    kamar_id_kamar = input('Masukkan ID Kamar: ')
    sql = 'update tamu_has_kamar set kamar_id_kamar=%s where tamu_id_tamu=%s'
    val = (kamar_id_kamar, tamu_id_tamu)
    cursor.execute(sql,val)
    db.commit()
    print('{} data berhasil diubah'.format(cursor.rowcount))
```

```
def delete_data(db):
    cursor = db.cursor()
    show_data(db)
    tamu_id_tamu = input('Pilih ID Tamu> ')
    sql = 'delete from tamu_has_kamar where tamu_id_tamu=%s'
    val = (tamu_id_tamu,)
    cursor.execute(sql,val)
    db.commit()
    print('{} data berhasil dihapus'.format(cursor.rowcount))

def show_menu(db):
    print('===== Aplikasi Database Perhotelan =====')
    print('1. Tampilkan Data')
    print('2. Insert Data')
    print('3. Update Data')
    print('4. Hapus Data')
    print('5. Keluar')
    print('======================')
    menu = input('Pilih Menu: ')

    #clear screen
    os.system('clear')

    if menu == '1':
        show_data(db)
    elif menu == '2':
        insert_data(db)
    elif menu == '3':
        update_data(db)
    elif menu == '4':
        delete_data(db)
    elif menu == '5':
        exit()
    else:
        print('Menu Salah')

if __name__ == '__main__':
    while(True):
        show_menu(db)
```

- Menampilkan data (Select)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Hapus Data
5. Keluar
====================
Pilih Menu: 1
(1, 1101)
(2, 1102)
(3, 2201)
(4, 2202)
```

- Memasukkan data (Insert)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Hapus Data
5. Keluar
====================
Pilih Menu: 2
Masukkan ID Tamu: 5
Masukkan ID Kamar: 2203
1 data berhasil disimpan
```

- Mengubah data (Update)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Hapus Data
5. Keluar
====================
Pilih Menu: 3
(1, 1101)
(2, 1102)
(3, 2201)
(4, 2202)
(5, 2203)
Masukkan ID Tamu: 5
Masukkan ID Kamar: 1103
1 data berhasil diubah
```

- Menghapus data (delete)

```
===== Aplikasi Database Perhotelan =====
1. Tampilkan Data
2. Insert Data
3. Update Data
4. Hapus Data
5. Keluar
====================
Pilih Menu: 4
(1, 1101)
(2, 1102)
(3, 2201)
(4, 2202)
(5, 1103)
Pilih ID Tamu> 5
1 data berhasil dihapus
```