Laporan UAS Praktikum

Basis Data

Disusun oleh:

Cahyani wulan prameswari

1910631170170

3D Teknik Informatika

PROGRAM STUDI TEKNIK INFORMATIKA

FAKULTAS ILMU KOMPUTER

UNIVERSITAS SINGAPERBANGSA KARAWANG

2021

SOAL UAS PRAKTIKUM BASIS DATA

1. Buat basis data uas_basdat_5digitNPM yang terdiri dari:
    a. Pengguna (id*, nama, jenis_kelamin, alamat, no_telp)
    b. Barang (id*, nama_barang, harga, stok)
    c. Transaksi (id*, id_pengguna**, id_barang**, tgl_beli, jml_beli)
2. Lakukan:
    a. Isilah tabel diatas (bebas, minimal 5 data)
    b. Lakukan fungsi agregat (min. 3) pada tabel barang dan transaksi
    c. Tampilkan id, nama, id_barang, tgl_beli, jml_beli menggunakan inner join
    d. Gunakan left join untuk menampilkan nama, id_barang, jml_barang
    e. Gunakan right join untuk menampilkan nama, id_barang, jml_barang
    f. Gunakan left join untuk menampilkan nama_barang, id_user, jml_beli
    g. Gunakan right join untuk menampilkan nama_barang, id_user, jml_beli

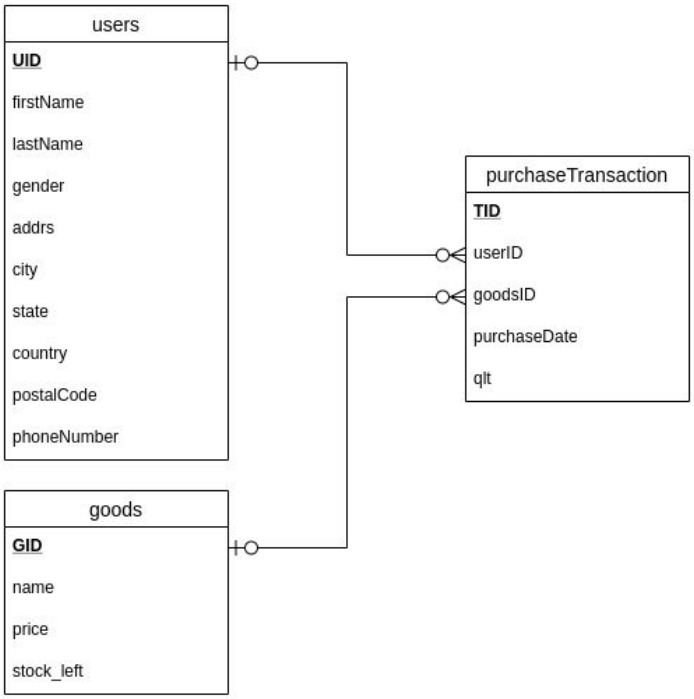
Note:
* = Primary key
** = Foreign key

1. Buat basis data uas_basdat_5digitNPM yang terdiri dari:

```
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 25
Server version: 10.4.14-MariaDB Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database uas_basdat_19170;
Query OK, 1 row affected (0.001 sec)
```

Membuat database uas_basdat_19170

Menggunakan mysql MariaDB degan fungsi (create database nama_daabase;) lalu menentukan database model menggunakan ERD dengan asumsi 1 users bisa membuat banyak purchaseTransaction dan banyak purchaseTransaction bisa dibuat oleh 1 users



Menentukan konsep database dengan skema relasi One-to-Many

a. Pengguna (id*, nama, jenis_kelamin, alamat, no_telp)

```
MariaDB [uas_basdat_19170]> create table users(
    -> UID int(3) primary key,
    -> firstName char(20),
    -> lastName char(20),
    -> gender char(1),
    -> addrs varchar(30),
    -> city char(15),
    -> state char(15),
    -> country char(10),
    -> postalCode int(10)
    -> );
Query OK, 0 rows affected (0.298 sec)
```

Membuat tabel users dengan UID sebagai primary key

b. Barang (id*, nama_barang, harga, stok)

```
MariaDB [uas_basdat_19170]> create table goods(
    -> GID int(3) primary key,
    -> name char(30),
    -> price int(7),
    -> stock_left int(3)
    -> );
Query OK, 0 rows affected (0.282 sec)
```

Membuat tabel goods dengan GID sebagai foreign key

c. Transaksi (id*, id_pengguna**, id_barang**, tgl_beli, jml_beli)

```
MariaDB [uas_basdat_19170]> create table purchaseTransaction(
    -> TID int(3) primary key,
    -> userID int(3),
    -> goodsID int(3),
    -> purchaseDate datetime,
    -> qlt int(3));
Query OK, 0 rows affected (0.393 sec)
```

Membuat tabel purchaseTransaction dengan TID sebagai primary key

```
MariaDB [uas_basdat_19170]> alter table purchaseTransaction add constraint FK_us
erID foreign key (userID) references users(UID);
Query OK, 0 rows affected (1.263 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Membuat foreign key antara purchaseTransaction.userID ke users.UID

```
MariaDB [uas_basdat_19170]> alter table purchaseTransaction add constraint FK_go
odsID foreign key (goodsID) references goods(GID);
Query OK, 0 rows affected (1.205 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Membuat foreign key antara purchaseTransaction.goodsID ke goods.GID

2. Lakukan:

a. Isilah tabel diatas (bebas, minimal 5 data)

Menggunakan metode insert from csv untuk mengisi tabel di database,berikut adalah data yang akan di masukan

	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
1	101	Joe	Castle	M	3500 browning lane	Corning	New York	USA	14830	1208556756
2	102	Oliver	Bejah	M	1109 Science center Dive	Boise	Idaho	USA	83702	1208575510
3	103	Chan	He	F	4367 Devils Hill Road	Jackson	Mississipi	USA	39211	1601843741
4	104	Yimin	Cheng	F	jl. mantap jiwa no 9 kemayoran	Jakarta	Center Jakarta	Indonesia	107415	62873337432
5	105	michael	Imam	M	jl. semangat no.3 cengkareng	Jakarta	West Jakarta	indonesia	140145	628139491823
6	106	Zahidah	Kassis	F	Discesa Gaiola,18	Filiano	Potenza	Italy	85020	339650620
7	107	Franziska	Wulf	F	Vicolo Cieco Fondachetto	Monteforte	Salerno	Italy	84060	339989982

Data untuk table users

	Standard	Standard	Standard	Standard
1	id	name	price	stock_left
2	1	Diecast car toys	170000	6
3	2	Phone E71 SUSA	9700000	3
4	3	glasses	15000	49
5	4	earphone	55000	15
6	5	tublr light	100000	32
7	6	Hand Watch	450000	5

Data untuk goods

	Standard	Standard	Standard	Standard	Standard
1	id	userID	goodsID	purchaseDate	qlt
2	11	101	2	2020-12-01 11:01:20	1
3	12	101	3	2020-12-03 23:49:30	3
4	13	101	4	2020-12-11 22:58:01	1
5	14	104	6	2020-11-29 13:30:29	1
6	15	107	5	2020-11-28 10:25:17	2

Data untuk purchaseTransaction

Menggunakan load data in file

```
LOAD DATA INFILE 'D:/practicum-Database/2.a/fixDataset_CSV/goods.csv'
INTO TABLE goods
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;
```

Insert data untuk table goods

```
MariaDB [uas_basdat_19170]> select * from goods;
+-----+--------------------+---------+------------+
| GID | name               | price   | stock_left |
+-----+--------------------+---------+------------+
|   1 | Diecast car toys   |  170000 |          6 |
|   2 | Phone E71 SUSA     | 9700000 |          3 |
|   3 | glasses            |   15000 |         49 |
|   4 | earphone           |   55000 |         15 |
|   5 | tublr light        |  100000 |         32 |
|   6 | Hand Watch         |  450000 |          5 |
+-----+--------------------+---------+------------+
6 rows in set (0.001 sec)
```

Hasil setelah data di input ke goods

```
LOAD DATA INFILE 'D:/practicum-Database/2.a/fixDataset_CSV/users.csv'
INTO TABLE users
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;
```

Insert data untuk table users

```
+---------------+
| UID | firstName | lastName | gender | addrs                          | city       | state          | country   | postalCode
| phoneNumber   |
+-----+-----------+----------+--------+--------------------------------+------------+----------------+-----------+------------
+---------------+
| 101 | Joe       | Castle   | M      | 3500 browning lane             | Corning    || New York      | USA       |      14830
| 1208556756
| 102 | Oliver    | Bejah    | M      | 1109 Science center Dive       | Boise      || Idaho         | USA       |      83702
| 1208575510
| 103 | Chan      | He       | F      | 4367 Devils Hill Road          | Jackson    || Mississipi   | USA       |      39211
| 1601843741
| 104 | Yimin     | Cheng    | F      | jl. mantap jiwa no 9 kemayoran | Jakarta    | | Center Jakarta | Indonesia |     107415
| 62873337432
| 105 | michael   | Imam     | M      | jl. semangat no.3 cengkareng   | Jakarta    |  | West Jakarta   | indonesia |     140145
| 628139491823
| 106 | Zahidah   | Kassis   | F      | Discesa Gaiola,18              | Filiano    | Potenza        | Italy     |      85020
| 339650620
| 107 | Franziska | Wulf     | F      | Vicolo Cieco Fondachetto       | Montefo    | Salerno        | Italy     |      84060
| 339989982
+-----+-----------+----------+--------+--------------------------------+------------+----------------+-----------+------------
+---------------+
7 rows in set (0.001 sec)
```

Hasil setelah data di input ke users

```
LOAD DATA INFILE 'D:/practicum-Database/2.a/fixDataset_CSV/purchaseTransaction.csv'
INTO TABLE purchaseTransaction
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;
```

Insert data untuk table purchaseTransaction

```
MariaDB [uas_basdat_19170]> select * from purchaseTransaction;
+-----+--------+---------+---------------------+------+
| TID | userID | goodsID | purchaseDate        | qlt  |
+-----+--------+---------+---------------------+------+
|  11 |    101 |       2 | 2020-12-01 11:01:20 |    1 |
|  12 |    101 |       3 | 2020-12-03 23:49:30 |    3 |
|  13 |    101 |       4 | 2020-12-11 22:58:01 |    1 |
|  14 |    104 |       6 | 2020-11-29 13:30:29 |    1 |
|  15 |    107 |       5 | 2020-11-28 10:25:17 |    2 |
+-----+--------+---------+---------------------+------+
5 rows in set (0.001 sec)
```

Hasil setelah data di input ke purchaseTransaction

b. Lakukan fungsi agregat (min. 3) pada tabel barang dan transaksi

Fungsi aggregate pada 1 tabel:

```
MariaDB [uas_basdat_19170]> select avg(qlt) as average_goods_out from
 purchaseTransaction
    -> ;
+--------------------+
| average_goods_out  |
+--------------------+
|             1.6000 |
+--------------------+
1 row in set (0.001 sec)
```

Fungsi aggregate AVG pada attribute qlt di tabel purchaseTransaction

```
MariaDB [uas_basdat_19170]> select count(TID) as NumberOfTransaction,
 userID from purchaseTransaction group by userID;
+----------------------+--------+
| NumberOfTransaction | userID |
+----------------------+--------+
|                    3 |    101 |
|                    1 |    104 |
|                    1 |    107 |
+----------------------+--------+
3 rows in set (0.001 sec)
```

Fungsi aggregate COUNT pada attribute TID di tabel purchaseTransaction

```
MariaDB [uas_basdat_19170]> select min(price) as minimal_price, name
from goods;
+---------------+------------------+
| minimal_price | name             |
+---------------+------------------+
|         15000 | Diecast car toys |
+---------------+------------------+
1 row in set (0.001 sec)
```

Fungsi aggregate MIN pada attribute price di tabel goods

Fungsi aggregate pada 2 tabel:

```
MariaDB [uas_basdat_19170]> select max(qlt) Max_goods_out, name from
purchaseTransaction join goods on goods.GID=purchaseTransaction.goods
ID;
+---------------+----------------+
| Max_goods_out | name           |
+---------------+----------------+
|             3 | Phone E71 SUSA |
+---------------+----------------+
1 row in set (0.001 sec)
```

Fungsi aggregate MAX pada attribute qlt, name di tabel purchaseTransaction dan goods

```
MariaDB [uas_basdat_19170]> select min(qlt) as Minimal_goods_out, nam
e from purchaseTransaction join goods on goods.GID=purchaseTransactio
n.goodsID
    -> ;
+------------------+---------------+
| Minimal_goods_out | name          |
+------------------+---------------+
|                 1 | Phone E71 SUSA |
+------------------+---------------+
1 row in set (0.001 sec)
```

Fungsi aggregate MIN pada attribute qlt, name di tabel purchaseTransaction dan goods

```
MariaDB [uas_basdat_19170]> select sum(price*qlt) as "Total price fro
m userID 101" from goods join purchaseTransaction on purchaseTransact
ion.goodsID=goods.GID where userID=101;
+-----------------------------+
| Total price from userID 101 |
+-----------------------------+
|                     9800000 |
+-----------------------------+
1 row in set (0.001 sec)
```

Fungsi aggregate SUM pada attribute price*qlt di tabel goods dan purchaseTransactionn

c. Tampilkan id, nama, id_barang, tgl_beli, jml_beli menggunakan inner join

```
MariaDB [uas_basdat_19170]> select UID, firstName, lastName, qlt, pur
chaseDate from users inner join purchaseTransaction on purchaseTransa
ction.userID=users.UID;
+-----+-----------+----------+------+---------------------+
| UID | firstName | lastName | qlt  | purchaseDate        |
+-----+-----------+----------+------+---------------------+
| 101 | Joe       | Castle   |    1 | 2020-12-01 11:01:20 |
| 101 | Joe       | Castle   |    3 | 2020-12-03 23:49:30 |
| 101 | Joe       | Castle   |    1 | 2020-12-11 22:58:01 |
| 104 | Yimin     | Cheng    |    1 | 2020-11-29 13:30:29 |
| 107 | Franziska | Wulf     |    2 | 2020-11-28 10:25:17 |
+-----+-----------+----------+------+---------------------+
5 rows in set (0.001 sec)
```

Inner join

d. Gunakan left join untuk menampilkan nama, id_barang, jml_barang

```
MariaDB [uas_basdat_19170]> select name,
    -> goodsID,
    -> qlt
    -> from goods left join purchaseTransaction
    -> on purchaseTransaction.goodsID=goods.GID group by name;
+------------------+---------+------+
| name             | goodsID | qlt  |
+------------------+---------+------+
| Diecast car toys |    NULL | NULL |
| earphone         |       4 |    1 |
| glasses          |       3 |    3 |
| Hand Watch       |       6 |    1 |
| Phone E71 SUSA   |       2 |    1 |
| tublr light      |       5 |    2 |
+------------------+---------+------+
6 rows in set (0.001 sec)
```

Left join

e. Gunakan right join untuk menampilkan nama, id_barang, jml_barang

```
MariaDB [uas_basdat_19170]> select name,
    -> goodsID,
    -> qlt
    -> from goods right join purchaseTransaction
    -> on purchaseTransaction.goodsID=goods.GID
    -> group by name;
+----------------+---------+------+
| name           | goodsID | qlt  |
+----------------+---------+------+
| earphone       |       4 |    1 |
| glasses        |       3 |    3 |
| Hand Watch     |       6 |    1 |
| Phone E71 SUSA |       2 |    1 |
| tublr light    |       5 |    2 |
+----------------+---------+------+
5 rows in set (0.001 sec)
```

Right join dan group by

f. Gunakan left join untuk menampilkan nama_barang, id_user, jml_beli

```
MariaDB [uas_basdat_19170]> select g.name,
    -> p.userID,
    -> p.qlt as Buy_qlt
    -> from purchaseTransaction p
    -> left join goods g
    -> on p.goodsID=g.GID;
+----------------+--------+---------+
| name           | userID | Buy_qlt |
+----------------+--------+---------+
| Phone E71 SUSA |    101 |       1 |
| glasses        |    101 |       3 |
| earphone       |    101 |       1 |
| Hand Watch     |    104 |       1 |
| tublr light    |    107 |       2 |
+----------------+--------+---------+
5 rows in set (0.001 sec)
```

Left join

g. Gunakan right join untuk menampilkan nama_barang, id_user, jml_beli

```
MariaDB [uas_basdat_19170]> select g.name,
    -> p.userID,
    -> p.qlt as Buy_qlt
    -> from purchaseTransaction p
    -> right join goods g
    -> on p.goodsID=g.GID;
+------------------+--------+---------+
| name             | userID | Buy_qlt |
+------------------+--------+---------+
| Phone E71 SUSA   |    101 |       1 |
| glasses          |    101 |       3 |
| earphone         |    101 |       1 |
| Hand Watch       |    104 |       1 |
| tublr light      |    107 |       2 |
| Diecast car toys |   NULL |    NULL |
+------------------+--------+---------+
6 rows in set (0.001 sec)
```

Right join

```
MariaDB [uas_basdat_19170]> select g.name,
    -> p.userID,
    -> p.qlt as Buy_qlt
    -> from purchaseTransaction p
    -> right join goods g
    -> on p.goodsID=g.GID group by name;
+------------------+--------+---------+
| name             | userID | Buy_qlt |
+------------------+--------+---------+
| Diecast car toys |   NULL |    NULL |
| earphone         |    101 |       1 |
| glasses          |    101 |       3 |
| Hand Watch       |    104 |       1 |
| Phone E71 SUSA   |    101 |       1 |
| tublr light      |    107 |       2 |
+------------------+--------+---------+
6 rows in set (0.002 sec)
```

Right join and group by

h. lakukan inner join dari 3 tabel(soal tambahan)

```
MariaDB [uas_basdat_19170]> select u.firstName,
    -> u.lastName,
    -> p.TID, g.name,
    -> p.qlt,
    -> g.price as Price_per_1pc
    -> from purchaseTransaction p
    -> inner join users u on u.UID=p.userID
    -> inner join goods g on g.GID=p.goodsID;
+-----------+----------+-----+----------------+------+---------------+
| firstName | lastName | TID | name           | qlt  | Price_per_1pc |
+-----------+----------+-----+----------------+------+---------------+
| Joe       | Castle   |  11 | Phone E71 SUSA |    1 |       9700000 |
| Joe       | Castle   |  12 | glasses        |    3 |         15000 |
| Joe       | Castle   |  13 | earphone       |    1 |         55000 |
| Yimin     | Cheng    |  14 | Hand Watch     |    1 |        450000 |
| Franziska | Wulf     |  15 | tublr light    |    2 |        100000 |
+-----------+----------+-----+----------------+------+---------------+
5 rows in set (0.002 sec)
```

Inner Join 3 table