**Team Members:**

|  |  |  |
| --- | --- | --- |
| **No** | **NIM** | **Name** |
| 1 | 2602124120 | IDA BAGUS SWAMBARA SUADNYANA |
| 2 | 2602076866 | ALBERTUS GIOVANNI PRASETYO |
| 3 | 2602078146 | DANIEL EBENEZER BUDIHARTO |
| 4 | 2602139362 | I MADE ANANDA MAHATRESNA |

1. **Database Planning**

|  |
| --- |
| *Database* Toko Sembako.  *Database* Toko Sembako digunakan untuk mengatur jenis barang yang ada di toko sembako tersebut, barang yang masuk (pembelian) dan barang yang keluar (penjualan). |

1. **Requirement and Analysis**

* List of Users

|  |  |
| --- | --- |
| **User** | **Description** |
| Pemilik | Pemilik adalah orang yang memiliki Toko Sembako dan mampu mengatur semua tabel. |
| Kasir | Kasir adalah orang yang bekerja di Toko Sembako dan diberi tanggung jawab untuk mengatur pembelian, penjualan, dan penambahan kustomer baru. |

* List of Functionalities

|  |  |
| --- | --- |
| **Functionality** | **Description** |
| Menambahkan Barang | Menambahkan jenis barang baru ketika ada kontrak kerja *supplier* baru. |
| Menambahkan Pembelian | Menambahkan pembelian ketika ada barang yang masuk. |
| Menambahkan Penjualan | Menambahkan penjualan ketika ada barang yang keluar. |
| Melihat Rekap Pembelian Bulanan | Melihat banyaknya barang yang sudah dibeli dalam kurun waktu satu bulan. |
| Melihat Rekap Penjualan Bulanan | Melihat banyaknya barang yang sudah dijual dalam kurun waktu satu bulan. |
| Melihat Rekap Total | Melihat banyaknya pemasukan dan pengeluaran. |
| Menambah Kustomer Baru | Menambahkan kustomer yang baru ketika membeli barang pertama kali di toko. |
| Menambah Supplier Baru | Menambahkan supplier baru ketika menjual barang pertama kali ke toko. |

* Required Data

|  |  |
| --- | --- |
| **Data** | **Description** |
| Nama Barang | Nama dari barang. |
| Satuan | Satuan dari barang berupa Kilogram atau Liter atau Buah. |
| Harga Beli Barang | Untuk mendapat 1 barang, diperlukan berapa rupiah. |
| Harga Jual Barang | Ketika menjual 1 barang, didapatkan berapa rupiah. |
| Stok | Barang yang tersisa di toko. |
| Retur | Banyaknya barang yang dikembalikan ke Supplier dan ditunggu untuk mendapat gantinya. |
| Tanggal Beli | Tanggal yang dicatat ketika ada barang yang dibeli. |
| Tanggal Jual | Tanggal yang dicatat ketika ada barang yang dijual. |
| Tanggal Registrasi Kustomer | Dicatat ketika ada kustomer baru yang terdaftar. |
| Tanggal Registrasi Supplier | Dicatat ketika ada supplier baru yang terdaftar. |
| Kuantitas Beli | Banyaknya barang yang dibeli. |
| Kuantitas Jual | Banyaknya barang yang dijual. |
| Total Beli | Didapatkan dari harga beli dikali kuantitas. |
| Total Jual | Didapatkan dari harga jual dikali kuantitas. |
| Nama Kustomer | Toko Sembako menjual barang ke Kustomer. |
| Nama Supplier | Toko Sembako membeli barang dari Supplier |

* Mapping of Functionality and User

|  |  |
| --- | --- |
| **Functionality** | **Users** |
| Menambahkan Barang | Pemilik, Kasir |
| Menambahkan Pembelian | Pemilik, Kasir |
| Menambahkan Penjualan | Pemilik, Kasir |
| Melihat Rekap Pembelian Bulanan | Pemilik |
| Melihat Rekap Penjualan Bulanan | Pemilik |
| Melihat Rekap Total | Pemilik |
| Menambah Kustomer Baru | Pemilik, Kasir |
| Menambah Supplier Baru | Pemilik, Kasir |

* Mapping of Data and User

|  |  |
| --- | --- |
| **Data** | **Users** |
| Nama Barang | Pemilik, Kasir |
| Satuan | Pemilik |
| Harga Beli Barang | Pemilik, Kasir |
| Harga Jual Barang | Pemilik, Kasir |
| Stok | Pemilik, Kasir |
| Retur | Pemilik, Kasir |
| Tanggal Beli | Pemilik, Kasir |
| Tanggal Jual | Pemilik, Kasir |
| Tanggal Registrasi Kustomer | Pemilik, Kasir |
| Tanggal Registrasi Supplier | Pemilik, Kasir |
| Kuantitas Beli | Pemilik, Kasir |
| Kuantitas Jual | Pemilik, Kasir |
| Total Beli | Pemilik, Kasir |
| Total Jual | Pemilik, Kasir |
| Nama Kustomer | Pemilik, Kasir |
| Nama Supplier | Pemilik, Kasir |

1. **Database Model**
2. **Conceptual Model**

* List of Entities

|  |  |
| --- | --- |
| **Entity Name** | **Description** |
| bar | Entitas dari barang mencakup nama, satuan, dll. |
| buku\_beli | Entitas dari pembelian yang dilakukan Toko Sembako dari supplier mencakup tanggal beli, supplier, barang yang dibeli, dll. |
| buku\_jual | Entitas dari penjualan yang dilakukan Toko Sembako ke kustomer mencakup tanggal jual, kustomer, barang yang dijual, dll. |
| cust | Entitas dari kustomer yang melakukan penjualan dari *point of view* Toko Sembako. |
| supp | Entitas dari supplier yang melakukan pembelian dari *point of view* Toko Sembako. |

* Relationships

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Entity Name** | **Cardinality** | **Relationship Name** | **Participant** | **Entity Name** |
| bar | many-to-many | dikurangi | partial | cust |
| bar | many-to-many | ditambah | total | supp |
| buku\_beli | one-to-many | barang\_masuk | partial | supp |
| buku\_jual | one-to-many | barang\_keluar | total | cust |
| buku\_beli | many-to-one | produk\_beli | total | bar |
| buku\_jual | many-to-one | produk\_jual | total | bar |

* List of Attributes

Entity Name: bar

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute** | **Description** | **Type** | **Length** | **Multi Value [Y, N]** | **Null [Y, N]** |
| kode\_bar | Mulai dari C001, C002, C003, dst. Primary Key. | CHAR | 4 | N | N |
| nama\_bar | Nama dari suatu barang. | VARCHAR | 100 | N | N |
| satuan | Terdiri dari kg, L, bungkus, dan buah. | ENUM | - | N | N |
| hrg\_beli | Berapa rupiah yang harus dikeluarkan untuk mendapat barang itu dari supplier. | INT | - | N | N |
| hrg\_jual | Berapa rupiah yang didapat ketika barang diberikan ke customer. Selalu bernilai 1,3x harga beli. | INT | - | N | N |
| stok | jumlah barang yang ada di toko sekarang | INT | - | N | N |
| retur | jumlah barang yang dikembalikan kepada supplier | INT | - | N | N |

Entity Name: buku\_beli

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute** | **Description** | **Type** | **Length** | **Multi Value [Y, N]** | **Null [Y, N]** |
| kode\_beli | Mulai dari S001, S002, S003, dst. Primary Key. | CHAR | 4 | N | N |
| tgl\_beli | Tanggal pembelian dilakukan. | DATE | - | N | N |
| k\_supp | Kode supplier yang memasok. Foreign Key. | CHAR | 4 | N | N |
| k\_bar | Kode barang yang dibeli. Foreign Key. Primary Key. | CHAR | 4 | N | N |
| qty\_b | Banyaknya barang yang dibeli. | INT | - | N | N |
| total\_b | Hasil kali dari qty\_b dengan harga\_beli di tabel bar. | INT | - | N | N |
| retur | Banyaknya barang yang diretur. | INT | - | N | N |

Entity Name: buku\_jual

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute** | **Description** | **Type** | **Length** | **Multi Value [Y, N]** | **Null [Y, N]** |
| kode\_jual | Mulai dari J001, J002, J003, dst. | CHAR | 4 | N | N |
| tgl\_j | Tanggal penjualan dilakukan | DATE | - | N | N |
| k\_cust | Kode kustomer yang membeli barang. Foreign Key. Primary Key. | CHAR | 4 | N | N |
| k\_bar | Kode barang yang dijual. Foreign Key. Primary Key. | CHAR | 4 | N | N |
| qty\_j | Banyaknya barang yang dijual. | INT | - | N | N |
| total\_j | Hasil kali dari qty\_j dengan harga\_jual di tabel bar. | INT | - | N | N |
| hutang | Berapa rupiah customer ini melakukan hutang untuk transaksi ini. | INT | - | N | N |

Entity Name: cust

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute** | **Description** | **Type** | **Length** | **Multi Value [Y, N]** | **Null [Y, N]** |
| kode\_cust | Dimulai dari K001, K002, K003, dst. Primary Key. | CHAR | 4 | N | N |
| nama\_cust | Nama dari customer yang melakukan pembelian. | VARCHAR | 100 | N | N |
| tg\_reg\_cust | Tanggal customer pertama kali melakukan pembelian. | DATE | - | N | N |
| hutang | Berapa rupiah hutang kustomer. | INT | - | N | N |

Entity Name: supp

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute** | **Description** | **Type** | **Length** | **Multi Value [Y, N]** | **Null [Y, N]** |
| kode\_supp | Dimulai dari P001, P002, P003, dst. Primary Key. | CHAR | 4 | N | N |
| nama\_supp | Nama dari supplier yang melakukan pemasokan. | VARCHAR | 100 | N | N |
| tg\_reg\_supp | Tanggal supplier pertama kali melakukan pemasokan. | DATE | - | N | N |

* List of Constraints
  1. form\_k\_bar: kode\_bar dimulai dengan C lalu diikuti dengan 3 digit angka yang dimulai dari 001, 002, dst.
  2. form\_k\_beli: kode\_beli dimulai dengan S lalu diikuti dengan 3 digit angka yang dimulai dari 001, 002, dst.
  3. form\_k\_jual: kode\_jual dimulai dengan J lalu diikusi dengan 3 digit angka yang dimulai dari 001, 002, dst.
  4. form\_k\_cust: kode\_cust dimulai dengan K lalu diikuti dengan 3 digit angka yang dimulai dari 001, 002, dst.
  5. form\_k\_supp: kode\_supp dimulai dengan P lalu diikuti dengan 3 digit angka yang dimulai dari 001, 002, dst.
  6. sl\_untung: hrg\_jual selalu bernilai 1,3x hrg\_beli.
  7. const\_sat\_enum: satuan hanya bisa antara kg, atau L, atau bungkus, atau buah.
  8. max\_retur: retur tidak boleh lebih dari 15.

1. **Logical Model**

* Functional Dependency

**Tabel bar**  
kode\_bar -> nama\_bar, satuan, hrg\_beli, hrg\_jual, stok, retur

**Tabel buku\_beli**

kode\_beli, k\_bar -> tgl\_b, k\_supp, qty\_b, total\_b, retur

**Tabel buku\_jual**  
kode\_jual, k\_bar-> tgl\_j, k\_cust, qty\_j, total\_j, hutang

**Tabel cust**

kode\_cust -> nama\_cust, tg\_reg\_cust, hutang

**Tabel supp**

kode\_supp -> nama\_supp, tg\_reg\_supp

* UNF

Tabel Pembelian

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| kode\_bar | nama\_bar | satuan | hrg\_beli | stok | retur | kode\_beli | tgl\_b | k\_supp | nama\_supp | tg\_reg\_supp | qty\_b | total\_b |
| C001 | Beras Premium | kg | 11000 | 100 | 0 | S001 | 2023-06-01 | P001 | Supplier Beras | 2023-01-01 | 10 | 143000 |
| C002 | Gula Pasir | kg | 12000 | 80 | 0 | S002 | 2023-06-02 | P002 | Supplier Gula | 2023-01-02 | 15 | 234000 |
| C003 | Minyak Goreng | L | 14000 | 150 | 0 | S003 | 2023-06-03 | P003 | Supplier Minya | 2023-01-03 | 20 | 364000 |
| C004 | Mie Instan | bungkus | 2200 | 200 | 0 | S004 | 2023-006-04 | P004 | Supplier Mie | 2023-01-04 | 25 | 71500 |
| C005 | Telur Ayam | buah | 2000 | 200 | 0 | S005 | 2023-06-05 | P005 | Supplier Telur | 2023-01-05 | 30 | 7800 |

Tabel Penjualan

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| kode\_bar | nama\_bar | satuan | hrg\_jual | stok | kode\_jual | tgl\_j | k\_cust | nama\_cust | tg\_reg\_cust | hutang | qty\_j | total\_j |
| C001 | Beras Premium | kg | 14300 | 100 | J001 | 2023-06-10 | K001 | Andi Setiawan | 2023-01-01 | 0 | 5 | 71500 |
| C002 | Gula Pasir | kg | 15600 | 80 | J002 | 2023-06-11 | K002 | Rina Kumala | 2023-01-02 | 0 | 10 | 156000 |
| C003 | Minyak goreng | L | 18200 | 150 | J003 | 2023-06-12 | K003 | Budi Santoso | 2023-01-03 | 0 | 8 | 145600 |
| C004 | Mie Instan | bungkus | 2860 | 200 | J004 | 2023-06-13 | K004 | Siri Nurhaliza | 2023-01-04 | 0 | 20 | 57200 |
| C005 | Terlu Ayam | buah | 2600 | 200 | J005 | 2023-06-14 | K005 | Dewi Ayu | 2023-01-05 | 0 | 50 | 130000 |

* 1NF

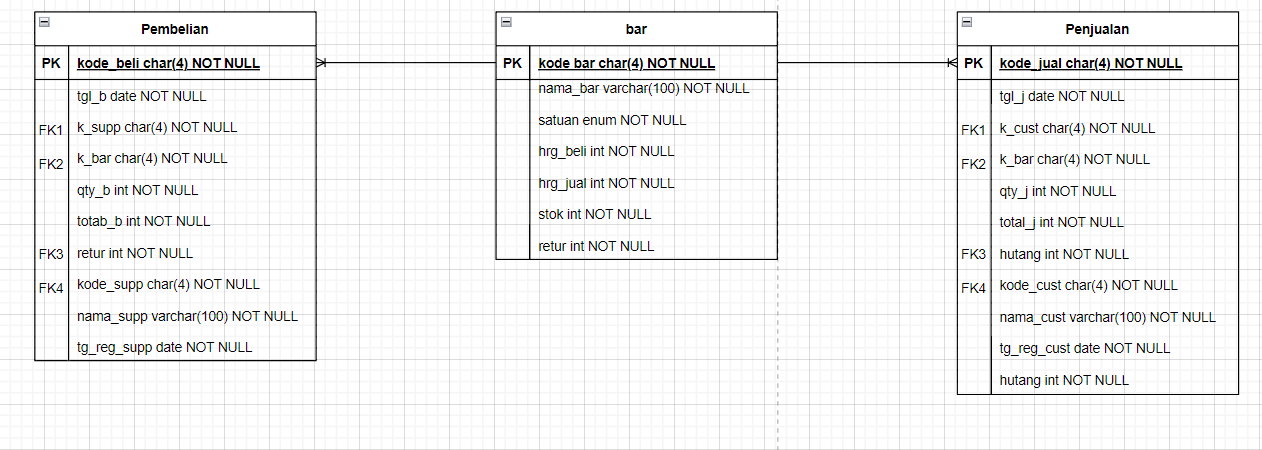
Tabel Pembelian

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| kode\_bar | nama\_bar | satuan | hrg\_beli | stok | retur | kode\_beli | tgl\_b | k\_supp | nama\_supp | tg\_reg\_supp | qty\_b | total\_b |
| C001 | Beras Premium | kg | 11000 | 100 | 0 | S001 | 2023-06-01 | P001 | Supplier Beras | 2023-01-01 | 10 | 143000 |
| C002 | Gula Pasir | kg | 12000 | 80 | 0 | S002 | 2023-06-02 | P002 | Supplier Gula | 2023-01-02 | 15 | 234000 |
| C003 | Minyak Goreng | L | 14000 | 150 | 0 | S003 | 2023-06-03 | P003 | Supplier Minya | 2023-01-03 | 20 | 364000 |
| C004 | Mie Instan | bungkus | 2200 | 200 | 0 | S004 | 2023-006-04 | P004 | Supplier Mie | 2023-01-04 | 25 | 71500 |

Tabel Penjualan

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| kode\_bar | nama\_bar | satuan | hrg\_jual | stok | kode\_jual | tgl\_j | k\_cust | nama\_cust | tg\_reg\_cust | hutang | qty\_j | total\_j |
| C001 | Beras Premium | kg | 14300 | 100 | J001 | 2023-06-10 | K001 | Andi Setiawan | 2023-01-01 | 0 | 5 | 71500 |
| C002 | Gula Pasir | kg | 15600 | 80 | J002 | 2023-06-11 | K002 | Rina Kumala | 2023-01-02 | 0 | 10 | 156000 |
| C003 | Minyak goreng | L | 18200 | 150 | J003 | 2023-06-12 | K003 | Budi Santoso | 2023-01-03 | 0 | 8 | 145600 |
| C004 | Mie Instan | bungkus | 2860 | 200 | J004 | 2023-06-13 | K004 | Siri Nurhaliza | 2023-01-04 | 0 | 20 | 57200 |
| C005 | Terlu Ayam | buah | 2600 | 200 | J005 | 2023-06-14 | K005 | Dewi Ayu | 2023-01-05 | 0 | 50 | 130000 |

* 2NF



Tabel barang

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| kode\_bar | nama\_bar | satuan | hrg\_beli | hrg\_jual | stok | retur |
| C001 | Beras Premium | kg | 11000 | 14300 | 100 | 0 |
| C002 | Gula Pasir | kg | 12000 | 15600 | 80 | 0 |
| C003 | Minyak Goreng | L | 14000 | 18200 | 150 | 0 |
| C004 | Mie Instan | bungkus | 2200 | 2860 | 200 | 0 |
| C005 | Telur Ayam | buah | 2000 | 2600 | 200 | 0 |

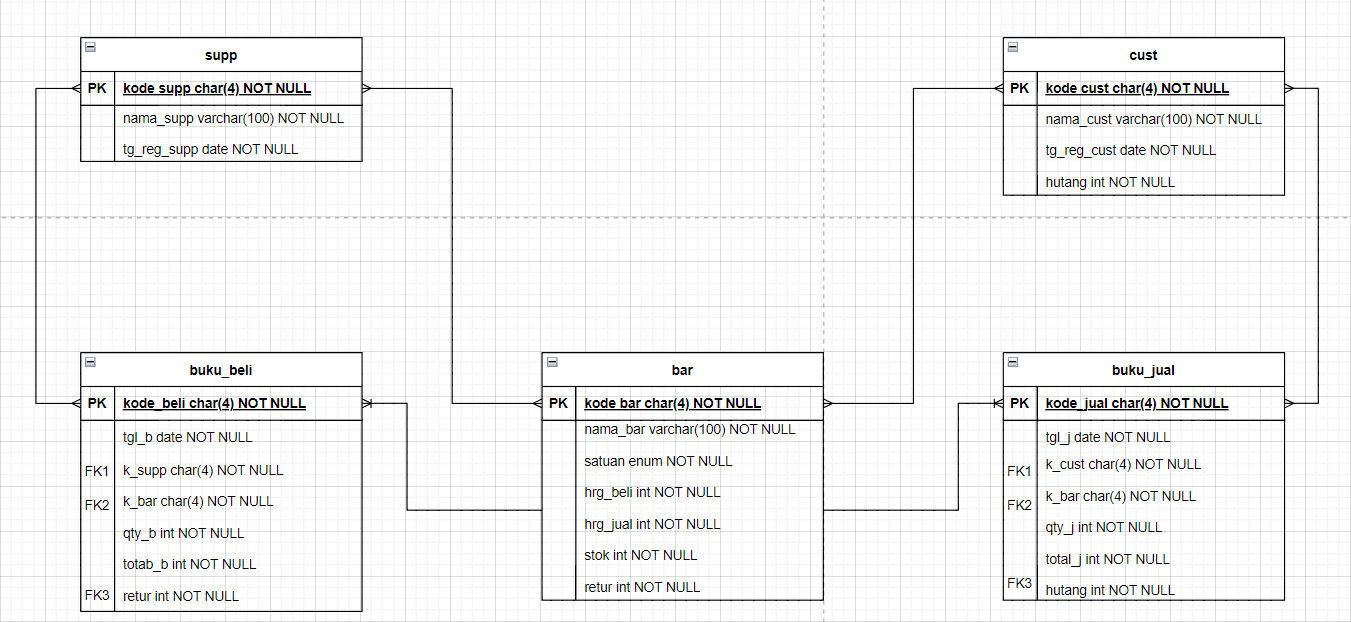
Tabel Pembelian

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| kode\_beli | tgl\_b | k\_supp | k\_bar | qty\_b | total\_b | retur | nama\_supp | tg\_reg\_supp |
| S001 | 2023-06-01 | P001 | C001 | 10 | 143000 | 0 | Supplier Beras | 2023-06-01 |
| S002 | 2023-06-02 | P002 | C002 | 15 | 234000 | 0 | Supplier Gula | 2023-06-02 |
| S003 | 2023-06-03 | P003 | C003 | 20 | 360000 | 0 | Supplier Minyak | 2023-06-13 |
| S004 | 2023-06-04 | P004 | C004 | 25 | 71500 | 0 | Supplier Mie | 2023-06-04 |
| S005 | 2023-06-05 | P005 | C005 | 30 | 78000 | 0 | Supplier Telur | 2023-06-05 |

Tabel Penjualan

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| kode\_jual | tgl\_j | k\_cust | k\_bar | qty\_j | total\_j | nama\_cust | tg\_reg\_cust | hutang |
| J001 | 2023-06-10 | K001 | C001 | 5 | 71500 | Andi Setiawan | 2023-01-01 | 0 |
| J002 | 2023-06-11 | K002 | C002 | 10 | 156000 | Rina Kumala | 2023-02-01 | 0 |
| J003 | 2023-06-12 | K003 | C003 | 8 | 145600 | Budi Santoso | 2023-03-01 | 0 |
| J004 | 2023-06-13 | K004 | C004 | 20 | 57200 | Siti Nurhaliza | 2023-04-01 | 0 |
| J005 | 2023-06-14 | K005 | C005 | 50 | 130000 | Dewi Ayu | 2023-05-01 | 0 |

* 3NF



Tabel Barang

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| kode\_bar | nama\_bar | satuan | hrg\_beli | hrg\_jual | stok | retur |
| C001 | Beras Premium | KG | 11.000 | 14.300 | 100 | 0 |
| C002 | Gula Pasir | KG | 12.000 | 15.600 | 80 | 0 |
| C003 | Minyak Goreng | L | 14.000 | 18.200 | 150 | 0 |
| C004 | Mie Instan | Bungkus | 2200 | 2860 | 200 | 0 |
| C005 | Telur Ayam | Buah | 2000 | 2600 | 200 | 0 |

Tabel Buku Beli

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| kode\_beli | tgl\_b | k\_supp | k\_bar | qty\_b | total\_b | retur |
| S001 | 2023-06-01 | P001 | C001 | 10 | 143.000 | 0 |
| S002 | 2023-06-02 | P002 | C002 | 15 | 234.000 | 0 |
| S003 | 2023-06-03 | P003 | C003 | 20 | 364.000 | 0 |
| S004 | 2023-06-04 | P004 | C004 | 25 | 71.500 | 0 |
| S005 | 2023-06-05 | P005 | C005 | 30 | 78.000 | 0 |

Tabel Buku Jual

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| kode\_jual | tgl\_j | k\_cust | k\_bar | qty\_j | total\_j | hutang |
| J001 | 2023-06-10 | K001 | C001 | 5 | 71.500 | 0 |
| J002 | 2023-06-11 | K002 | C002 | 10 | 156.000 | 0 |
| J003 | 2023-06-12 | K003 | C003 | 8 | 145.600 | 0 |
| J004 | 2023-06-13 | K004 | C004 | 20 | 57.200 | 0 |
| J005 | 2023-06-14 | K005 | C005 | 50 | 130.000 | 0 |

Tabel Supplier

|  |  |  |
| --- | --- | --- |
| kode\_supp | nama\_supp | tg\_reg\_supp |
| P001 | Supplier Beras | 2023-01-01 |
| P002 | Supplier Gula | 2023-01-02 |
| P003 | Supplier Minyak | 2023-01-03 |
| P004 | Supplier Mie | 2023-01-04 |
| P005 | Supplier Telor | 2023-01-05 |

Tabel Customer

|  |  |  |  |
| --- | --- | --- | --- |
| kode\_cust | nama\_cust | tg\_reg\_cust | hutang |
| K001 | Andi Setiawan | 2023-01-01 | 0 |
| K002 | Rina Kumala | 2023-02-01 | 0 |
| K003 | Budi Santoso | 2023-03-01 | 0 |
| K004 | Siti Nurhaliza | 2023-04-01 | 0 |
| K005 | Dewi Ayu | 2023-05-01 | 0 |

* BCNF

<BCNF analysis and result through ERD model>

1. **Physical Model**

* View

bar\_now()

htg\_cust()

bar\_retur()

bar\_retur\_supp()

* Stored Procedure

add\_new\_bar(nama\_bar, satuan, hrg\_beli)

rkp\_beli\_bln\_x(bulan x)  
rkp\_jual\_bln\_x(bulan x)

rkp\_total\_bln\_x(bulan x)

beli\_br\_y\_retur(k\_supp, k\_bar, hrg\_beli, qty\_b, retur)

beli\_br\_n\_retur(k\_supp, k\_bar, hrg\_beli, qty\_b)

jual\_br\_y\_htg(kode\_cust, kode\_bar, qty\_jual, jml\_brg\_htg)

jual\_br\_n\_htg(kode\_cust, kode\_bar, qty\_jual)

1. **Appendix**

- Queries  
<https://docs.google.com/document/d/1iItaGTZuXH_GLURVOwwxy3Sz18Ijm33Eg3R8PzUJ0e4/edit?usp=sharing>   
CREATE TABLE bar(

kode\_bar CHAR(4) NOT NULL PRIMARY KEY CHECK (kode\_bar REGEXP '^C[0-9][0-9][0-9]$'),

nama\_bar VARCHAR(100) NOT NULL,

satuan ENUM('kg', 'L', 'bungkus', 'buah') NOT NULL,

harga\_beli INT NOT NULL,

harga\_jual INT NOT NULL DEFAULT (harga\_beli \* 1.3),

stok INT NOT NULL,

retur INT NOT NULL CHECK (retur <= 15)

);

CREATE TABLE supp(

kode\_supp CHAR(4) NOT NULL PRIMARY KEY CHECK (kode\_supp REGEXP '^P[0-9][0-9][0-9]$'),

nama\_supp VARCHAR(100) NOT NULL,

tg\_reg\_supp DATE NOT NULL

);

CREATE TABLE cust(

kode\_cust CHAR(4) NOT NULL PRIMARY KEY CHECK (kode\_cust REGEXP '^K[0-9][0-9][0-9]$'),

nama\_cust VARCHAR(100) NOT NULL,

tg\_reg\_cust DATE NOT NULL,

hutang INT NOT NULL CHECK (hutang<=450000)

);

4. CREATE TABLE buku\_beli(

kode\_beli CHAR(4) NOT NULL CHECK (kode\_beli REGEXP '^S[0-9][0-9][0-9]$'),

tgl\_b DATE NOT NULL,

k\_supp CHAR(4) NOT NULL,

FOREIGN KEY(k\_supp) REFERENCES supp(kode\_supp)

ON UPDATE CASCADE

ON DELETE CASCADE,

k\_bar CHAR(4) NOT NULL,

FOREIGN KEY(k\_bar) REFERENCES bar(kode\_bar)

ON UPDATE CASCADE

ON DELETE CASCADE,

PRIMARY KEY(kode\_beli, k\_bar),

qty\_b INT NOT NULL,

total\_b INT NOT NULL,

retur INT NOT NULL

);

CREATE TABLE buku\_jual(

kode\_jual CHAR(4) NOT NULL CHECK (kode\_jual REGEXP '^J[0-9][0-9][0-9]$'),

tgl\_j DATE NOT NULL,

k\_cust CHAR(4) NOT NULL,

FOREIGN KEY(k\_cust) REFERENCES cust(kode\_cust)

ON UPDATE CASCADE

ON DELETE CASCADE,

k\_bar CHAR(4) NOT NULL,

FOREIGN KEY(k\_barang) REFERENCES bar(kode\_bar)

ON UPDATE CASCADE

ON DELETE CASCADE,

PRIMARY KEY(kode\_jual, k\_barang),

qty\_j INT NOT NULL,

total\_j INT NOT NULL,

hutang INT NOT NULL

);

INSERT INTO bar (kode\_bar, nama\_bar, satuan, harga\_beli, harga\_jual, stok, retur)

VALUES

('C001', 'Beras Premium', 'kg', 11000, 14300, 100, 0),

('C002', 'Gula Pasir', 'kg', 12000, 15600, 80, 0),

('C003', 'Minyak Goreng', 'L', 14000, 18200, 150, 0),

('C004', 'Mie Instan', 'bungkus', 2200, 2860, 200, 0),

('C005', 'Telur Ayam', 'buah', 2000, 2600, 200, 0);

INSERT INTO supp (kode\_supp, nama\_supp, tg\_reg\_supp)

VALUES

('P001', 'Supplier Beras', '2023-01-01'),

('P002', 'Supplier Gula', '2023-01-02'),

('P003', 'Supplier Minyak', '2023-01-03'),

('P004', 'Supplier Mie', '2023-01-04'),

('P005', 'Supplier Telur', '2023-01-05');

INSERT INTO cust (kode\_cust, nama\_cust, tg\_reg\_cust, hutang)

VALUES

('K001', 'Andi Setiawan', '2023-01-01', 0),

('K002', 'Rina Kumala', '2023-02-01', 0),

('K003', 'Budi Santoso', '2023-03-01', 0),

('K004', 'Siti Nurhaliza', '2023-04-01', 0),

('K005', 'Dewi Ayu', '2023-05-01', 0);

INSERT INTO buku\_beli (kode\_beli, tgl\_beli, k\_supp, k\_barang, qty\_barang, total\_barang, retur)

VALUES

('S001', '2023-06-01', 'P001', 'C001', 10, 143000, 0),

('S002', '2023-06-02', 'P002', 'C002', 15, 234000, 0),

('S003', '2023-06-03', 'P003', 'C003', 20, 364000, 0),

('S004', '2023-06-04', 'P004', 'C004', 25, 71500, 0),

('S005', '2023-06-05', 'P005', 'C005', 30, 78000, 0);

INSERT INTO buku\_jual (kode\_jual, tgl\_jual, k\_cust, k\_barang, qty\_jual, total\_jual, hutang)

VALUES

('J001', '2023-06-10', 'K001', 'C001', 5, 71500, 0),

('J002', '2023-06-11', 'K002', 'C002', 10, 156000, 0),

('J003', '2023-06-12', 'K003', 'C003', 8, 145600, 0),

('J004', '2023-06-13', 'K004', 'C004', 20, 57200, 0),

('J005', '2023-06-14', 'K005', 'C005', 50, 130000, 0);

CREATE VIEW bar\_now AS

SELECT kode\_bar AS 'Kode Barang',

nama\_bar as 'Nama Barang',

satuan as 'Satuan',

harga\_beli AS 'Harga Beli',

harga\_jual AS 'Harga Jual',

stok as 'Stok',

retur as 'Retur'

from bar;

create view htg\_cust AS

select kode\_cust as 'Kode Kustomer',

nama\_cust as 'Nama Kustomer',

tg\_reg\_cust as 'Tanggal Registrasi Kustomer',

hutang as 'Hutang'

from cust

where hutang > 0;

create view bar\_retur AS

select kode\_bar as 'Kode Barang',

nama\_bar as 'Nama Barang',

stok as 'Stok',

retur as 'Retur'

from bar

where retur > 0;

create view bar\_retur\_supp AS

select bb.kode\_beli as 'Kode Beli',

bb.tgl\_b AS 'Tanggal Beli',

bb.k\_supp as 'Kode Supplier',

bb.k\_bar AS 'Kode Barang',

bb.retur AS 'Jumlah Retur'

from buku\_beli AS bb

JOIN supp AS s ON s.kode\_supp = bb.k\_supp

JOIN bar as b on b.kode\_bar = bb.k\_bar

where bb.retur > 0

GROUP BY bb.kode\_beli, bb.k\_bar, bb.k\_supp

ORDER BY bb.tgl\_b ASC;

DELIMITER //

CREATE PROCEDURE add\_new\_bar(IN nama\_bar VARCHAR(100), IN satuan ENUM('kg','L','bungkus','buah'), IN hrg\_beli INT)

BEGIN

DECLARE new\_kode\_bar CHAR(4);

DECLARE max\_kode\_bar INT;

SELECT CONVERT(SUBSTRING(MAX(kode\_bar), 2, 3), INT) + 1 INTO max\_kode\_bar FROM bar;

IF ISNULL(max\_kode\_bar) THEN

SET new\_kode\_bar = 'C001';

ELSE

SET new\_kode\_bar = CONCAT('C', LPAD(max\_kode\_bar, 3, '0'));

END IF;

INSERT INTO bar (kode\_bar, nama\_bar, satuan, harga\_beli, harga\_jual, stok, retur) VALUES (new\_kode\_bar, nama\_bar, satuan, hrg\_beli, hrg\_beli \* 1.3, 0, 0);

END //

DELIMITER ;

call add\_new\_bar('Tepung Terigu', 'kg', 10000);

DELIMITER //

CREATE PROCEDURE beli\_br\_y\_retur(

IN k\_supp CHAR(4),

IN k\_bar CHAR(4),

IN hrg\_beli INT,

IN qty\_b INT,

IN retur INT

)

BEGIN

DECLARE max\_kode\_beli INT;

DECLARE new\_kode\_beli CHAR(4);

SELECT CONVERT(SUBSTRING(MAX(kode\_beli), 2, 3), INT) + 1 INTO max\_kode\_beli FROM buku\_beli;

IF ISNULL(max\_kode\_beli) THEN

SET new\_kode\_beli = 'S001';

ELSE

SET new\_kode\_beli = CONCAT('S', LPAD(max\_kode\_beli, 3, '0')); -- With comma here

END IF;

UPDATE bar br

SET br.harga\_beli = hrg\_beli, br.harga\_jual = hrg\_beli \* 1.3, br.retur = br.retur + retur, br.stok = br.stok + (qty\_b - retur)

WHERE br.kode\_bar = k\_bar;

INSERT INTO buku\_beli (kode\_beli, tgl\_b, k\_supp, k\_bar, qty\_b, total\_b, retur)

VALUES (new\_kode\_beli, CURRENT\_DATE, k\_supp, k\_bar, qty\_b, hrg\_beli \* qty\_b, retur);

END //

DELIMITER ;

CALL beli\_br\_y\_retur('P004', 'C004', 2300, 15, 5);

CALL beli\_br\_y\_retur('P004', 'C004', 2300, 15, 5);

DELIMITER //

CREATE PROCEDURE beli\_br\_n\_retur(

IN k\_supp CHAR(4),

IN k\_bar CHAR(4),

IN hrg\_beli INT,

IN qty\_b INT

)

BEGIN

DECLARE max\_kode\_beli INT;

DECLARE new\_kode\_beli CHAR(4);

DECLARE total\_cost DECIMAL(10,2); -- Add variable for total cost

SELECT CONVERT(SUBSTRING(MAX(kode\_beli), 2, 3), INT) + 1 INTO max\_kode\_beli FROM buku\_beli;

IF ISNULL(max\_kode\_beli) THEN

SET new\_kode\_beli = 'S001';

ELSE

SET new\_kode\_beli = CONCAT('S', LPAD(max\_kode\_beli, 3, '0'));

END IF;

SET total\_cost = hrg\_beli \* qty\_b; -- Calculate total cost once

UPDATE bar br

SET br.harga\_beli = hrg\_beli, br.harga\_jual = hrg\_beli \* 1.3, br.stok = br.stok + qty\_b

WHERE br.kode\_bar = k\_bar;

INSERT INTO buku\_beli (kode\_beli, tgl\_b, k\_supp, k\_bar, qty\_b, total\_b, retur)

VALUES (new\_kode\_beli, CURRENT\_DATE, k\_supp, k\_bar, qty\_b, total\_cost, 0);

END //

DELIMITER ;

DELIMITER //

CREATE PROCEDURE jual\_br\_y\_htg(

IN kode\_cust CHAR(4),

IN kode\_bar CHAR(4),

IN qty\_jual INT,

IN jml\_brg\_htg INT

)

BEGIN

DECLARE max\_kode\_jual INT;

DECLARE new\_kode\_jual CHAR(4);

DECLARE harga\_jual INT;

SELECT CONVERT(SUBSTRING(MAX(kode\_jual), 2, 3), SIGNED) + 1 INTO max\_kode\_jual FROM buku\_jual;

SELECT br.harga\_jual INTO harga\_jual

FROM bar br

WHERE br.kode\_bar = kode\_bar;

IF max\_kode\_jual IS NULL THEN

SET new\_kode\_jual = 'J001';

ELSE

SET new\_kode\_jual = CONCAT('J', LPAD(max\_kode\_jual, 3, '0'));

END IF;

UPDATE bar br

SET br.stok = br.stok - qty\_jual

WHERE br.kode\_bar = kode\_bar;

UPDATE cust cs

SET cs.hutang = cs.hutang + jml\_brg\_htg \* harga\_jual

WHERE cs.kode\_cust = kode\_cust;

INSERT INTO buku\_jual (kode\_jual, tgl\_j, k\_cust, k\_bar, qty\_j, total\_j, hutang)

VALUES (new\_kode\_jual, CURRENT\_DATE, kode\_cust, kode\_bar, qty\_jual, qty\_jual \* harga\_jual, jml\_brg\_htg \* harga\_jual);

END //

DELIMITER ;

DELIMITER //

CREATE PROCEDURE jual\_br\_n\_htg(

IN kode\_cust CHAR(4),

IN kode\_bar CHAR(4),

IN qty\_jual INT

)

BEGIN

DECLARE max\_kode\_jual INT;

DECLARE new\_kode\_jual CHAR(4);

DECLARE harga\_jual INT;

SELECT CONVERT(SUBSTRING(MAX(kode\_jual), 2, 3), INT) + 1 INTO max\_kode\_jual FROM buku\_jual;

SELECT br.harga\_jual INTO harga\_jual

FROM bar br

WHERE br.kode\_bar = kode\_bar;

IF ISNULL(max\_kode\_jual) THEN

SET new\_kode\_jual = 'J001';

ELSE

SET new\_kode\_jual = CONCAT('J', LPAD(max\_kode\_jual, 3, '0'));

END IF;

UPDATE bar br

SET br.stok = br.stok - qty\_jual

WHERE br.kode\_bar = kode\_bar;

INSERT INTO buku\_jual (kode\_jual, tgl\_j, k\_cust, k\_bar, qty\_j, total\_j, hutang)

VALUES (new\_kode\_jual, CURRENT\_DATE, kode\_cust, kode\_bar, qty\_jual, qty\_jual \* harga\_jual, 0);

END //

DELIMITER ;

DELIMITER //

CREATE PROCEDURE rekap\_beli\_bulanan(IN bulan INT)

BEGIN

SELECT bb.kode\_beli, bb.tgl\_b, bb.qty\_b, bb.total\_b, s.nama\_supp, b.nama\_bar

FROM buku\_beli AS bb

JOIN supp AS s ON bb.k\_supp = s.kode\_supp

JOIN bar AS b ON bb.k\_bar = b.kode\_bar

WHERE MONTH(bb.tgl\_b) = bulan;

END //

DELIMITER ;

DELIMITER //

CREATE PROCEDURE rekap\_jual\_bulanan(IN bulan INT)

BEGIN

SELECT

MONTH(bj.tgl\_j) AS Bulan,

YEAR(bj.tgl\_j) AS Tahun,

b.nama\_bar AS Nama\_Barang,

SUM(bj.qty\_j) AS Jumlah\_Penjualan,

SUM(bj.total\_j) AS Total\_Penjualan

FROM

buku\_jual AS bj

JOIN

bar AS b ON bj.k\_bar = b.kode\_bar

WHERE

MONTH(bj.tgl\_j) = bulan

GROUP BY

MONTH(bj.tgl\_j), bj.k\_bar;

END //

DELIMITER ;

DELIMITER //

CREATE PROCEDURE rekap\_total(IN bulan INT)

BEGIN

DECLARE tgl\_awal DATE;

DECLARE tgl\_akhir DATE;

SET tgl\_awal = CONCAT(YEAR(CURDATE()), '-', LPAD(bulan, 2, '0'), '-01');

SET tgl\_akhir = LAST\_DAY(tgl\_awal);

SELECT

SUM(CASE WHEN MONTH(bb.tgl\_b) = bulan THEN bb.total\_b ELSE 0 END) AS total\_pembelian,

SUM(CASE WHEN MONTH(bj.tgl\_j) = bulan THEN bj.total\_j ELSE 0 END) AS total\_penjualan

FROM

buku\_beli AS bb

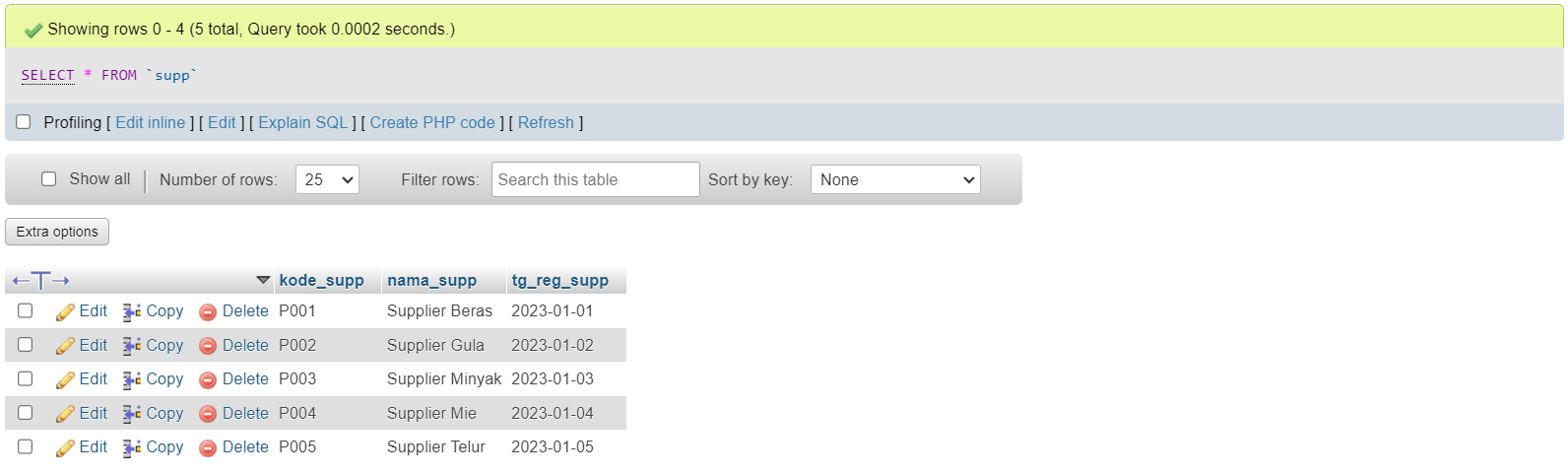
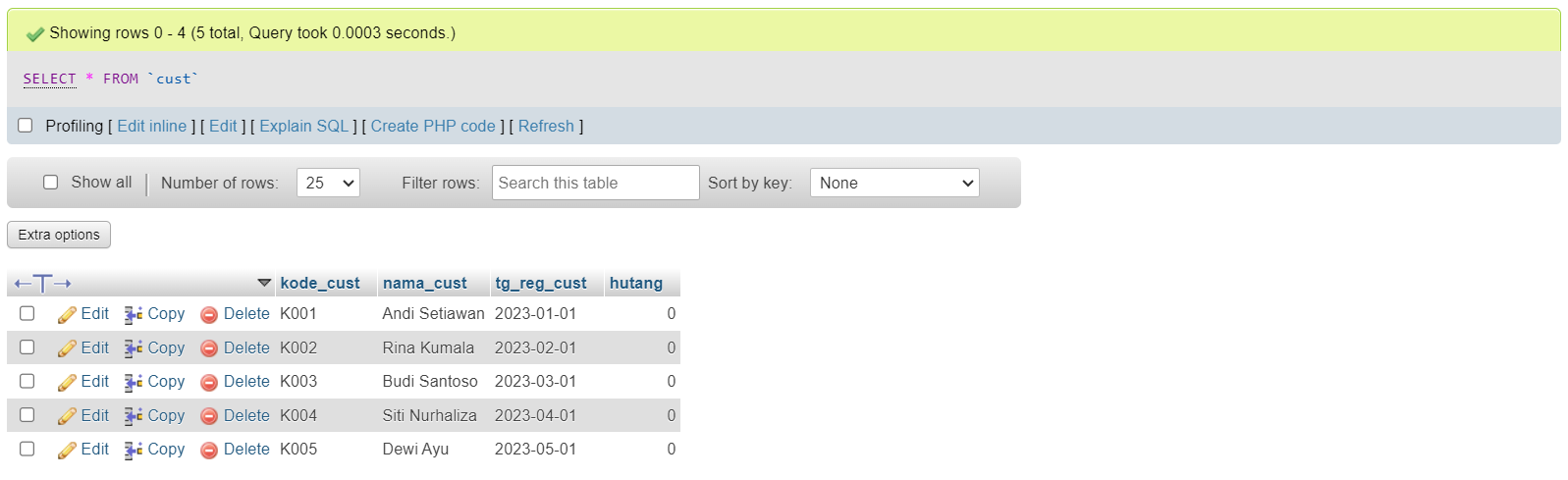
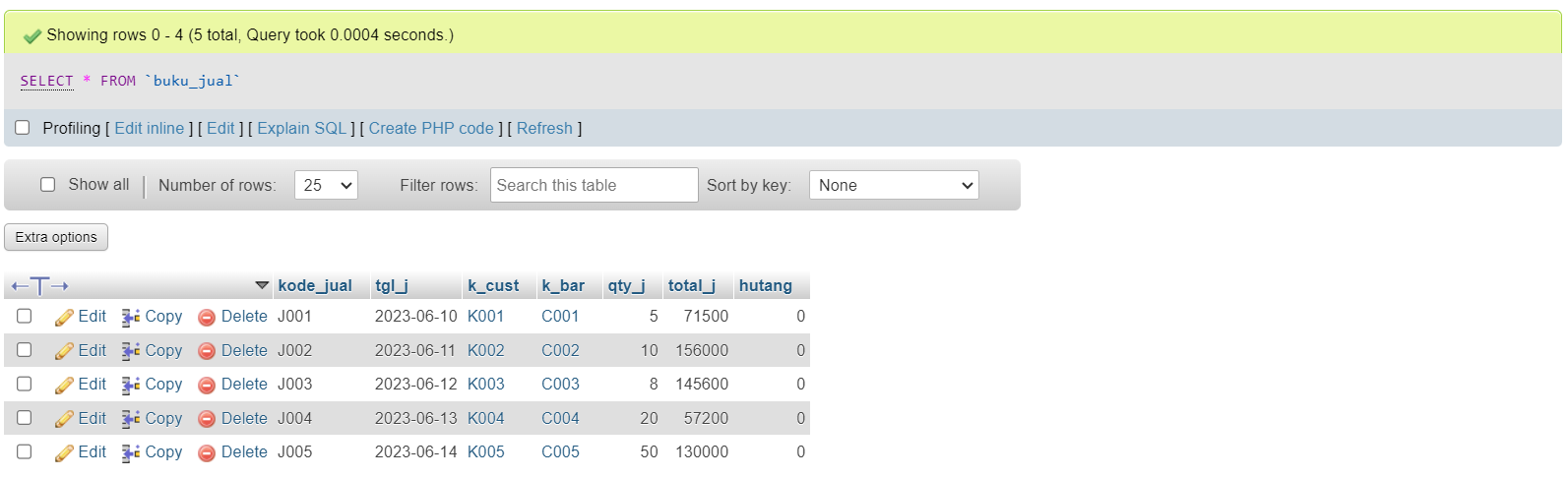
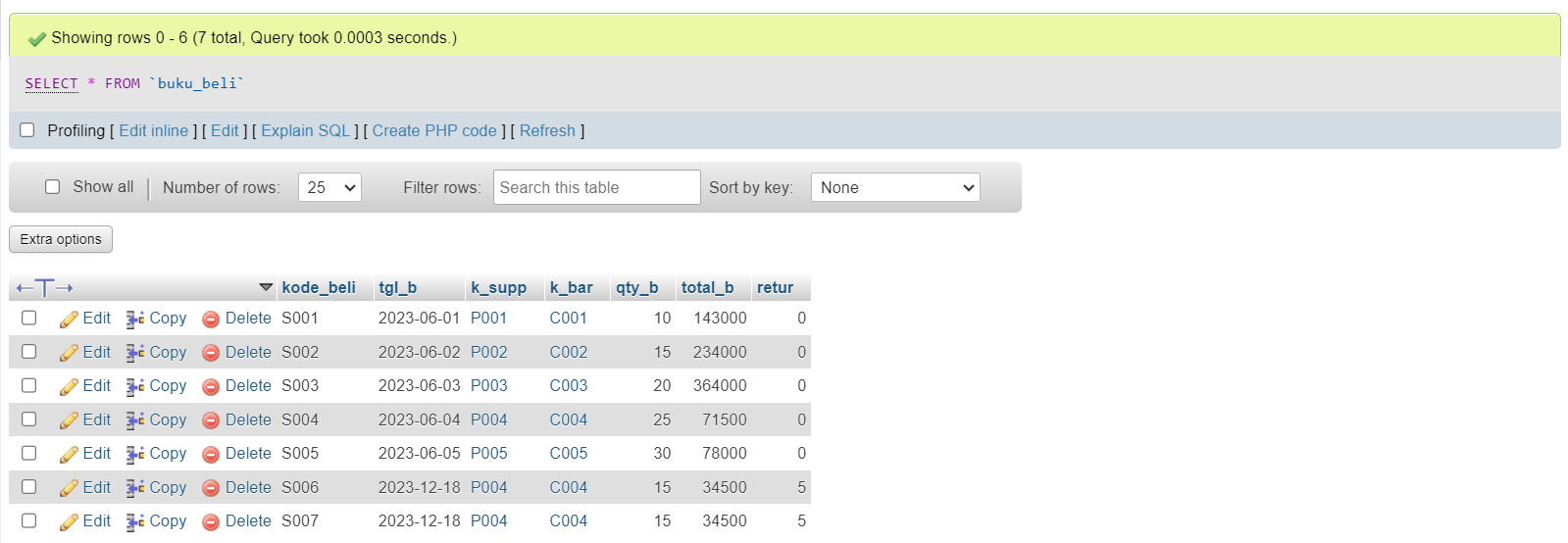
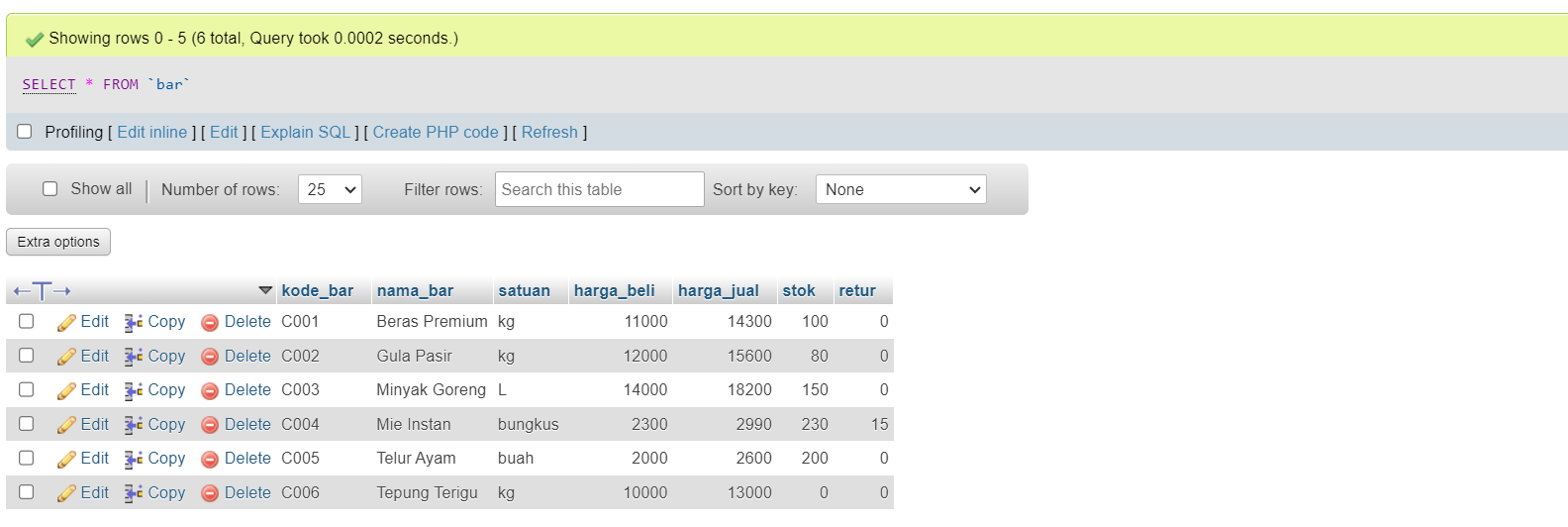
JOIN buku\_jual AS bj ON bb.k\_bar = bj.k\_bar

WHERE

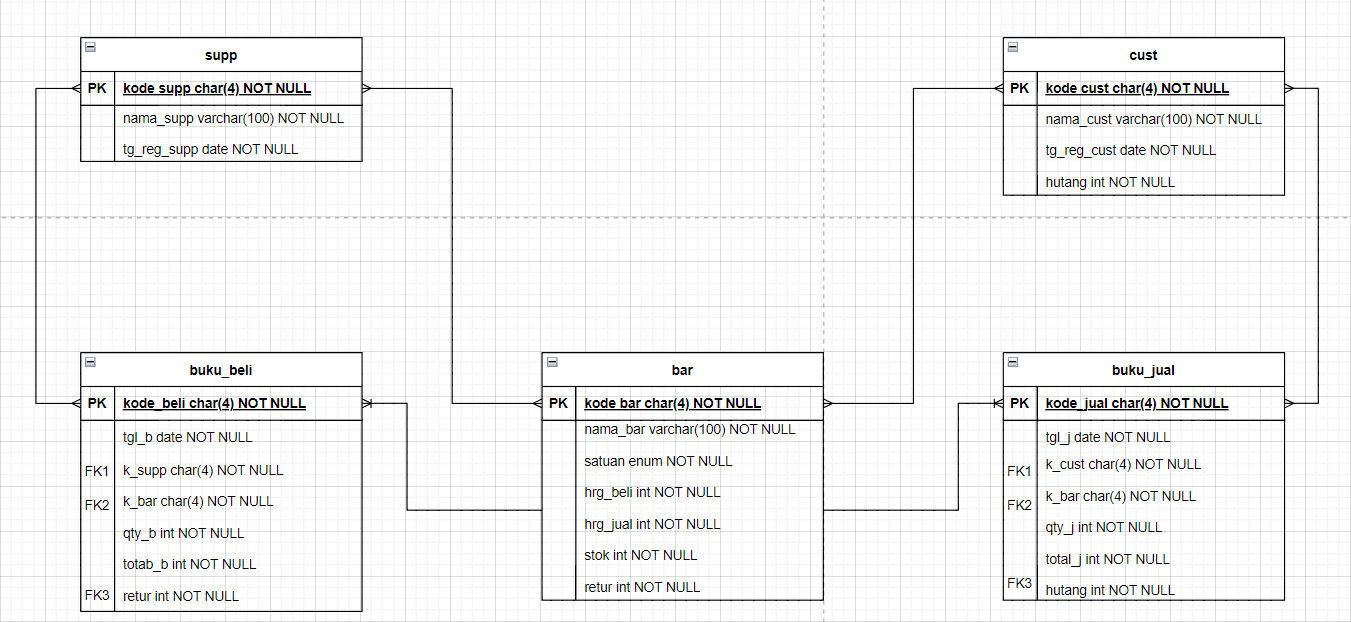
MONTH(bb.tgl\_b) = bulan OR MONTH(bj.tgl\_j) = bulan;

END //

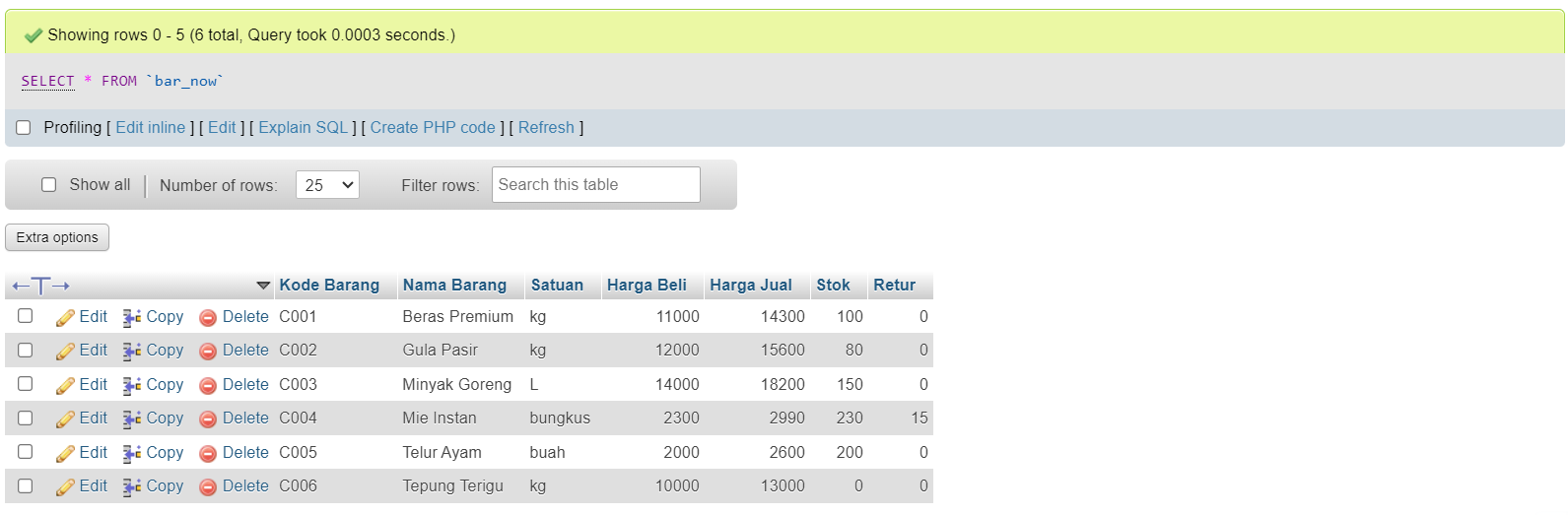
DELIMITER ;

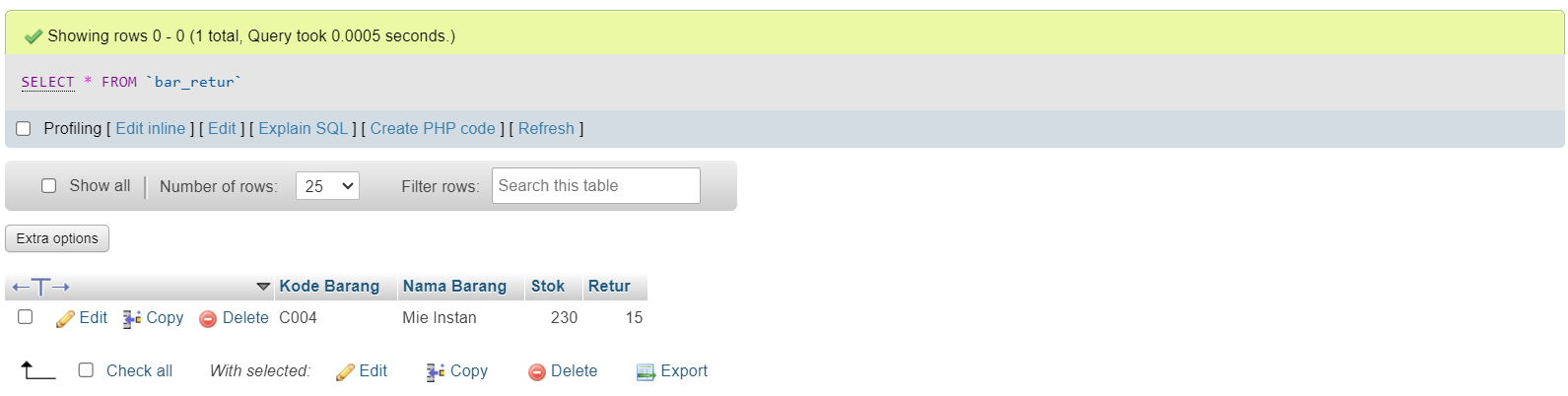
- Result

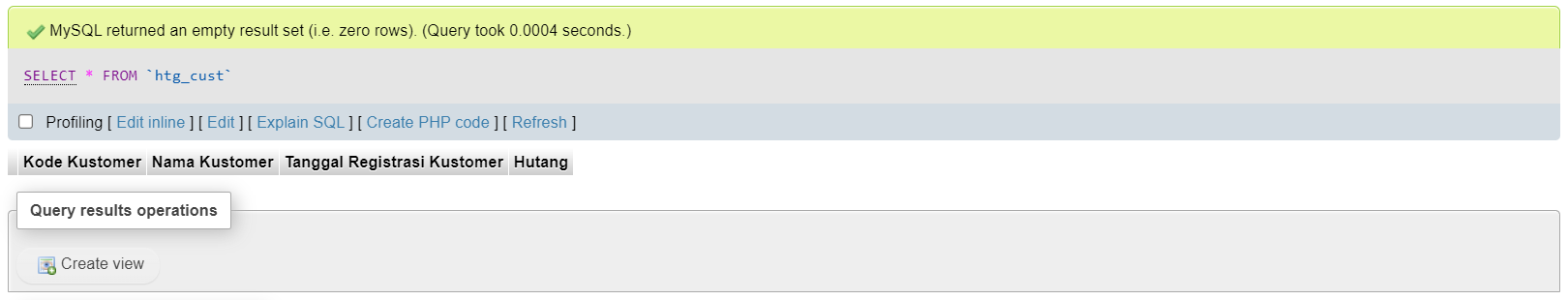
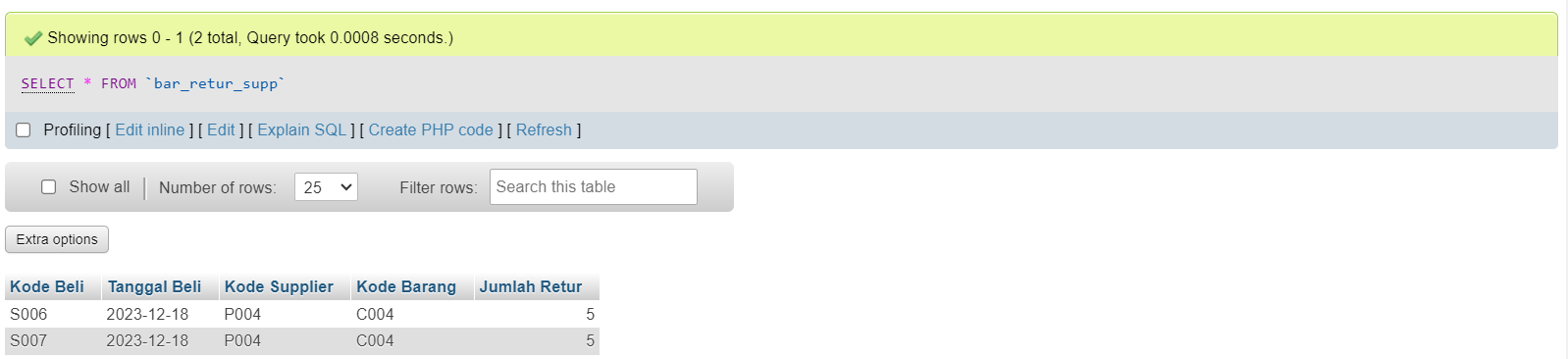
* The example of data based on the ERD model.



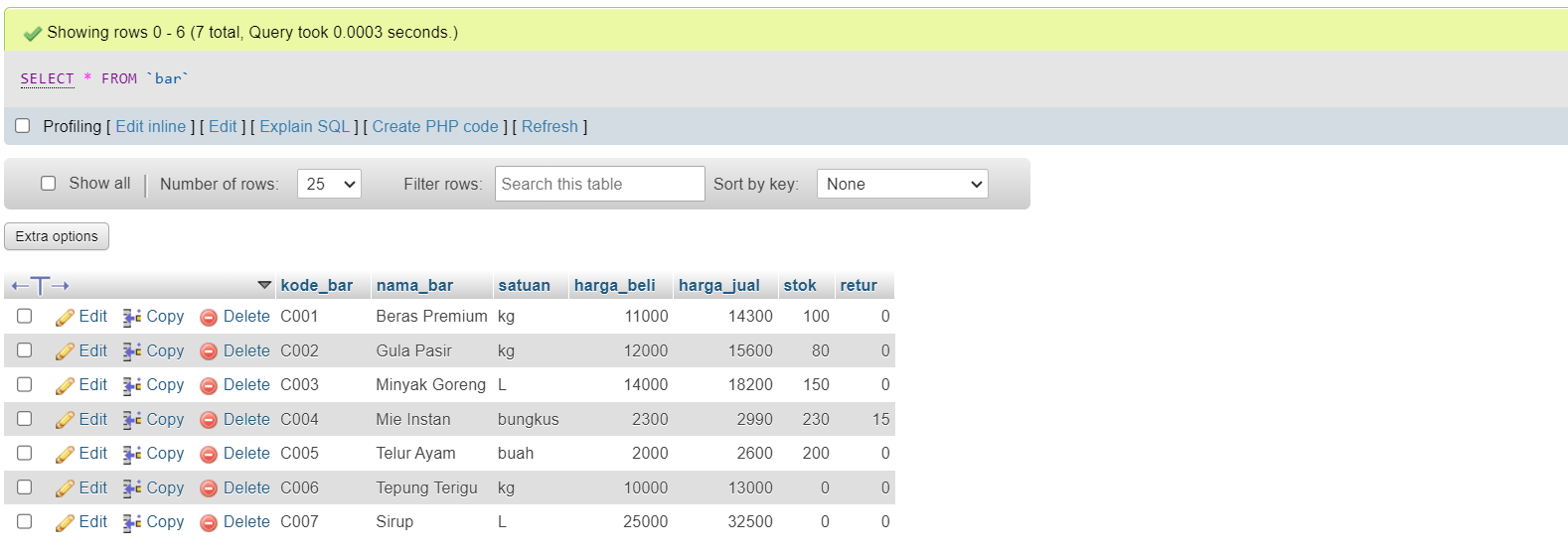
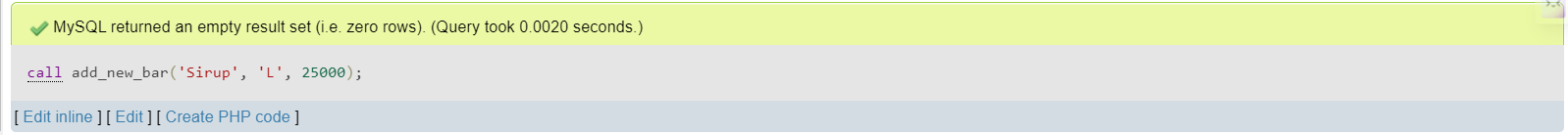
* The example of data based on views.



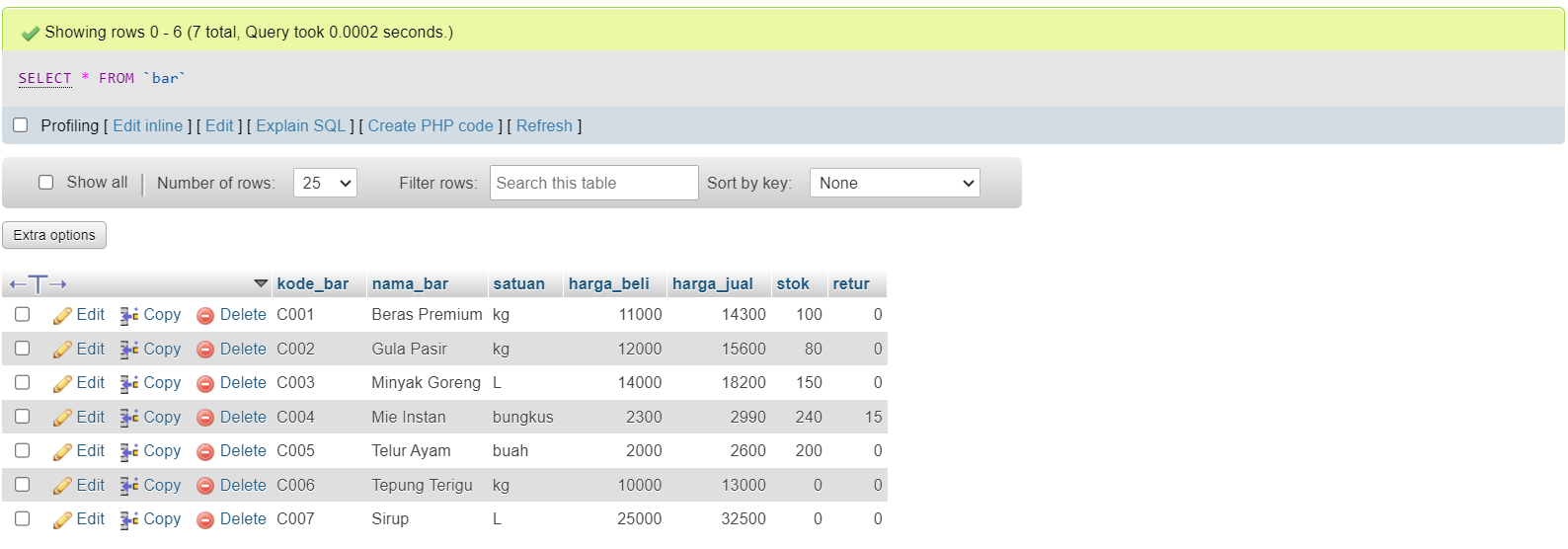
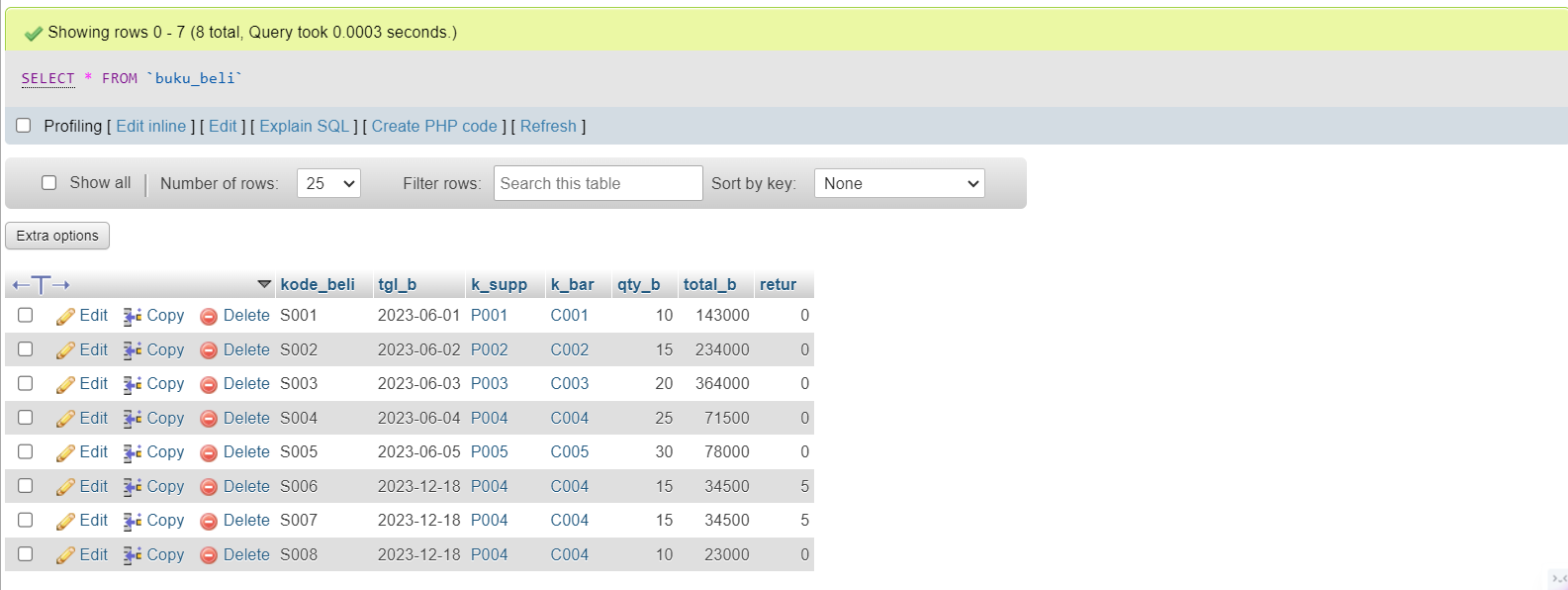
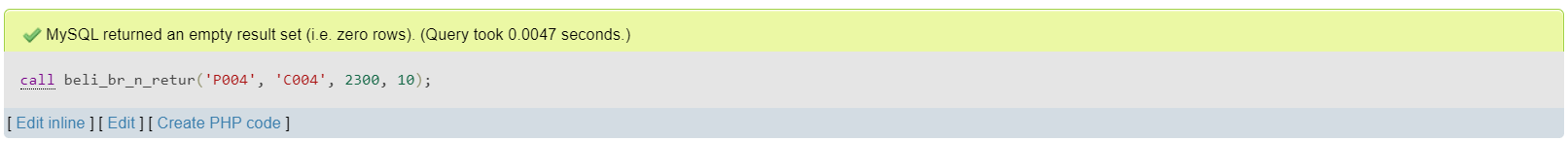




* The example of data based on stored procedures.  
  **add\_new\_bar()**

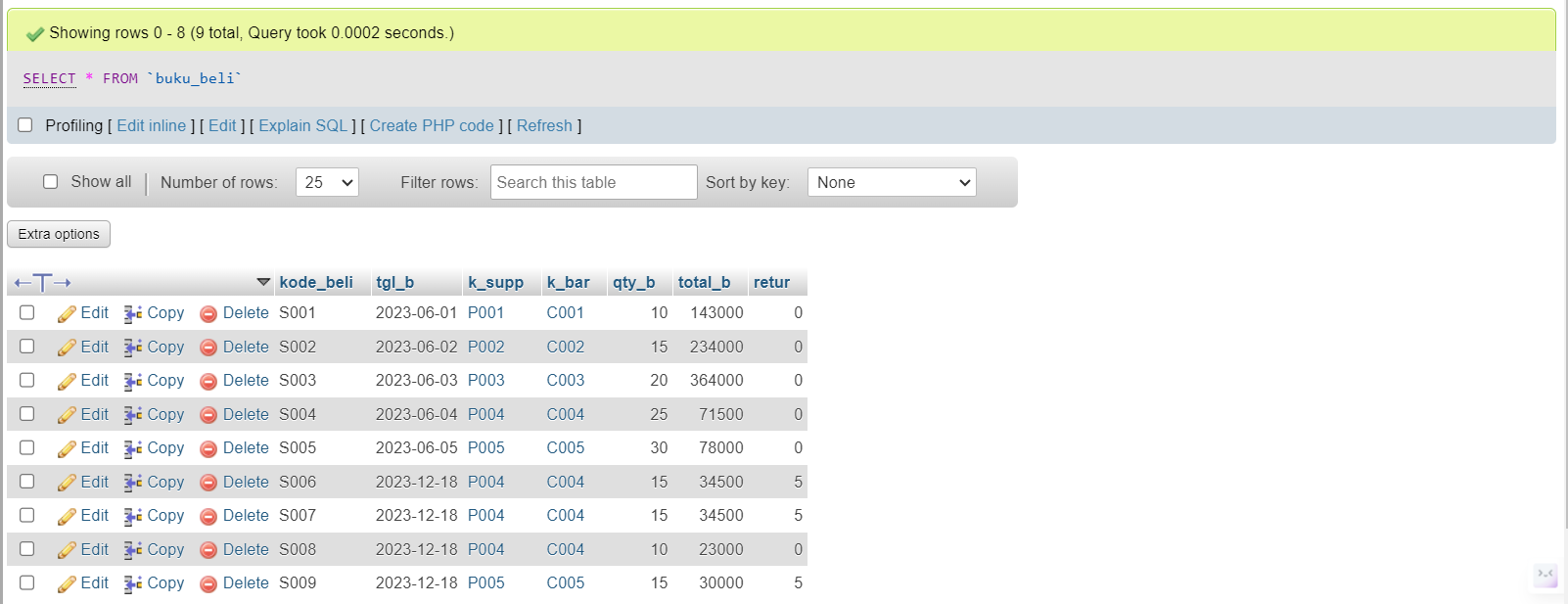


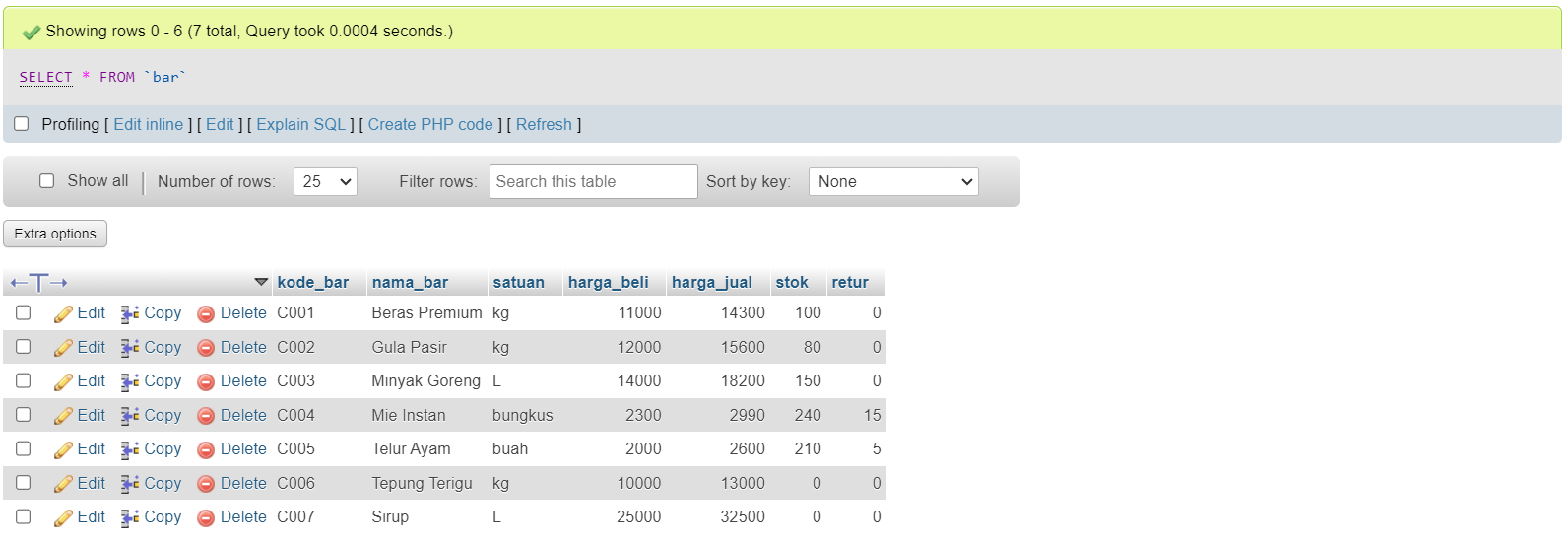
**beli\_br\_n\_retur()**



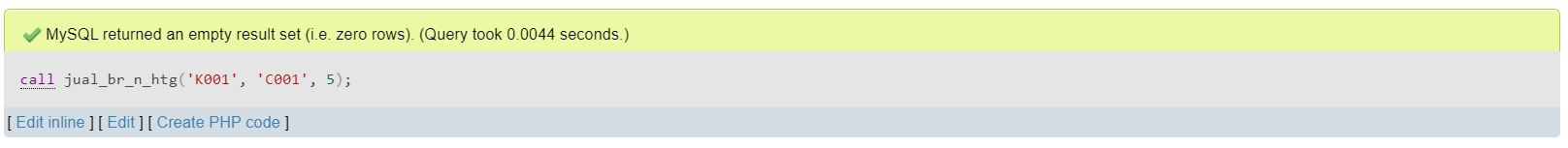
**beli\_br\_y\_retur()**

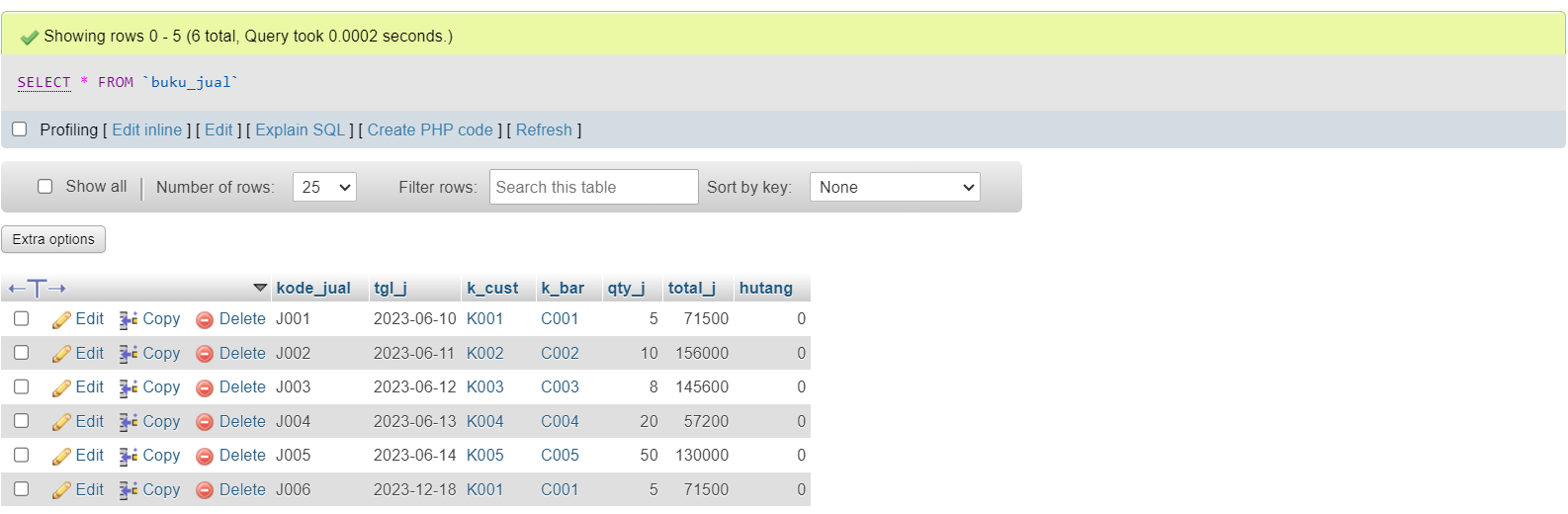
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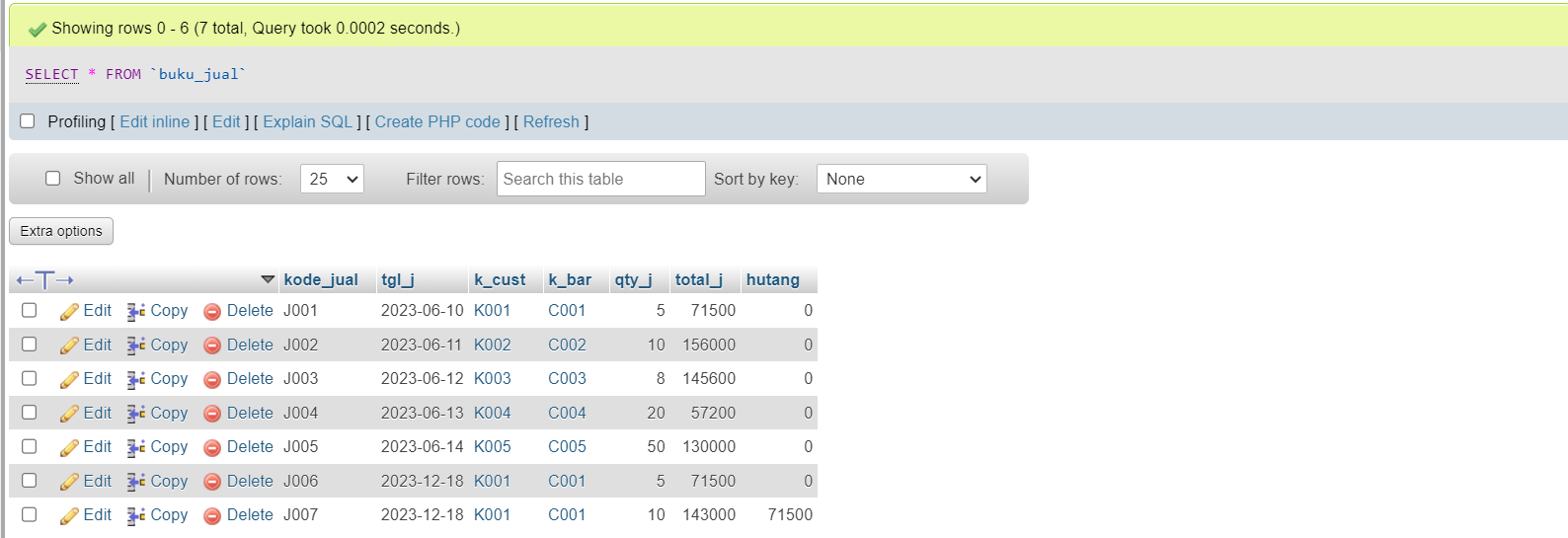
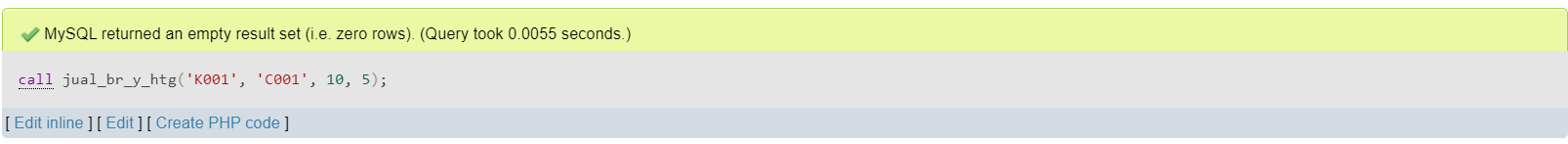
**jual\_br\_n\_htg**

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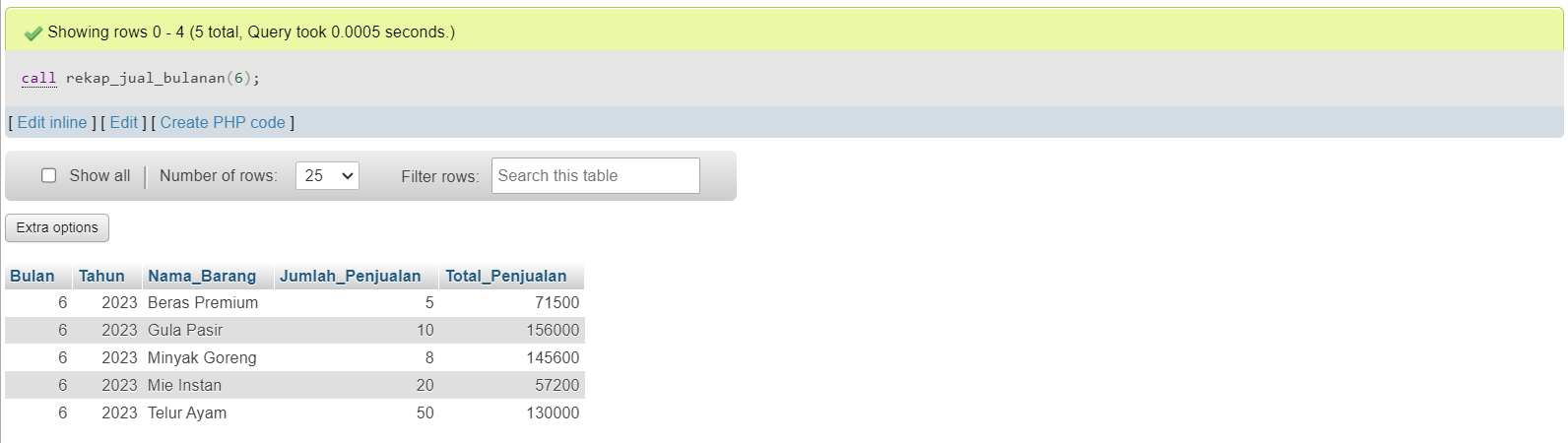
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**jual\_br\_y\_htg**

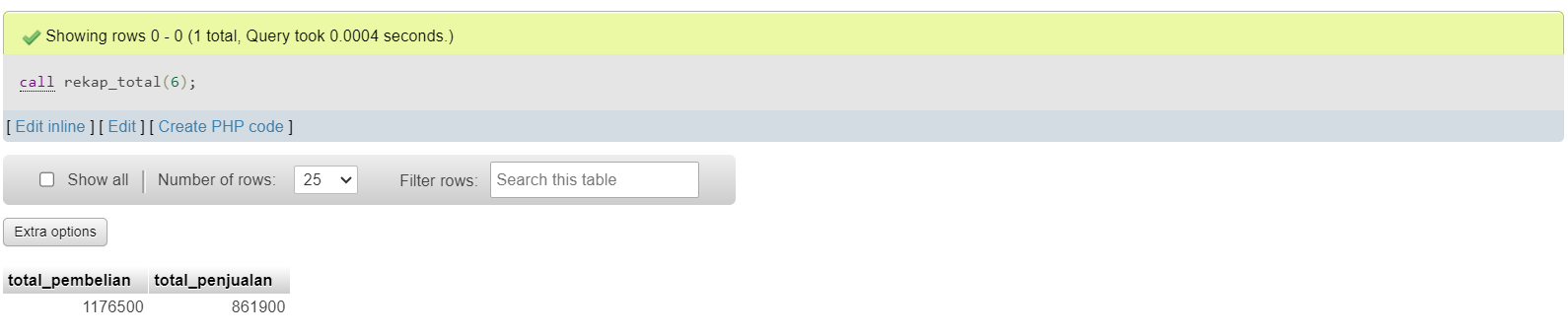
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**rekap\_beli\_bulanan()**

****

**rekap\_total()**

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