1. **PROBLEM – INSERT**
2. Insert 5 Operator

**INSERT** **INTO** `operators` (`id`, `name`, `created\_at`) **VALUES** ('1', 'Telkomsel', '2022-07-24 07:45:09');

**INSERT** **INTO** `operators` (`id`, `name`, `created\_at`) **VALUES** ('2', 'Indosat', '2022-07-24 07:45:09');

**INSERT** **INTO** `operators` (`id`, `name`, `created\_at`) **VALUES** ('3', 'Tri', '2022-07-24 07:45:09');

**INSERT** **INTO** `operators` (`id`, `name`, `created\_at`) **VALUES** ('4', 'Axis', '2022-07-24 07:45:09');

**INSERT** **INTO** `operators` (`id`, `name`, `created\_at`) **VALUES** ('5', 'XL', '2022-07-24 07:45:09');

1. Insert 3 Product Type

**INSERT** **INTO** `product\_types` (`id`, `name`, `created\_at`) **VALUES** ('1', 'Kartu Perdana', '2022-07-24 08:35:54');

**INSERT** **INTO** `product\_types` (`id`, `name`, `created\_at`) **VALUES** ('2', 'Pulsa', '2022-07-24 08:35:54');

**INSERT** **INTO** `product\_types` (`id`, `name`, `created\_at`) **VALUES** ('3', 'Paket Data', '2022-07-24 08:35:54');

1. Insert 2 Product dengan Product Type ID = 1 dan Operator ID = 3

**INSERT** **INTO** `products` (`id`, `product\_type\_id`, `operator\_id`, `code`, `name`, `status`, `created\_at`) **VALUES** ('1', '1', '3', 'KPTRI0020', 'Perdana Tri Pulsa 20.000', 'Tersedia', '2022-07-24 08:45:35');

**INSERT** **INTO** `products` (`id`, `product\_type\_id`, `operator\_id`, `code`, `name`, `status`, `created\_at`) **VALUES** ('2', '1', '3', 'KPTRI0005', 'Perdana Tri Pulsa 50.000', 'Tersedia', '2022-07-24 08:45:35');

1. Insert 3 Product dengan Product Type ID = 2 dan Operator ID = 1

**INSERT** **INTO** `products` (`id`, `product\_type\_id`, `operator\_id`, `code`, `name`, `status`, `created\_at`) **VALUES** ('3', '2', '1', 'PLSTLK005', 'Pulsa Telkomsel 5.000', 'Tersedia', '2022-07-24 08:45:35');

**INSERT** **INTO** `products` (`id`, `product\_type\_id`, `operator\_id`, `code`, `name`, `status`, `created\_at`) **VALUES** ('4', '2', '1', 'PLSTLK010', 'Pulsa Telkomsel 10.000', 'Tersedia', '2022-07-24 08:45:35');

**INSERT** **INTO** `products` (`id`, `product\_type\_id`, `operator\_id`, `code`, `name`, `status`, `created\_at`) **VALUES** ('5', '2', '1', 'PLSTLK020', 'Pulsa Telkomsel 20.000', 'Tersedia', '2022-07-24 08:45:35');

1. Insert 3 Product dengan Product Type ID = 3 dan Operator ID = 4

**INSERT** **INTO** `products` (`id`, `product\_type\_id`, `operator\_id`, `code`, `name`, `status`, `created\_at`) **VALUES** ('6', '3', '4', 'INETAX1GB', 'Paket Internet Axis 1GB', 'Tersedia', '2022-07-24 08:45:35');

**INSERT** **INTO** `products` (`id`, `product\_type\_id`, `operator\_id`, `code`, `name`, `status`, `created\_at`) **VALUES** ('7', '3', '4', 'INETAX2GB', 'Paket Internet Axis 2GB', 'Tersedia', '2022-07-24 08:45:35');

**INSERT** **INTO** `products` (`id`, `product\_type\_id`, `operator\_id`, `code`, `name`, `status`, `created\_at`) **VALUES** ('8', '3', '4', 'INETAX4GB', 'Paket Internet Axis 4GB', 'Tersedia', '2022-07-24 08:45:35');

1. Insert Product Description pada setiap product

**INSERT** **INTO** `product\_description` (`id`, `product\_id`, `description`, `created\_at`) **VALUES** ('1', '1', 'Masa Berlaku 20 Hari', '2022-07-24 08:57:07');

**INSERT** **INTO** `product\_description` (`id`, `product\_id`, `description`, `created\_at`) **VALUES** ('2', '2', 'Masa Berlaku 30 Hari', '2022-07-24 08:57:07');

**INSERT** **INTO** `product\_description` (`id`, `product\_id`, `description`, `created\_at`) **VALUES** ('3', '3', 'Masa Berlaku 5 Hari', '2022-07-24 08:57:07');

**INSERT** **INTO** `product\_description` (`id`, `product\_id`, `description`, `created\_at`) **VALUES** ('4', '4', 'Masa Berlaku 10 Hari', '2022-07-24 08:57:07');

**INSERT** **INTO** `product\_description` (`id`, `product\_id`, `description`, `created\_at`) **VALUES** ('5', '5', 'Masa Berlaku 15 Hari', '2022-07-24 08:57:07');

**INSERT** **INTO** `product\_description` (`id`, `product\_id`, `description`, `created\_at`) **VALUES** ('6', '6', 'Masa Berlaku 24 Jam', '2022-07-24 08:57:07');

**INSERT** **INTO** `product\_description` (`id`, `product\_id`, `description`, `created\_at`) **VALUES** ('7', '7', 'Masa Berlaku 24 Jam', '2022-07-24 08:57:07');

**INSERT** **INTO** `product\_description` (`id`, `product\_id`, `description`, `created\_at`) **VALUES** ('8', '8', 'Masa Berlaku 24 Jam', '2022-07-24 08:57:07');

1. Insert 3 payment methods

**INSERT** **INTO** `payment\_methods` (`id`, `name`, `status`, `created\_at`) **VALUES** ('1', 'Cash', '1', '2022-07-24 13:21:27');

**INSERT** **INTO** `payment\_methods` (`id`, `name`, `status`, `created\_at`) **VALUES** ('2', 'QRIS', '1', '2022-07-24 13:21:27');

**INSERT** **INTO** `payment\_methods` (`id`, `name`, `status`, `created\_at`) **VALUES** ('3', 'Virtual Account Mandiri', '1', '2022-07-24 13:21:27');

1. Insert 5 user pada tabel user

**INSERT** **INTO** `users` (`id`, `name`, `address`, `dob`, `status`, `gender`, `created\_at`) **VALUES** ('1', 'Fajar', 'Jakarta', '1993-07-28', '1', 'M', '2022-07-24 13:23:55');

**INSERT** **INTO** `users` (`id`, `name`, `address`, `dob`, `status`, `gender`, `created\_at`) **VALUES** ('2', 'Sawitry', 'Jakarta', '1995-07-24', '1', 'F', '2022-07-24 13:23:55');

**INSERT** **INTO** `users` (`id`, `name`, `address`, `dob`, `status`, `gender`, `created\_at`) **VALUES** ('3', 'Rizky', 'Jakarta', '1993-06-22', '1', 'M', '2022-07-24 13:23:55');

**INSERT** **INTO** `users` (`id`, `name`, `address`, `dob`, `status`, `gender`, `created\_at`) **VALUES** ('4', 'Jabbar', 'Jakarta', '1993-02-21', '1', 'M', '2022-07-24 13:23:55');

**INSERT** **INTO** `users` (`id`, `name`, `address`, `dob`, `status`, `gender`, `created\_at`) **VALUES** ('5', 'Siska', 'Jakarta', '1994-07-17', '1', 'F', 2022-07-14 13:23:55');

1. Insert 3 transaksi di masing-masing user

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('1', '1', '1', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('2', '1', '1', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('3', '1', '2', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('4', '2', '1', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('5', '2', '1', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('6', '2', '2', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('7', '3', '1', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('8', '3', '1', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('9', '3', '2', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('10', '4', '1', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('11', '4', '1', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('12', '4', '2', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('13', '5', '1', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('14', '5', '1', 'Lunas', '2022-07-24 13:26:25');

**INSERT** **INTO** `transactions` (`id`, `user\_id`, `payment\_method\_id`, `status`, `created\_at`) **VALUES** ('15', '5', '2', 'Lunas', '2022-07-24 13:26:25');

1. Insert 3 product di masing-masing transaksi

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('1', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('1', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('1', '3', '-', '1', '30000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('2', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('2', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('2', '3', '-', '1', '30000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('3', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('3', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('3', '3', '-', '1', '30000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('4', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('4', '2', '-', '1', '20000', '2022-07-24 13:33:38');

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**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('8', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('8', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('8', '3', '-', '1', '30000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('9', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('9', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('9', '3', '-', '1', '30000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('10', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('10', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('10', '3', '-', '1', '30000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('11', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('11', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('11', '3', '-', '1', '30000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('12', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('12', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('12', '3', '-', '1', '30000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('13', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('13', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('13', '3', '-', '1', '30000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('14', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('14', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('14', '3', '-', '1', '30000', '2022-07-24 13:33:38');

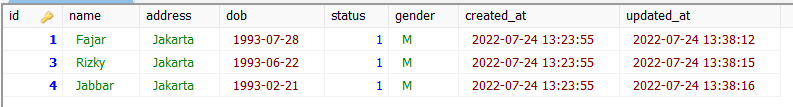
**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('15', '1', '-', '1', '10000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('15', '2', '-', '1', '20000', '2022-07-24 13:33:38');

**INSERT** **INTO** `transaction\_details` (`transaction\_id`, `product\_id`, `status`, `qty`, `price`, `created\_at`) **VALUES** ('15', '3', '-', '1', '30000', '2022-07-24 13:33:38');

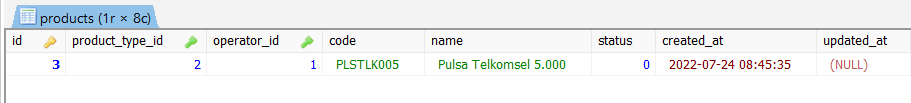
1. **PROBLEM – SELECT**
2. Tampilkan nama user dengan gender laki-laki / M

**SELECT** \* **FROM** users a **WHERE** a.gender='M';



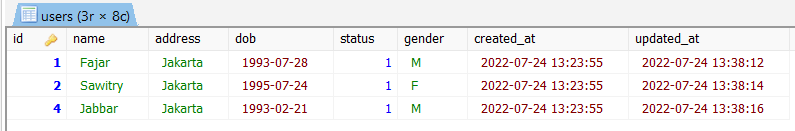
1. Tampilkan product dengan id = 3

**SELECT** \* **FROM** products a **WHERE** a.id='3';



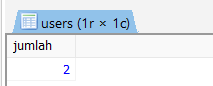
1. Tampilkan data pelanggan yang created\_at dalam range 7 hari kebelakang dan mempunyai nama menggandung kata ‘a’

**SELECT** \* **FROM** users a **WHERE** a.created\_at > **now**() - **INTERVAL** 7 **DAY** **AND** a.**name** **LIKE** '%a%';



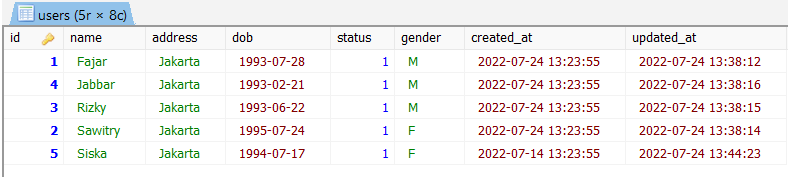
1. Hitung jumlah user dengan gender perempuan

**SELECT** **COUNT**(\*) **AS** jumlah **FROM** users a **WHERE** a.gender='F';



1. Tampilkan data pelanggan dengan urutan sesuai nama abjad

**SELECT** \* **FROM** users a **ORDER** **BY** a.**name** **ASC**;



1. Tampilkan 5 data pada data product

**SELECT** \* **FROM** products a **LIMIT** 5;



1. **PROBLEM – UPDATE**
2. Ubah data produk ID 1 dengan nama product dummy

**UPDATE** `products` **SET** `name`='Product Dummy' **WHERE** `id`=1;

1. Update qty = 3 pada transaction detail dengan product id 1

**UPDATE** `transaction\_details` **SET** `qty`='3' **WHERE** `product\_id`=1;

1. **PROBLEM – DELETE**
2. Delete pada tabel product dengan ID 1

**DELETE** **FROM** products` **WHERE** `id`=1;

1. Delete pada tabel product dengan product type ID 1

**DELETE** **FROM** `products` **WHERE** `product\_type\_id`=1;

1. **JOIN, UNION, SUB-QUERY, FUNCTION**
2. Gabungkan data transaksi dari user id 1 dan user id 2.

**SELECT** \* **FROM** transactions a **WHERE** a.user\_id='1'

**UNION**

**SELECT** \* **FROM** transactions b **WHERE** b.user\_id='2'

1. Tampilkan jumlah harga transaksi user id 1.

**SELECT**

**SUM**(a.qty\*a.price) **AS** jumlah\_harga

**FROM** transaction\_details a

**JOIN** transactions b **ON** a.transaction\_id=b.id

**WHERE** b.user\_id='1'

1. Tampilkan total transaksi dengan product type 2.

**SELECT**

**COUNT**(\*) **AS** total\_transaksi

**FROM** transaction\_details a

**JOIN** products b **ON** a.product\_id=b.id

**WHERE** b.product\_type\_id='2'

1. Tampilkan semua field table product dan field name table product type yang saling berhubungan.

**SELECT** a.\*, b.\* **FROM** products a

**JOIN** product\_types b **ON** a.product\_type\_id=b.id;

1. Tampilkan semua field table transaction, field name table product dan field name table user.

**SELECT** tab.\* **FROM** (

**SELECT**

a.id **AS** transaction\_id, a.payment\_method\_id, a.`status` **AS** trans\_status,

c.id **AS** product\_id, c.product\_type\_id, c.operator\_id, c.**code**,

d.id **AS** user\_id, d.**name**, d.address, d.dob, d.`status`, d.gender

**FROM** transactions a

**LEFT** **OUTER** **JOIN** transaction\_details b **ON** a.id=b.transaction\_id

**LEFT** **OUTER** **JOIN** products c **ON** b.product\_id=c.id

**LEFT** **OUTER** **JOIN** users d **ON** a.user\_id=d.id

**UNION**

**SELECT**

a.id **AS** transaction\_id, a.payment\_method\_id, a.`status` **AS** trans\_status,

c.id **AS** product\_id, c.product\_type\_id, c.operator\_id, c.**code**,

d.id **AS** user\_id, d.**name**, d.address, d.dob, d.`status`, d.gender

**FROM** transactions a

**RIGHT** **OUTER** **JOIN** transaction\_details b **ON** a.id=b.transaction\_id

**RIGHT** **OUTER** **JOIN** products c **ON** b.product\_id=c.id

**RIGHT** **OUTER** **JOIN** users d **ON** a.user\_id=d.id) **AS** tab

1. Buat function setelah data transaksi dihapus maka transaction detail terhapus juga dengan transaction id yang dimaksud.

DELIMITER $$

**CREATE** **TRIGGER** delete\_transaction\_detail

**BEFORE** **DELETE**

**ON** transactions **FOR** **EACH** **ROW**

**BEGIN**

*-- declare variables*

**DECLARE** v\_transaction\_id **INT**;

**SET** v\_transaction\_id=**OLD**.id;

*-- trigger code*

**DELETE** **FROM** transaction\_details **WHERE** transaction\_id=v\_transaction\_id;

**END**$$

1. Buat function setelah data transaksi detail dihapus maka data total\_qty terupdate berdasarkan qty data transaction id yang dihapus.

DELIMITER $$

**CREATE** **TRIGGER** update\_qty **AFTER** **DELETE** **ON** transaction\_details

**FOR** **EACH** **ROW** **BEGIN**

**DECLARE** total\_qty\_new **INT** **DEFAULT** 0;

**SELECT** **SUM**(qty) **FROM** transaction\_details **WHERE** transaction\_id=**OLD**.transaction\_id **INTO** @total\_qty\_new;

**UPDATE** transactions **SET** total\_qty=@total\_qty\_new **WHERE** id=**OLD**.transaction\_id;

**END**$$

1. Tampilkan data products yang tidak pernah ada di tabel transaction\_details dengan sub-query.

**SELECT** \* **FROM** products a **WHERE** a.id **NOT** **IN**

(**SELECT** b.product\_id **FROM** transaction\_details b)