

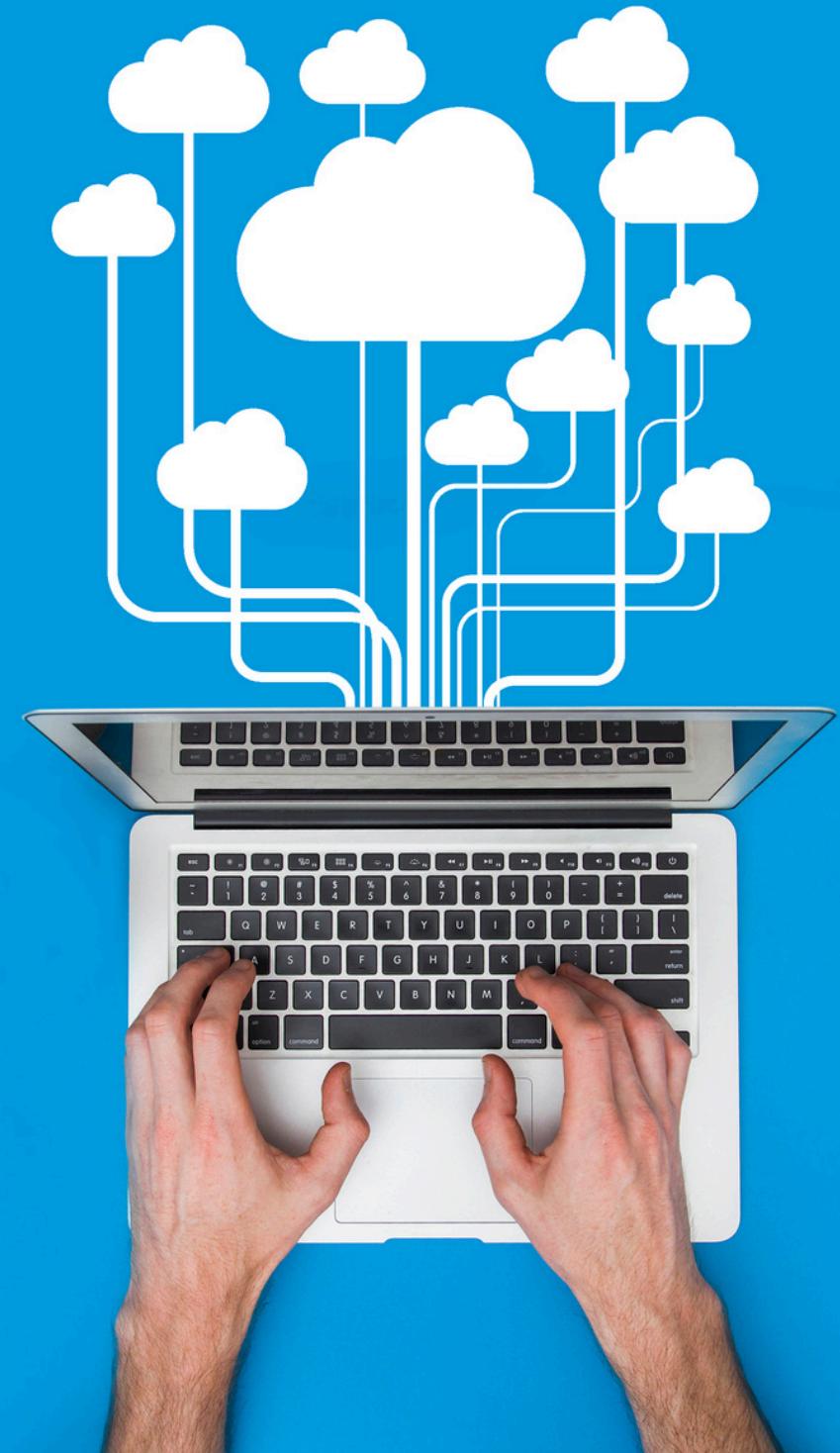
UAS

BASIS DATA

LANJUTAN

Presentation by

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PENJELASAN PROJECT

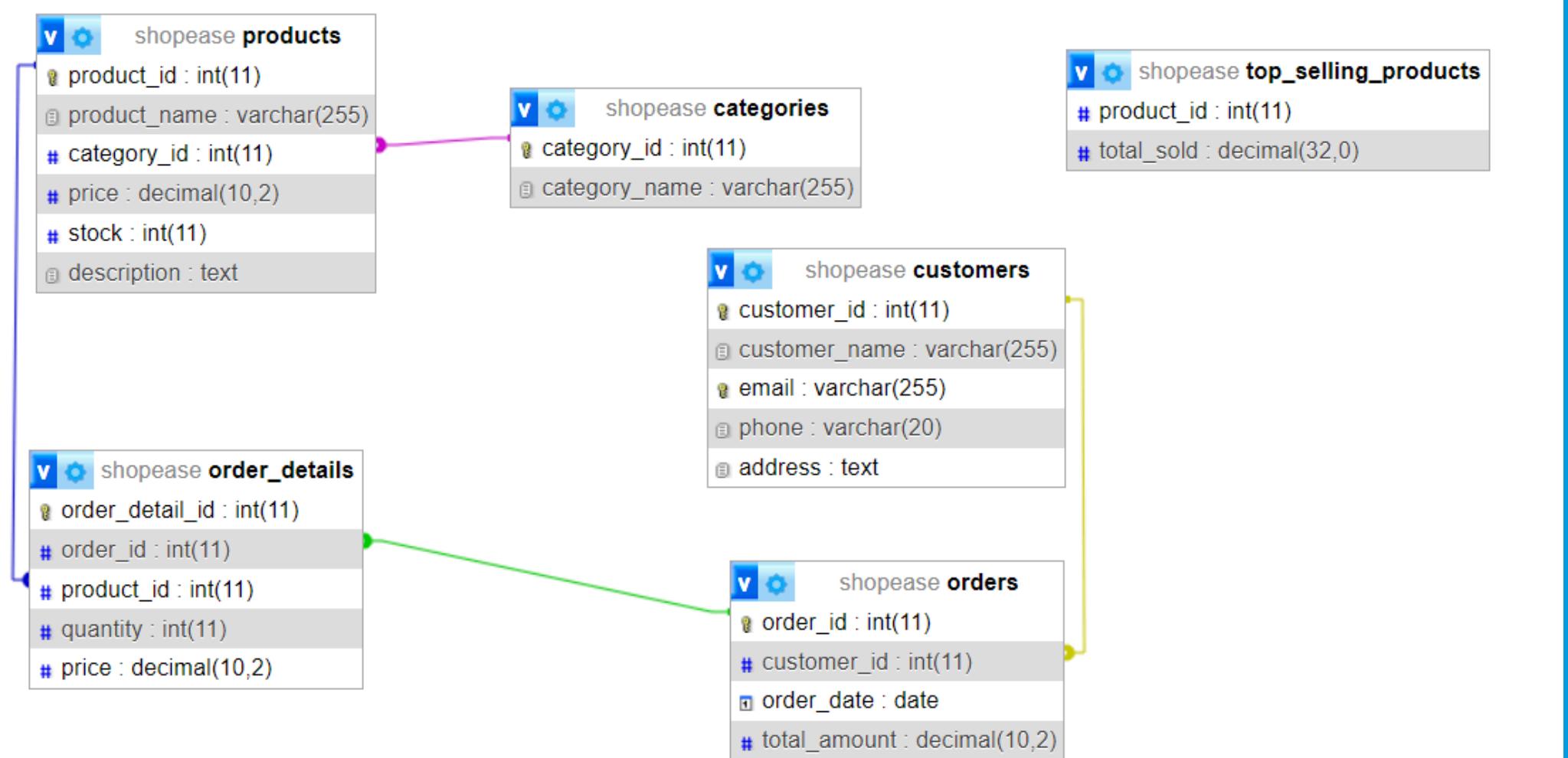
Project basis data yang saya buat adalah Toko Online bernama ShopEase. yang berisi tabel :

1. Categories
2. Customers
3. orders
4. order_details
5. products
6. top_selling_products

Berikutnya masing- masing tabel akan digunakan view untuk menampilkan beberapa data yang akan diperlukan.



Entity Relationship Diagram



By : Nathanael

PROSES PEMBUATAN TRIGGERS

```
MariaDB [ShopEase]> SHOW TRIGGERS;
+-----+-----+-----+
| Trigger | Event | Table      | Statement
+-----+-----+-----+-----+-----+-----+-----+-----+
| update_stock | INSERT | order_details | BEGIN
|           |       |             | UPDATE products
|           |       |             | SET stock = stock - NEW.quantity
|           |       |             | WHERE product_id = NEW.product_id;
|           |       |             | END | AFTER | 2024-06-23 16:02:27.27 | NO_ZERO_IN_DATE,NO_ZERO_DATE,NO_ENGINE_SUBSTITUTION | root@localhost | u
|           |       |             | tf8mb4          | utf8mb4_unicode_ci   | utf8mb4_general_ci |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.012 sec)

           | WHERE product_id = NEW.product_id;
|           |       |             | END | AFTER | 2024-06-23 16:02:27.27 | NO_ZERO_IN_DATE,NO_ZERO_DATE,NO_ENGINE_SUBSTITUTION | root@localhost | u
|           |       |             | tf8mb4          | utf8mb4_unicode_ci   | utf8mb4_general_ci |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.012 sec)
```

PROSES PEMBUATAN VIEW

```
MariaDB [ShopEase]> CREATE VIEW top_selling_products AS
-> SELECT od.product_id, SUM(od.quantity) AS total_sold
-> FROM order_details od
-> JOIN orders o ON od.order_id = o.order_id
-> WHERE o.order_date >= DATE_SUB(CURDATE(), INTERVAL 1 MONTH)
-> GROUP BY od.product_id
-> ORDER BY total_sold DESC;
Query OK, 0 rows affected (0.013 sec)
```

```
MariaDB [shopease]> SELECT * FROM top_selling_products;
+-----+-----+
| product_id | total_sold |
+-----+-----+
| 1 | 1 |
| 2 | 1 |
| 3 | 1 |
+-----+-----+
3 rows in set (0.006 sec)
```

PROSES PEMBUATAN AGGREGAT

total penjualan perbulan, dan rata rata transaksi harian

```
MariaDB [ShopEase]> SELECT YEAR(order_date) AS year, MONTH(order_date) AS month, SUM(total_amount) AS total_sales
  -> FROM orders
  -> GROUP BY YEAR(order_date), MONTH(order_date);
+-----+-----+
| year | month | total_sales |
+-----+-----+
| 2024 |      6 |      339.97 |
+-----+-----+
1 row in set (0.003 sec)

MariaDB [ShopEase]> SELECT DATE(order_date) AS date, AVG(total_amount) AS avg_daily_sales
  -> FROM orders
  -> GROUP BY DATE(order_date);
+-----+-----+
| date | avg_daily_sales |
+-----+-----+
| 2024-06-01 |      319.980000 |
| 2024-06-02 |      19.990000 |
+-----+-----+
2 rows in set (0.003 sec)
```

PROSES PEMBUATAN QUERY

QUERY LEFT JOIN DAN INNER JOIN

```
MariaDB [ShopEase]> SELECT customers.customer_id, customers.customer_name, orders.order_id
-> FROM customers
-> LEFT JOIN orders ON customers.customer_id = orders.customer_id;
+-----+-----+-----+
| customer_id | customer_name | order_id |
+-----+-----+-----+
|          1 |    John Doe    |        1 |
|          2 |   Jane Smith   |        2 |
+-----+-----+-----+
2 rows in set (0.008 sec)

MariaDB [ShopEase]> SELECT orders.order_id, order_details.product_id, order_details.quantity, products.product_name
-> FROM orders
-> INNER JOIN order_details ON orders.order_id = order_details.order_id
-> INNER JOIN products ON order_details.product_id = products.product_id;
+-----+-----+-----+-----+
| order_id | product_id | quantity | product_name |
+-----+-----+-----+-----+
|        1 |         1 |       1 | Smartphone  |
|        1 |         2 |       1 | Laptop      |
|        2 |         3 |       1 | Novel       |
+-----+-----+-----+-----+
3 rows in set (0.007 sec)
```

PROSES PEMBUATAN QUERY

SUBQUERY DAN HAVING

```
MariaDB [ShopEase]> SELECT product_name, price
    -> FROM products
    -> WHERE price > (SELECT AVG(price) FROM products);
+-----+-----+
| product_name | price |
+-----+-----+
| Smartphone   | 299.99 |
| Laptop        | 799.99 |
+-----+-----+
2 rows in set (0.003 sec)

MariaDB [ShopEase]> SELECT category_id, SUM(price * quantity) AS total_sales
    -> FROM order_details
    -> INNER JOIN products ON order_details.product_id = products.product_id
    -> GROUP BY category_id
    -> HAVING total_sales > 1000;
ERROR 1052 (23000): Column 'price' in field list is ambiguous
MariaDB [ShopEase]> SELECT products.category_id, SUM(products.price * order_details.quantity) AS total_sales
    -> FROM order_details
    -> INNER JOIN products ON order_details.product_id = products.product_id
    -> GROUP BY products.category_id
    -> HAVING total_sales > 1000;
+-----+-----+
| category_id | total_sales |
+-----+-----+
|           1 |      1099.98 |
+-----+-----+
1 row in set (0.001 sec)
```

PROSES PEMBUATAN QUERY

WILDCARD

```
MariaDB [ShopEase]> SELECT product_name, description
-> FROM products
-> WHERE description LIKE '%keyword%';
ERROR 1054 (42S22): Unknown column 'description' in 'field list'
MariaDB [ShopEase]> describe products;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra       |
+-----+-----+-----+-----+-----+
| product_id | int(11) | NO   | PRI   | NULL    | auto_increment |
| product_name | varchar(255) | NO   | MUL   | NULL    |               |
| category_id | int(11) | YES  | MUL   | NULL    |               |
| price        | decimal(10,2) | NO   |       | NULL    |               |
| stock        | int(11)  | NO   |       | NULL    |               |
+-----+-----+-----+-----+-----+
5 rows in set (0.010 sec)

MariaDB [ShopEase]> ALTER TABLE products ADD COLUMN description TEXT;
Query OK, 0 rows affected (0.008 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [ShopEase]> describe products;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra       |
+-----+-----+-----+-----+-----+
| product_id | int(11) | NO   | PRI   | NULL    | auto_increment |
| product_name | varchar(255) | NO   | MUL   | NULL    |               |
| category_id | int(11) | YES  | MUL   | NULL    |               |
| price        | decimal(10,2) | NO   |       | NULL    |               |
| stock        | int(11)  | NO   |       | NULL    |               |
| description | text    | YES  |       | NULL    |               |
+-----+-----+-----+-----+-----+
6 rows in set (0.007 sec)

MariaDB [ShopEase]> UPDATE products SET description = 'Produk yang sangat bagus untuk digunakan sehari hari' WHERE product_id = 1;
Query OK, 1 row affected (0.008 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

PROSES PEMBUATAN QUERY

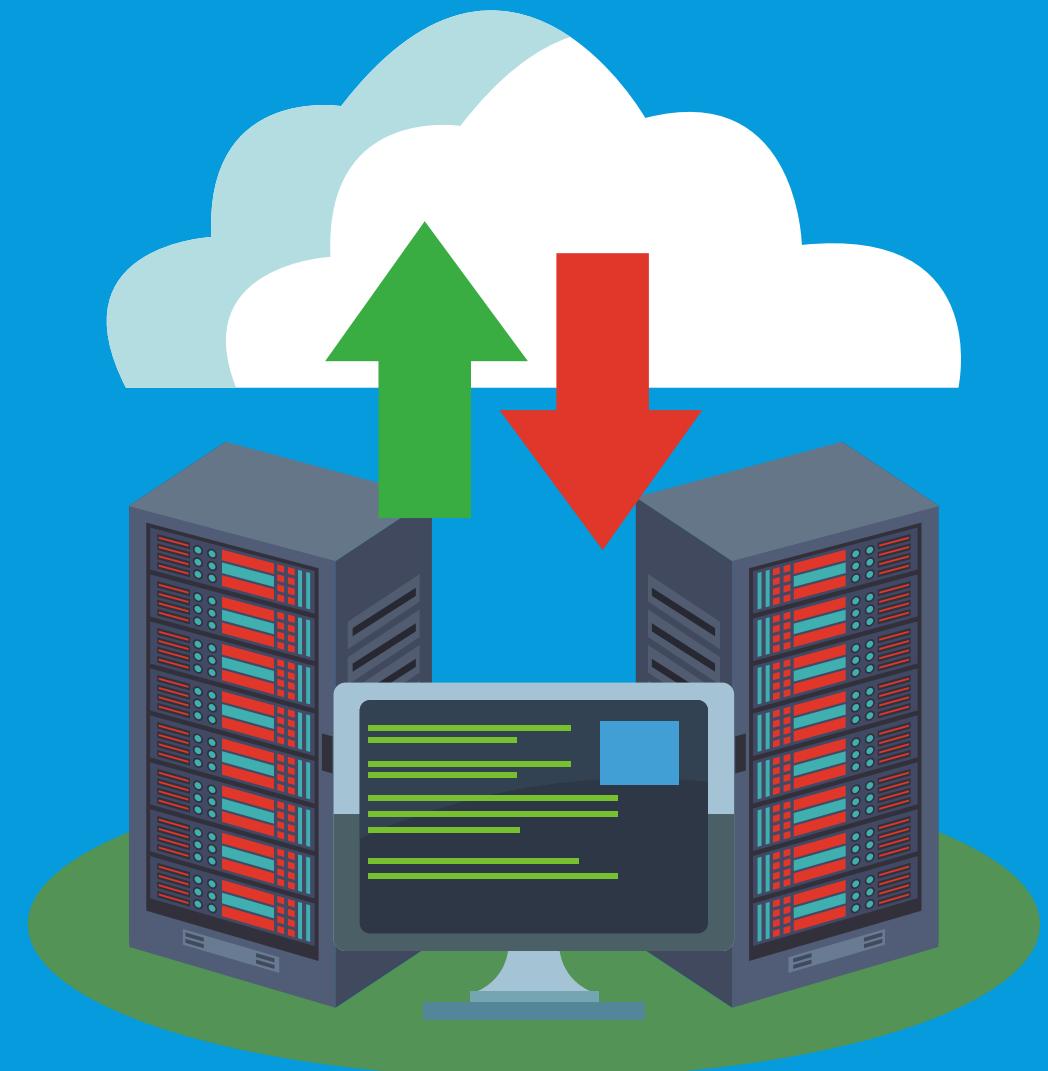
WILDCARD BERHASIL

```
MariaDB [ShopEase]> SELECT product_name, description
-> FROM products
-> WHERE description LIKE '%Produk yang sangat bagus%';
+-----+
| product_name | description
+-----+
| Smartphone   | Produk yang sangat bagus dan berkualitas tinggi
| Laptop        | Produk yang sangat bagus untuk digunakan sehari-hari
+-----+
2 rows in set (0.001 sec)
```

DUMPING DAN REPLIKASI DATA

Fungsi Replika Data:

1. Redundansi dan Pemulihan Bencana: Menyediakan salinan cadangan yang siap digunakan jika server utama mengalami kegagalan.
2. Distribusi Beban Kerja: Menyeimbangkan beban kerja antara beberapa server untuk meningkatkan kinerja dan skalabilitas.
3. Lokasi Geografis: Menyediakan salinan data di beberapa lokasi geografis untuk meningkatkan aksesibilitas dan kinerja.
4. Ketersediaan Tinggi: Memastikan bahwa data selalu tersedia bahkan selama proses pemeliharaan atau kegagalan perangkat keras.





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