Rakamin Academy X id/x partners

# Data Warehouse & ETL Implementation

## ID/X Partners Data Engineer Virtual Internship Program

Presented by
Muhammad Alvero Johansyah

# Muhammad Alvero Johansyah

## About Me:

A third-year Undergraduate Mathematics Student at the Universitas Indonesia with a passion for data science. Experienced as a computer laboratory assistant in the Department of Mathematics, I have a basic understanding and experience in the field of data science with a few project experience. I have a keen interest in Programming Language Scripting and SQL Operation, and I am enthusiastic about applying these skills to solve complex data problems.

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## Experience & Projects:

- Computer Lab Assistant on computing field in Department of Mathematics, Universitas Indonesia
- Assistant Lecturer of Numerical Method in Department of Mathematics, Universitas Indonesia
- Project: Classification of Cardiotocography to Model the Diagnosis of Problems in the Fetus using the Artificial Neural Network (ANN) Model with the Keras Library and Multilayer Perceptron (MLP) and the Decision Tree Model.
- Project: Handling Missing Value on Online Administration Universities form using Mean, Median, & KNN Method.

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# Case Study

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Salah satu *client* dari ID/X Partners yang bergerak di bidang *e-commerce* memiliki kebutuhan untuk membuat sebuah *Data Warehouse* yang berasal dari beberapa tabel dari *database* sumber. *Data Warehouse* ini nantinya terdiri dari satu tabel *Fact* dan beberapa tabel *Dimension*.

Sebagai Data Engineer, ada beberapa Task yang harus dilakukan:

1. **Melakukan Import/Restore Database Staging.**
2. **Membuat sebuah database bernama DWH_Project, serta membuat tabel fact dan dimension dari tabel yang ada di database staging.**
3. **Membuat Job ETL di aplikasi talend untuk memindahkan data dari *Staging* ke *Data Warehouse*.**
4. **Membuat *Store Procedure* (SP) untuk menampilkan summary sales order berdasarkan status pengiriman.**

Tools yang digunakan adalah SQL Server Management Studio (SMSS) dan Talend. Selain itu, ada File staging.bak yang merupakan file backup database yang terlampir.

# Result of the Task
# &
# Completion of the Case Study

Link Folder:
https://drive.google.com/drive/folders/1UbQgCPNWntlxd1qKAUbqDwkkiWDhxxxk?usp=sharing

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# Task 1

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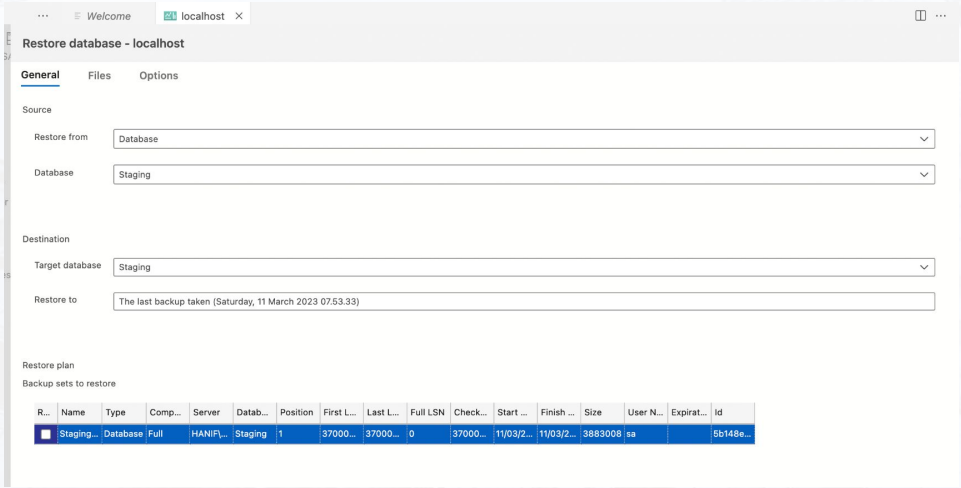
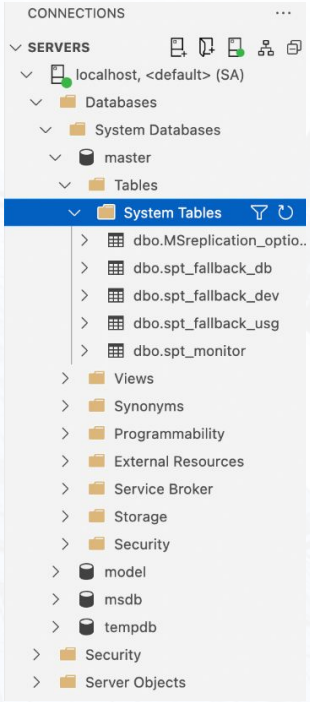
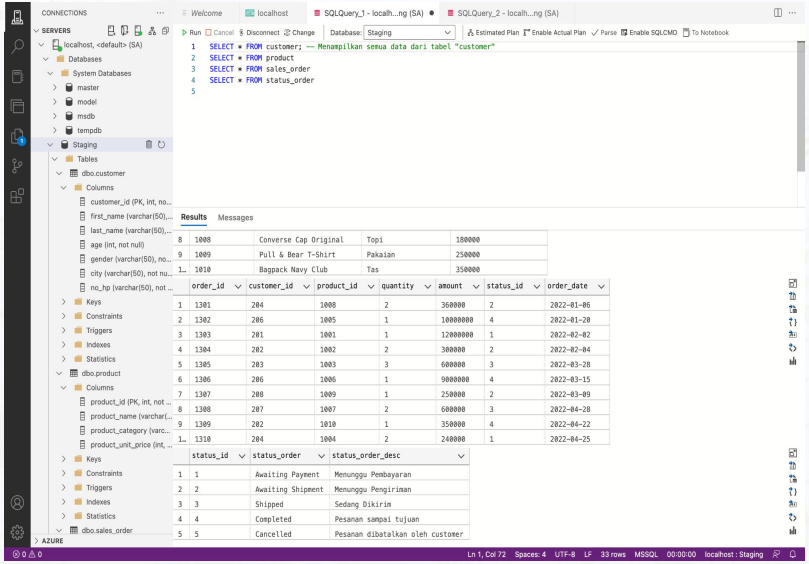
## Melakukan Import/Restore Database Staging.

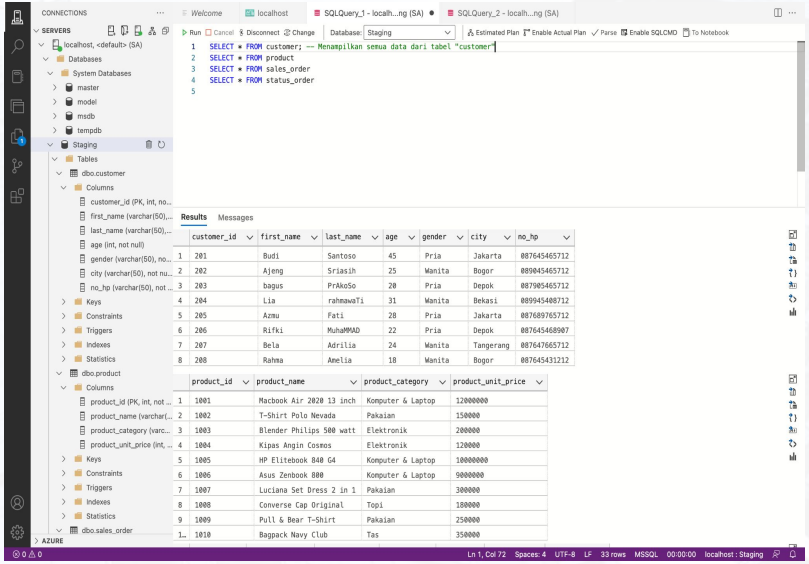


# Task 1

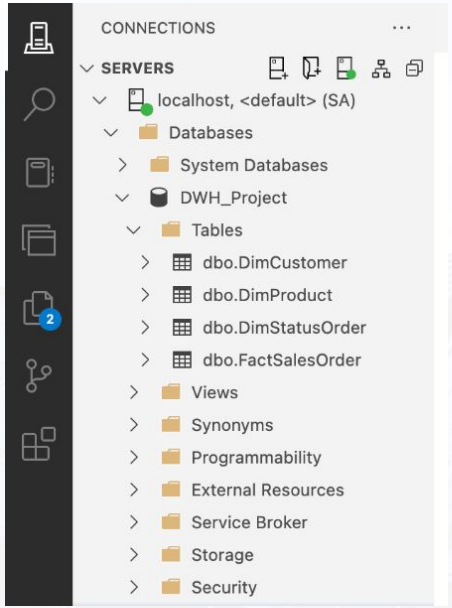
## Melakukan Import/Restore Database Staging.



# Task 2

**Membuat sebuah database bernama DWH_Project, serta membuat tabel fact dan dimension dari tabel yang ada di database staging.**




Run Cancel Disconnect Change Database: DWH_Project

```sql
-- Membuat database DWH_Project
CREATE DATABASE DWH_Project;

-- Menggunakan database yang telah dibuat
USE DWH_Project;

CREATE TABLE DimCustomer (
    CustomerID INT PRIMARY KEY,
    FirstName NVARCHAR(255),
    LastName NVARCHAR(255),
    Age INT,
    Gender NVARCHAR(1),
    City NVARCHAR(255),
    NoHP NVARCHAR(20)
);

CREATE TABLE DimProduct (
    ProductID INT PRIMARY KEY,
    ProductName NVARCHAR(255),
    ProductCategory NVARCHAR(255),
    ProductUnitPrice DECIMAL(18, 2)
);

CREATE TABLE DimStatusOrder (
    StatusID INT PRIMARY KEY,
    StatusOrder NVARCHAR(255),
    StatusOrderDesc NVARCHAR(255)
);

CREATE TABLE FactSalesOrder (
    OrderID INT PRIMARY KEY,
    CustomerID INT,
    ProductID INT,
    Quantity INT,
    Amount DECIMAL(18, 2),
    StatusID INT,
    OrderDate DATE,
    FOREIGN KEY (CustomerID) REFERENCES DimCustomer(CustomerID),
    FOREIGN KEY (ProductID) REFERENCES DimProduct(ProductID),
    FOREIGN KEY (StatusID) REFERENCES DimStatusOrder(StatusID)
);
```