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Wroclaw University of Technology

and

Telecommunications

**Data Warehouses Report 5**

Members:

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**TASK 1:**

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**TASK 2:**

-- Dimension table for Customers

CREATE TABLE Kodzhaaslan.DIM\_CUSTOMER (

    CustomerID INT,

    FirstName NVARCHAR(50),

    LastName NVARCHAR(50),

    TerritoryName NVARCHAR(50),

    CountryRegionCode NVARCHAR(20),

    [Group] NVARCHAR(50)

);

-- Dimension table for Products

CREATE TABLE Kodzhaaslan.DIM\_PRODUCT (

    ProductID INT,

    Name NVARCHAR(50),

    ListPrice DECIMAL(10, 2),

    Color NVARCHAR(15),

    SubCategoryName NVARCHAR(50),

    CategoryName NVARCHAR(50)

);

-- Dimension table for Salespersons

CREATE TABLE Kodzhaaslan.DIM\_SALESPERSON (

    SalesPersonID INT,

    FirstName NVARCHAR(50),

    LastName NVARCHAR(50),

    Title NVARCHAR(50),

    Gender NVARCHAR(10),

    CountryRegionCode NVARCHAR(20),

    [Group] NVARCHAR(50),

    Age INT

);

-- Dimension table for Fact\_Sales

CREATE TABLE Kodzhaaslan.FACT\_SALES (

    ProductID INT,

    CustomerID INT,

    SalesPersonID INT,

    OrderDate INT,

    ShipDate INT,

    OrderQty INT,

    UnitPrice MONEY,

    UnitPricediscount MONEY,

    LineTotal MONEY

);

**DIM\_CUSTOMER**

**Table**: **Kodzhaaslan.DIM\_CUSTOMER** **Attributes**:

* **CustomerID**: Sourced from **Sales.Customer.CustomerID**
* **FirstName**: Sourced from **Person.Person.FirstName** (linked through **Person.BusinessEntityID** to **Sales.Customer**)
* **LastName**: Sourced from **Person.Person.LastName** (linked through **Person.BusinessEntityID** to **Sales.Customer**)
* **TerritoryName**: Sourced from **Sales.SalesTerritory.Name** (linked through **Sales.CustomerTerritoryID** to **Sales.Customer**)
* **CountryRegionCode**: Sourced from **Person.Address.CountryRegionCode** (linked through **Person.Address.AddressID** to **Sales.CustomerAddress**)

**DIM\_PRODUCT**

**Table**: **Kodzhaaslan.DIM\_PRODUCT** **Attributes**:

* **ProductID**: Sourced from **Production.Product.ProductID**
* **Name**: Sourced from **Production.Product.Name**
* **ListPrice**: Sourced from **Production.Product.ListPrice**
* **Color**: Sourced from **Production.Product.Color**
* **SubCategoryName**: Sourced from **Production.ProductSubcategory.Name** (linked through **Production.Product.ProductSubcategoryID** to **Production.Product**)
* **CategoryName**: Sourced from **Production.ProductCategory.Name** (linked through **Production.ProductSubcategory.ProductCategoryID** to **Production.ProductSubcategory**)

**DIM\_SALESPERSON**

**Table**: **Kodzhaaslan.DIM\_SALESPERSON** **Attributes**:

* **SalesPersonID**: Sourced from **Sales.SalesPerson.BusinessEntityID**
* **FirstName**: Sourced from **Person.Person.FirstName** (linked through **Person.BusinessEntityID** to **Sales.SalesPerson**)
* **LastName**: Sourced from **Person.Person.LastName** (linked through **Person.BusinessEntityID** to **Sales.SalesPerson**)
* **Title**: Sourced from **Person.Person.Title**
* **Gender**: Sourced from **Person.Person.Gender**
* **CountryRegionCode**: Sourced from **Person.Address.CountryRegionCode** (linked through **Person.Address.AddressID** to **Sales.SalesPersonAddress**)
* **Group**: Similar to the DIM\_CUSTOMER group, this could be a logical grouping based on performance, region, or other criteria.
* **Age**: Typically calculated from **Person.Person.DateOfBirth**

**FACT\_SALES**

**Table**: **Kodzhaaslan.FACT\_SALES** **Attributes**:

* **ProductID**: Sourced from **Sales.SalesOrderDetail.ProductID**
* **CustomerID**: Sourced from **Sales.SalesOrderHeader.CustomerID**
* **SalesPersonID**: Sourced from **Sales.SalesOrderHeader.SalesPersonID**
* **OrderDate**: Sourced and transformed from **Sales.SalesOrderHeader.OrderDate**
* **ShipDate**: Sourced and transformed from **Sales.SalesOrderHeader.ShipDate**
* **OrderQty**: Sourced from **Sales.SalesOrderDetail.OrderQty**
* **UnitPrice**: Sourced from **Sales.SalesOrderDetail.UnitPrice**
* **UnitPricediscount**: Sourced from **Sales.SalesOrderDetail.UnitPriceDiscount**
* **LineTotal**: Sourced from **Sales.SalesOrderDetail.LineTotal** or calculated as **UnitPrice \* OrderQty - UnitPriceDiscount**

**TASK 3:**

**DIM\_CUSTOMER Insert**

INSERT INTO Kodzhaaslan.DIM\_CUSTOMER (CustomerID, FirstName, LastName, TerritoryName, CountryRegionCode)

SELECT

    c.CustomerID,

    p.FirstName,

    p.LastName,

    t.Name AS TerritoryName,

    sp.CountryRegionCode

FROM Sales.Customer AS c

JOIN Person.Person AS p ON c.PersonID = p.BusinessEntityID

JOIN Person.BusinessEntityAddress AS bea ON p.BusinessEntityID = bea.BusinessEntityID

JOIN Person.Address AS a ON bea.AddressID = a.AddressID

JOIN Person.StateProvince AS sp ON a.StateProvinceID = sp.StateProvinceID

JOIN Sales.SalesTerritory AS t ON c.TerritoryID = t.TerritoryID;

**DIM\_PRODUCT Insert**

INSERT INTO Kodzhaaslan.DIM\_PRODUCT (ProductID, Name, ListPrice, Color, SubCategoryName, CategoryName)

SELECT

    p.ProductID,

    p.Name,

    p.ListPrice,

    p.Color,

    ISNULL(sc.Name, 'No Subcategory'),

    ISNULL(cat.Name, 'No Category')

FROM Production.Product AS p

LEFT JOIN Production.ProductSubcategory AS sc ON p.ProductSubcategoryID = sc.ProductSubcategoryID

LEFT JOIN Production.ProductCategory AS cat ON sc.ProductCategoryID = cat.ProductCategoryID;

**DIM\_SALESPERSON Insert**

USE AdventureWorks2014;

GO

INSERT INTO Kodzhaaslan.DIM\_SALESPERSON (SalesPersonID, FirstName, LastName, Title, CountryRegionCode)

SELECT

s.BusinessEntityID,

p.FirstName,

p.LastName,

p.Title,

sp.CountryRegionCode

FROM Sales.SalesPerson AS s

JOIN Person.Person AS p ON s.BusinessEntityID = p.BusinessEntityID

JOIN Person.BusinessEntityAddress AS bea ON s.BusinessEntityID = bea.BusinessEntityID

JOIN Person.Address AS a ON bea.AddressID = a.AddressID

JOIN Person.StateProvince AS sp ON a.StateProvinceID = sp.StateProvinceID;

**FACT\_SALES Insert**

INSERT INTO Kodzhaaslan.FACT\_SALES (ProductID, CustomerID, SalesPersonID, OrderDate, ShipDate, OrderQty, UnitPrice, UnitPricediscount, LineTotal)

SELECT

    sod.ProductID,

    soh.CustomerID,

    ISNULL(soh.SalesPersonID, 0) AS SalesPersonID,

    CONVERT(INT, REPLACE(CONVERT(VARCHAR, soh.OrderDate, 112), '-', '')) AS OrderDate,

    CONVERT(INT, REPLACE(CONVERT(VARCHAR, soh.ShipDate, 112), '-', '')) AS ShipDate,

    sod.OrderQty,

    sod.UnitPrice,

    sod.UnitPriceDiscount,

    sod.LineTotal

FROM Sales.SalesOrderHeader AS soh

JOIN Sales.SalesOrderDetail AS sod ON soh.SalesOrderID = sod.SalesOrderID;

**TASK 4:**

**Primary Keys:**

-- Add primary key to DIM\_CUSTOMER

ALTER TABLE Kodzhaaslan.DIM\_CUSTOMER

ADD CONSTRAINT PK\_DIM\_CUSTOMER PRIMARY KEY (CustomerID);

-- Add primary key to DIM\_PRODUCT

ALTER TABLE Kodzhaaslan.DIM\_PRODUCT

ADD CONSTRAINT PK\_DIM\_PRODUCT PRIMARY KEY (ProductID);

-- Add primary key to DIM\_SALESPERSON

ALTER TABLE Kodzhaaslan.DIM\_SALESPERSON

ADD CONSTRAINT PK\_DIM\_SALESPERSON PRIMARY KEY (SalesPersonID);

-- Add primary key to FACT\_SALES

ALTER TABLE Kodzhaaslan.FACT\_SALES

ADD CONSTRAINT PK\_FACT\_SALES PRIMARY KEY (ProductID, CustomerID, SalesPersonID);

**Foreign Keys:**

-- Add foreign key from FACT\_SALES to DIM\_CUSTOMER

ALTER TABLE Kodzhaaslan.FACT\_SALES

ADD CONSTRAINT FK\_FACT\_SALES\_CUSTOMER FOREIGN KEY (CustomerID)

REFERENCES Kodzhaaslan.DIM\_CUSTOMER (CustomerID);

-- Add foreign key from FACT\_SALES to DIM\_PRODUCT

ALTER TABLE Kodzhaaslan.FACT\_SALES

ADD CONSTRAINT FK\_FACT\_SALES\_PRODUCT FOREIGN KEY (ProductID)

REFERENCES Kodzhaaslan.DIM\_PRODUCT (ProductID);

-- Add foreign key from FACT\_SALES to DIM\_SALESPERSON

ALTER TABLE Kodzhaaslan.FACT\_SALES

ADD CONSTRAINT FK\_FACT\_SALES\_SALESPERSON FOREIGN KEY (SalesPersonID)

REFERENCES Kodzhaaslan.DIM\_SALESPERSON (SalesPersonID);

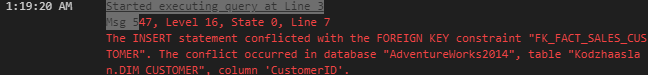
**Testing:**

-- Attempt to insert invalid data into FACT\_SALES

INSERT INTO Kodzhaaslan.FACT\_SALES (ProductID, CustomerID, SalesPersonID, OrderDate, ShipDate, OrderQty, UnitPrice, UnitPricediscount, LineTotal)

VALUES (1, 99999, 1, 20210101, 20210105, 10, 100.00, 0.00, 1000.00);

Should throw an error



INSERT INTO Kodzhaaslan.FACT\_SALES (ProductID, CustomerID, SalesPersonID, OrderDate, ShipDate, OrderQty, UnitPrice, UnitPriceDiscount, LineTotal)

VALUES

(706, 11000, 275, 20210101, 20210105, 10, 100.00, 0.00, 1000.00);

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**Task 5:**

**1. Remove the DIM\_CUSTOMER Table**

IF EXISTS (

    SELECT \*

    FROM INFORMATION\_SCHEMA.TABLES

    WHERE TABLE\_SCHEMA = 'Kodzhaaslan'

    AND TABLE\_NAME = 'DIM\_CUSTOMER'

)

BEGIN

    ALTER TABLE Kodzhaaslan.FACT\_SALES DROP CONSTRAINT FK\_FACT\_SALES\_CUSTOMER;

    DROP TABLE Kodzhaaslan.DIM\_CUSTOMER;

END

**2. Remove the DIM\_PRODUCT Table**

IF EXISTS (

    SELECT \*

    FROM INFORMATION\_SCHEMA.TABLES

    WHERE TABLE\_SCHEMA = 'Kodzhaaslan'

    AND TABLE\_NAME = 'DIM\_PRODUCT'

)

BEGIN

    ALTER TABLE Kodzhaaslan.FACT\_SALES DROP CONSTRAINT FK\_FACT\_SALES\_PRODUCT;

    DROP TABLE Kodzhaaslan.DIM\_PRODUCT;

END

**3. Remove the DIM\_SALESPERSON Table**

IF EXISTS (

    SELECT \*

    FROM INFORMATION\_SCHEMA.TABLES

    WHERE TABLE\_SCHEMA = 'Kodzhaaslan'

    AND TABLE\_NAME = 'DIM\_SALESPERSON'

)

BEGIN

    ALTER TABLE Kodzhaaslan.FACT\_SALES DROP CONSTRAINT FK\_FACT\_SALES\_SALESPERSON ;

    DROP TABLE Kodzhaaslan.DIM\_SALESPERSON;

END

**4. Remove the FACT\_SALES Table**

**IF EXISTS (**

**SELECT \***

**FROM INFORMATION\_SCHEMA.TABLES**

**WHERE TABLE\_SCHEMA = 'Kodzhaaslan'**

**AND TABLE\_NAME = 'FACT\_SALES'**

**)**

**BEGIN**

**DROP TABLE Kodzhaaslan.FACT\_SALES;**

**END**