

# DW Lab Assignment – Day 4 (Oracle Solution)

## Table Creation (Oracle)

```
CREATE TABLE DIM_Company (
    Company_ID NUMBER PRIMARY KEY,
    Industry_Name VARCHAR2(50),
    Industry_ID NUMBER,
    Company_Name VARCHAR2(100),
    Company_Size NUMBER
);

CREATE TABLE DIM_Product (
    Product_ID NUMBER PRIMARY KEY,
    Prod_Name VARCHAR2(100),
    Category_ID NUMBER
);

CREATE TABLE DIM_Sales_Type (
    Sales_Type_ID NUMBER PRIMARY KEY,
    Type_Name VARCHAR2(50)
);

CREATE TABLE DIM_Sales_Rep (
    Employee_ID NUMBER PRIMARY KEY,
    First_Name VARCHAR2(50),
    Last_Name VARCHAR2(50)
);

CREATE TABLE DIM_Time (
    Date_ID NUMBER PRIMARY KEY,
    Year_ID NUMBER,
    Month_ID NUMBER,
    Week_ID NUMBER,
    Purchase_Date DATE
);

CREATE TABLE Fact_Sales (
    Sales_ID NUMBER PRIMARY KEY,
    Product_ID NUMBER,
    Sales_Type_ID NUMBER,
    Company_ID NUMBER,
    Employee_ID NUMBER,
    Items_Sold NUMBER,
    Sales_Amount NUMBER(12,2),
    Date_ID NUMBER,
    CONSTRAINT fk_product FOREIGN KEY (Product_ID) REFERENCES DIM_Product(Product_ID),
    CONSTRAINT fk_sales_type FOREIGN KEY (Sales_Type_ID) REFERENCES DIM_Sales_Type(Sales_Type_ID),
    CONSTRAINT fk_company FOREIGN KEY (Company_ID) REFERENCES DIM_Company(Company_ID),
    CONSTRAINT fk_sales_rep FOREIGN KEY (Employee_ID) REFERENCES DIM_Sales_Rep(Employee_ID),
    CONSTRAINT fk_time FOREIGN KEY (Date_ID) REFERENCES DIM_Time(Date_ID)
);
```

## Sample Data Insertion

```
INSERT INTO DIM_Product VALUES (1, 'Laptop', 10);
INSERT INTO DIM_Product VALUES (2, 'Mouse', 10);
INSERT INTO DIM_Product VALUES (3, 'Office Chair', 20);

INSERT INTO DIM_Company VALUES (1, 'IT', 100, 'Tech Corp', 500);
INSERT INTO DIM_Company VALUES (2, 'Retail', 200, 'SuperStore', 300);

INSERT INTO DIM_Sales_Type VALUES (1, 'Online');
INSERT INTO DIM_Sales_Type VALUES (2, 'Offline');

INSERT INTO DIM_Sales_Rep VALUES (1, 'Amit', 'Sharma');
INSERT INTO DIM_Sales_Rep VALUES (2, 'Neha', 'Verma');

INSERT INTO DIM_Time VALUES (20250420, 2025, 4, 16, DATE '2025-04-20');
INSERT INTO DIM_Time VALUES (20250421, 2025, 4, 16, DATE '2025-04-21');
INSERT INTO DIM_Time VALUES (20250422, 2025, 4, 16, DATE '2025-04-22');

INSERT INTO Fact_Sales VALUES (1, 1, 1, 1, 1, 1, 55000, 20250420);
INSERT INTO Fact_Sales VALUES (2, 2, 1, 2, 2, 2, 2400, 20250421);
INSERT INTO Fact_Sales VALUES (3, 3, 2, 1, 1, 5, 25000, 20250422);
```

## Analytical Queries

```
-- Total Sales by Product
SELECT p.Prod_Name,
       SUM(f.Sales_Amount) AS Total_Sales
FROM Fact_Sales f
JOIN DIM_Product p ON f.Product_ID = p.Product_ID
GROUP BY p.Prod_Name;

-- Sales by Company
SELECT c.Company_Name,
       SUM(f.Sales_Amount) AS Total_Sales
FROM Fact_Sales f
JOIN DIM_Company c ON f.Company_ID = c.Company_ID
GROUP BY c.Company_Name;

-- Monthly Sales Analysis
SELECT t.Month_ID,
       SUM(f.Sales_Amount) AS Monthly_Sales
FROM Fact_Sales f
JOIN DIM_Time t ON f.Date_ID = t.Date_ID
GROUP BY t.Month_ID
ORDER BY t.Month_ID;

-- Highest Selling Product
SELECT p.Prod_Name,
       SUM(f.Sales_Amount) AS Total_Sales
FROM Fact_Sales f
JOIN DIM_Product p ON f.Product_ID = p.Product_ID
GROUP BY p.Prod_Name
ORDER BY Total_Sales DESC
FETCH FIRST 1 ROW ONLY;
```

