INFO7370 **Instructor: Richard Sherman**

Team Homework **Assigned: September 30, 2020**

Adventure Works Purchasing DW

Databases:

- Source database: AdventureWorks2017 (SQL Server)

- Target databases for data models: AdventureWorks_PurchasingDW (student creates). Implement complete DW schema on:
    - MySQL
    - Oracle
- Target databases for data models:
    - MySQL using Alteryx
    - Oracle using Talend

Objectives:

Create a DW containing data from AdventureWorks2017 that can be used by the business the answer questions on:

- All product purchases made by AdventureWorks from vendors, i.e. purchase orders
- List of products that might be purchased from Vendors, in other words, all the products that are not made by AdventureWorks
    - Need to include product attributes such as list price, standard cost, model name, subcategory name and category name.
    - Note: if hierarchy applicable then this needs to be a star and NOT a snowflake design
- A slowly changing dimension (SCD) for list prices for products above
    - SCD 2 or higher
- A slowly changing dimension (SCD) for standards costs for products above
    - SCD 2 or higher
- Vendors that AdventureWorks might purchase products from
- Products that AdventureWorks might purchase from vendors and associated with the vendors that sell them.
- Vendors' employees who interact with AdventureWorks and include attributes about those people.
- AdventureWorks' employees who have bought products from vendors and include attributes about those people.
- A slowly changing dimension (SCD) for AdventureWorks employee pay (only employees listed above)
    - SCD 2 or higher
- AdventureWorks' sales territories
- AdventureWorks' ship methods
- A geography dimension that AdventureWorks could use as outrigger for dimensions above.
- A calendar dimension that AdventureWorks could use for facts and dimensions
- AdventureWorks product inventory for purchase products and locations stored in

The tables created and data in each is based on your design. There may need to be additional dimensional tables based on how you design the target database

Tasks:

Part 1 of 4: 10/1 Perform data profiling using:

- SQL Queries
- Microsoft Power BI
- List of tables from source system that is needed to answer queries and build DW

Part 2 of 4: 10/8 Create DW schema in target database(s).

- Create dimensional data model in E/R studio
- Create SQL Scripts (DDL)
- Create tables in your DW

Part 3 of 4: 10/15 Load data into Purchasing DW using Alteryx

- Load data into Purchasing DW using Alteryx
- Perform data profiling & creating BI answering questions from Week 1 with new Purchasing DW

Part 4 of 4: 10/29 Load data into Purchasing DW using Talend

- Load data into Purchasing DW using Talend

Business questions for data profiling & BI visualizations:

- Queries (SQL queries): Answer using existing AdventureWorks2017, not new schema
    - Ranked order of Vendors by purchase amount $
    - Ranked order of products purchased by amount $
        - By category
        - By subcategory
        - By product model (top 20)
        - By product (top 20)
    - List of employees who purchased products with phone, email & address
    - List of employees who purchased products with pay rate & raises (SCD)
    - List of purchasing vendor contacts with vendor name, phone, email & address
    - List of product prices by product order by product and SCD effective ascending
    - List of standard costs by product order by product and SCD effective ascending

- Microsoft Power BI: Answer using existing AdventureWorks2017, not new schema
    - Ranked order of Vendors by purchase amount $
    - Ranked order of products purchased by amount $
        - By category
        - By subcategory
        - By product model (top 20)
        - By product (top 20)
    - List of employees who purchased products with phone, email & address
    - List of employees who purchased products with pay rate & raises
    - List of purchasing vendor contacts with vendor name, phone, email & address