Faculty of Computers and Artificial Intelligence Cairo University

Data Warehouse Term Project

**Project Name**

Mega Store

Phase 2

**Prepared for**

Eng\Alaa Adel

**Prepared By**

|  |  |
| --- | --- |
| **ID** | **Name** |
| 20200026 | Ahmed Abdelhameed |
| 20200456 | Mohamed Attef |
| 20200196 | Ziad Osama |
| 20201189 | Nada Emad |
| 20201191 | Nada Mohamed |

**Modified ERD**

Diagram, schematic

Description automatically generated

1. **Control flow**

Loading the date from Excel sheets to OLE DB(SRC)

Graphical user interface

Description automatically generated

Loading the STG tables then dimensions

Graphical user interface

Description automatically generated

Graphical user interface

Description automatically generated

Graphical user interface

Description automatically generated

Loading the fact tables

Graphical user interface

Description automatically generated

**2. Data flow**

STG\_Customer table: Using Look up to get the city name fromt table address full address and then get the city name from table city and get the store name from table Store and use derived column to get the current date

Graphical user interface

Description automatically generated

**3. Load CustomerDIM**

Condition split if the current last update column greater than variable in SSIS named LastUpdateTime and look up to check if this record is already exist or no. then if exist write OLE Query to update the End date and then insert the record then use derived column to get the Current date then sort the data by customer ID (asc) then load to the DIM

Graphical user interface, application, Teams

Description automatically generated

Graphical user interface, application, Teams

Description automatically generated

Graphical user interface

Description automatically generatedLoad Employee to STG\_Employee using look up to get full address then city name then store name and get the Current date as derived column

Condition split if the current last update column greater than variable in SSIS named LastUpdateTime and look up to check if this record is already exist or no. then if exist write OLE Query to update the End date and then insert the record then use derived column to get the Current date then sort the data by employee ID (asc) then load to the DIM

Graphical user interface

Description automatically generated

Loading STG\_Store using lookup to get the full address and then City name and store name from (Store table) and Current date as derived column

Graphical user interface

Description automatically generated

Loading Store Dim. Condition split if the current last update column greater than variable in SSIS named LastUpdateTime and look up to check if this record is already exist or no. then if exist write OLE Query to update the End date and then insert the record then use derived column to get the Current date then sort the data by Store ID (asc) then load to the DIM

Graphical user interface

Description automatically generated

Diagram

Description automatically generated

Graphical user interface, application

Description automatically generatedLoad the STG\_Product using lookup to get the full category name and current date as derived column.

Loading Product Dim. Condition split if the current last update column greater than variable in SSIS named LastUpdateTime and look up to check if this record is already exist or no. then if exist write OLE Query to update the End date and then insert the record then use derived column to get the Current date then sort the data by Product ID (asc) then load to the DIM

Graphical user interface

Description automatically generated

Graphical user interface

Description automatically generated

Load STG\_Location using look up to get the city name and current date as derived column

Graphical user interface, diagram, application

Description automatically generated

Load DIM\_Location and assuming that it won’t be slowly changing dim we will check just check if it’s a new record or not as it’s expected that the End date will not change

Graphical user interface, application

Description automatically generated

Load STG\_Employee\_Performance using lookup to get store ID from table Store and then group by Store ID, Employee ID and date then Sum the amount sold

Graphical user interface, application

Description automatically generated

Load the Fact table Employee\_Perfomance using conditional split to check if it’s a new record or not then look up the DIM\_Date to get the date key and then lookup to DIM\_Employee to get the Employee key and get the Store key from DIM\_Store

Graphical user interface, application

Description automatically generated

Load STG\_Sales\_Customer using look up to get the price of some product id then calculate the price \* quantity sold then group by customer id and payment date and product id then get the current date as a derived column

Graphical user interface

Description automatically generated

Load the Fact table Fact\_Sales\_Customer using conditional split to check if it’s a new record or not then look up the DIM\_Date to get the date key and then lookup to DIM\_Customer to get the Customer key and get the Product key from DIM\_Product

Graphical user interface, application

Description automatically generated

Load STG\_Inventory group by product ID and Address ID and then sort by total amount then current date as derived column.

Graphical user interface, application

Description automatically generated

Load Fact table Fact\_Inventory if it’s a new record and get the date key from DIM\_Date and then get the Address key from DIM\_Location then the Product key from DIM\_Product

Graphical user interface

Description automatically generated

**Queries**

**Query1: for Employee Performance fact table to get the best employee that sell maximum amount in some Year (variable in SSIS).**

select Top 1 Fact\_Employee\_Performance.EmployeeID, Dim\_Date.Month, sum (Amount) as Amount

from Fact\_Employee\_Performance, Dim\_Date

where Dim\_Date.DateKey = Fact\_Employee\_Performance.DateID and Dim\_Date.Year >=?

group by Dim\_Date.Month, Fact\_Employee\_Performance.EmployeeID

order by Amount Desc

A screenshot of a computer

Description automatically generated with medium confidenceGraphical user interface, application

Description automatically generated

**Query2: This query gets the lowest product in my inventory which I should increase**

SELECT Top 1 ProductID, LocationID, Min (Amount) AS Total

FROM Fact\_Inventory

GROUP BY ProductID, LocationID

ORDER BY Total

Graphical user interface, application

Description automatically generated

Graphical user interface, application

Description automatically generated

**Query3: used to select the top customer to get some offers**

SELECT TOP (1) Fact\_Sales\_Customer.CustomerID, Fact\_Sales\_Customer.ProductID, SUM(Fact\_Sales\_Customer.Total) AS Total

FROM Fact\_Sales\_Customer INNER JOIN

Dim\_Date ON Fact\_Sales\_Customer.DateID = Dim\_Date.DateKey

WHERE (Dim\_Date.[Year] >= ?) AND (Dim\_Date. [Month] =?)

GROUP BY Fact\_Sales\_Customer.ProductID, Fact\_Sales\_Customer.CustomerID

ORDER BY Total DESC

Graphical user interface, application

Description automatically generated

A screenshot of a computer

Description automatically generated with medium confidence

**Deployment**

Deployment of the queries of each fact table

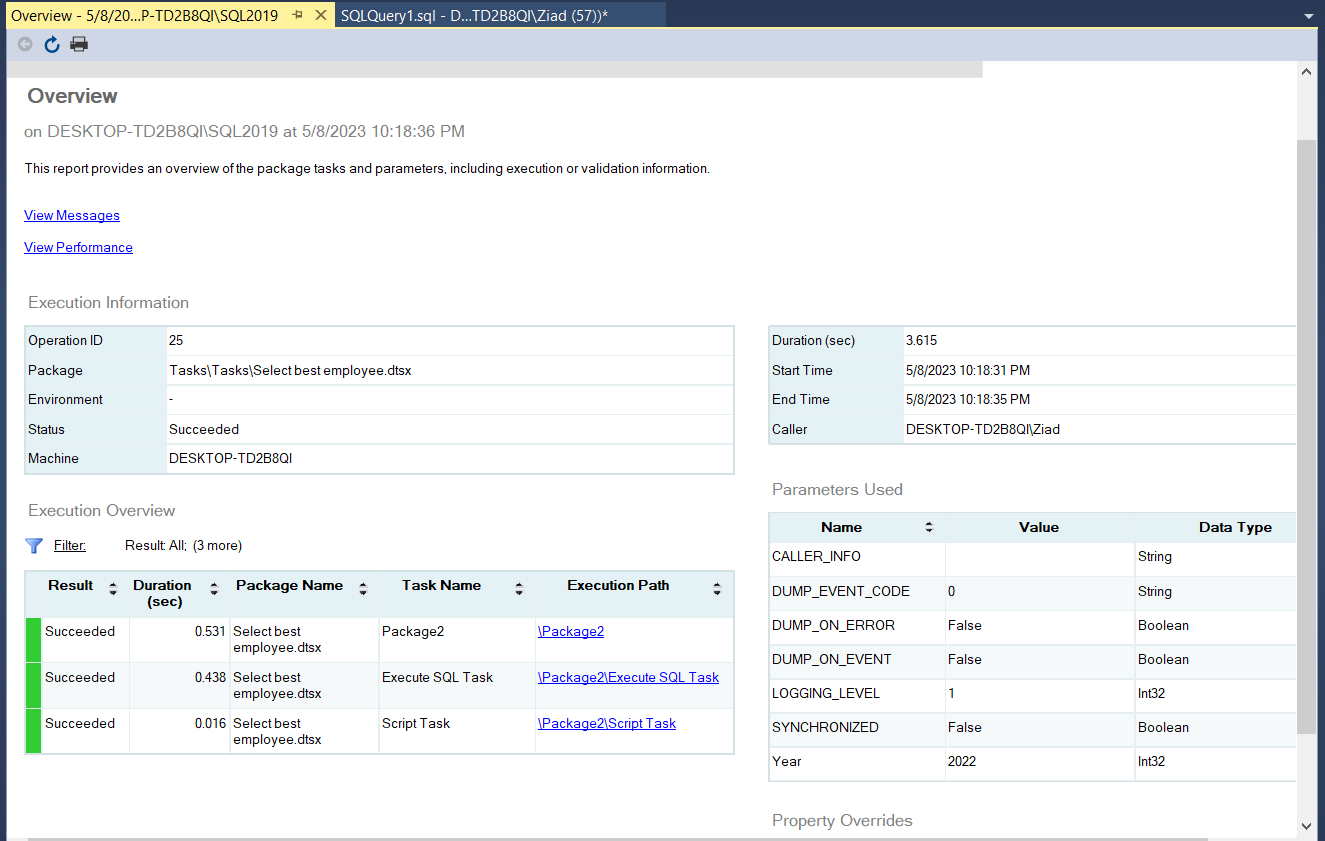
Graphical user interface

Description automatically generated

Graphical user interface

Description automatically generatedThe schedule for the tasks weakly every sun date at 12:00:00AM

**Package result**

**best employee**

**A screenshot of a computer

Description automatically generatedLowest product**

**Best Customer**

A screenshot of a computer

Description automatically generated

**Bonus: -**

**Interactive dashboard for the DWH (BI tool)**

Chart

Description automatically generated