Milestone 2

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Lessons Learned

Database management in shipment company is critical since any flaw in data directly impacts the customer. Besides being a customer centric company, there are other parties involved like suppliers and shippers; all of which make capturing the information more difficult and knowledge management process more complex. We have tried to present a database structure and an information system in this study that can be used to capture dispersed information in the form of "lessons learned" as they accumulate during a data architecture project.

Most challenging and learning part for us was Data Management, since we had to maintain an internal database for every stakeholder (customer, supplier, shipper, employee) such that every stakeholder has access to its complete information, and they do not have access to other stakeholder's information. Hence, we created few views and analytical queries using MySQL and Power BI dashboard so that respective information can be viewed. Example: customer can view their invoices, without any access to internal database structure, suppliers can view their products information. We also created stored procedures keeping in mind that if any tracking of customer or sales is required or insertion and updating of product is required, that can we done just using a simple call procedure and putting values.

Query Type	Problem Statement	Learning
View: vw_Order_Sales	What are the sales per order? This can be used to create Average Order Value (AOV) by using a simple select query as follows: Select AVG(Sales) as AOV from vw_Order_Sales	AOV is determined using sales per order, not sales per customer. Although one customer may come back multiple times to make a purchase, each order would be factored into AOV separately.
View: vw_Invoices	What is the invoice for each order for a customer?	This query includes advance select statement to join multiple tables to display all the invoice details like expected arrival date, shipped date, order details, customer details, etc. If anyone wants to view customer invoice, he/she can use simple select query to search the view by order id or customer id or other information.

View: vw_Products_Above_Average_Price	What and how many products have unit price more than the average unit price?	This query displays all the products with unit price more than average unit price. Using a simple select query we can count the products as well.
View:vw_Alphabetical_list_of_products	Display all the products with their IDs and information in alphabetical order of the Product Name	This query displays all the products information from multiple tables (like category table) and using simple select query we can easily view products information on the basis of their name or category.
Procedure: sp_CustOrdersTracking	What is order information of required customer?	This procedure can be executed every time an order needs to be tracked. Just provide customerID as an input and we are good to go.
Procedure: sp_Sales_by_Month	What are the sales between two dates? (We have considered shipped date here because we consider an order to be completed only after it is shipped and hence cannot be cancelled)	This procedure is executed every time sales between two dates (for example Weekly or Monthly or Quarterly) need to be viewed. Just provide a start date and end date as an input.
Procedure: sp_AddModify_OrderDetailsAndProducts	What are the remaining in stock quantities of a product every time an order is place?	This procedure is executed every time an order is placed or cancelled to update the quantity of product in the warehouse. Just provide orderID, productID and quantity of the product ordered.
Procedure: sp_AddModify_Products	What are the products in stock every time a new lot of products is brought in?	This procedure is executed every time a new lot of products is brought in the warehouse, if product id is already there in stock quantity is increased, if not a new product type is inserted in the products table
Analytical Query 1	What are the sales for each product of each supplier?	This analytical query is executed to get an overview of sales for each product type and supplier.
Analytical Query 2	Where do customers come from? Which region has most customers?	This analytical query is executed to get total number of customers in each region.