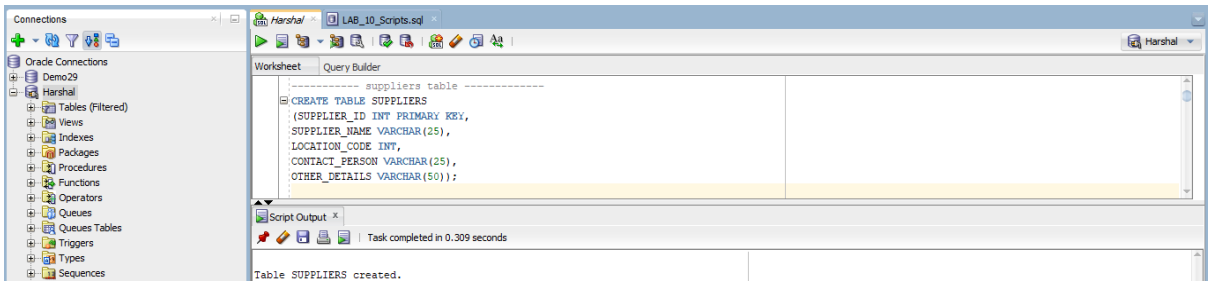
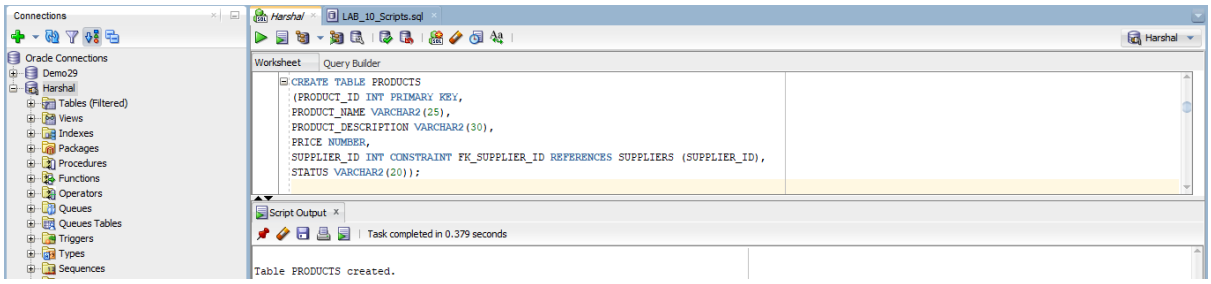
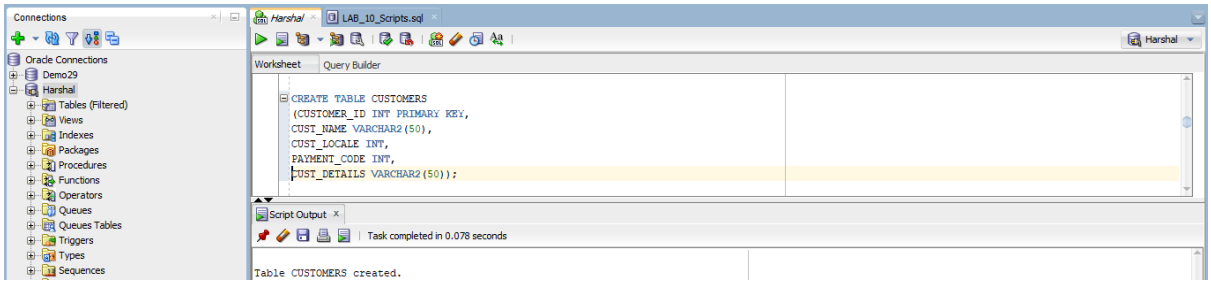
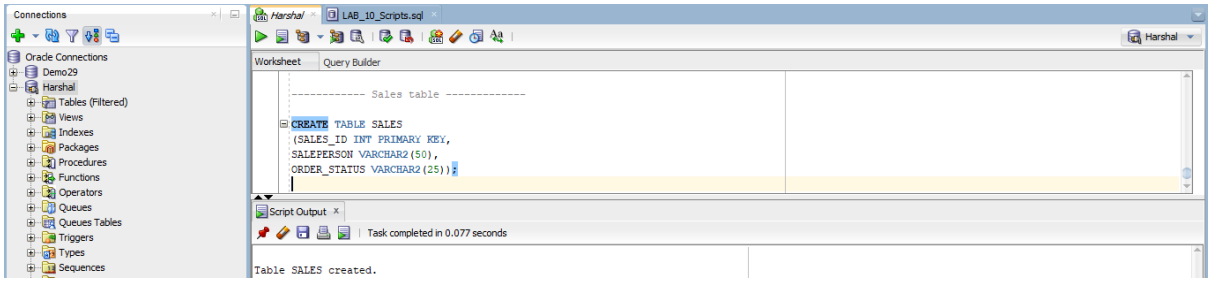
Lab 10 Submittal

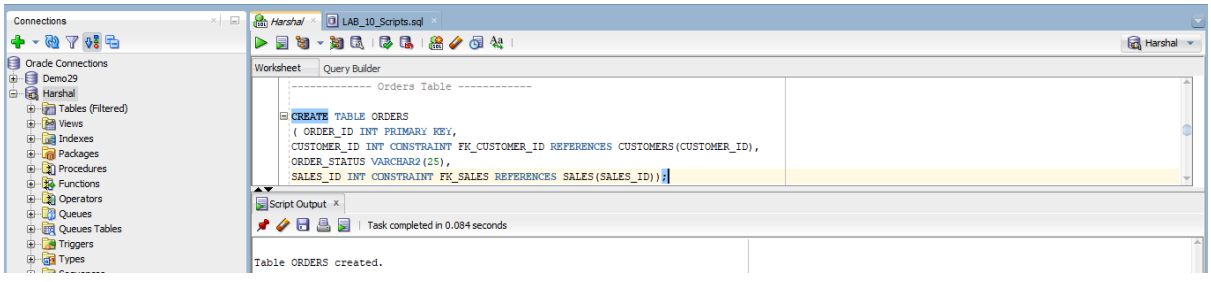
Step 1: Create the Tables

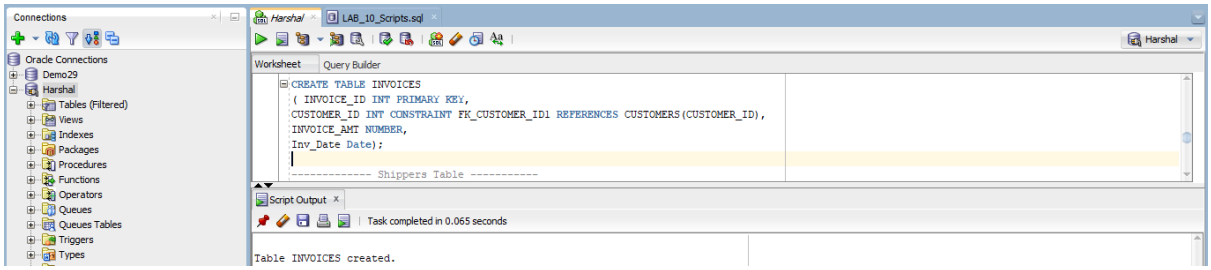


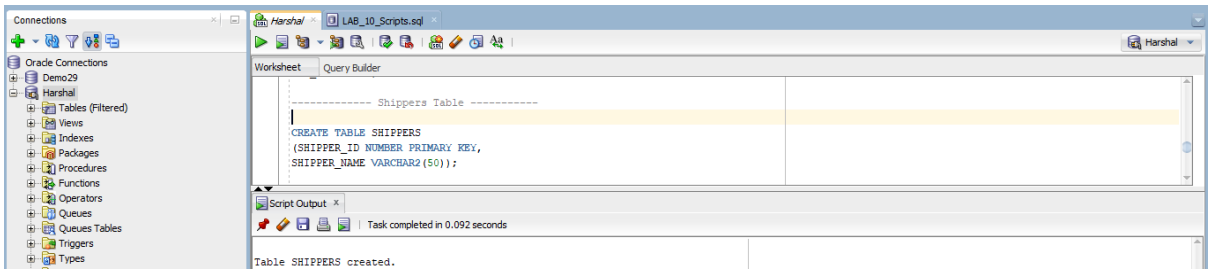


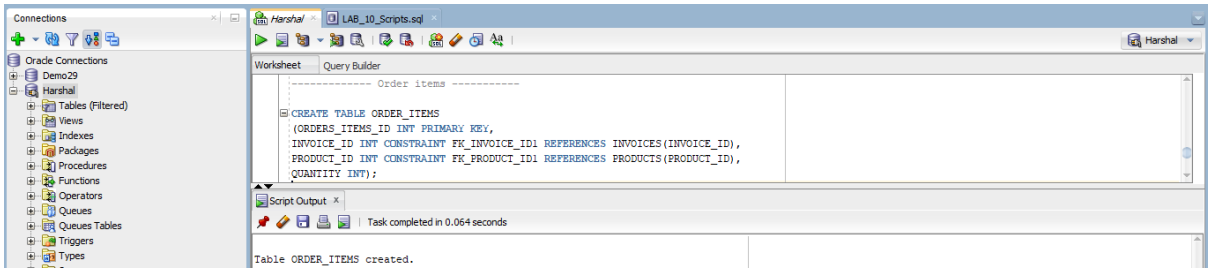






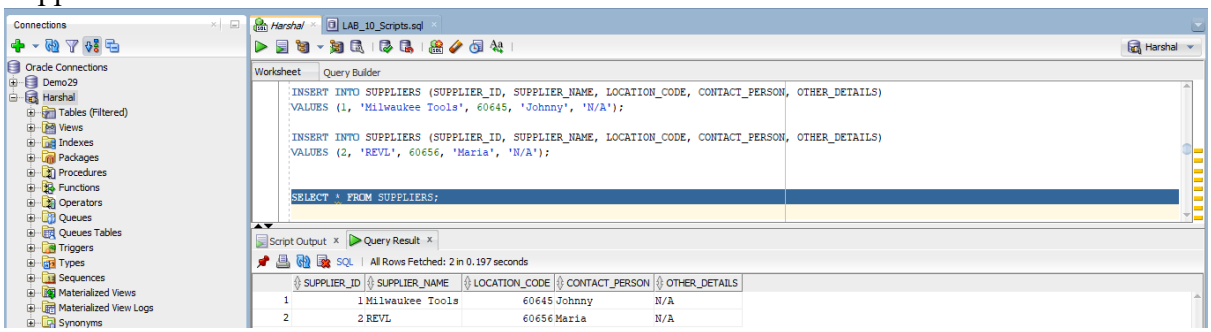




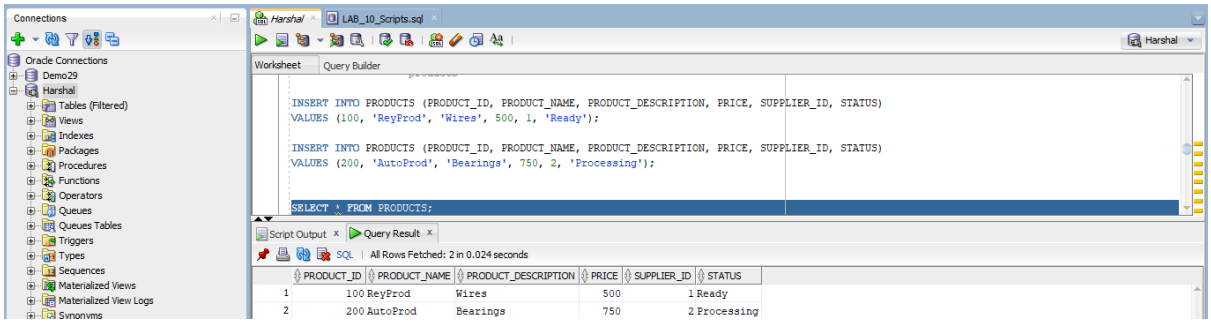


Part 2: Populating the Tables

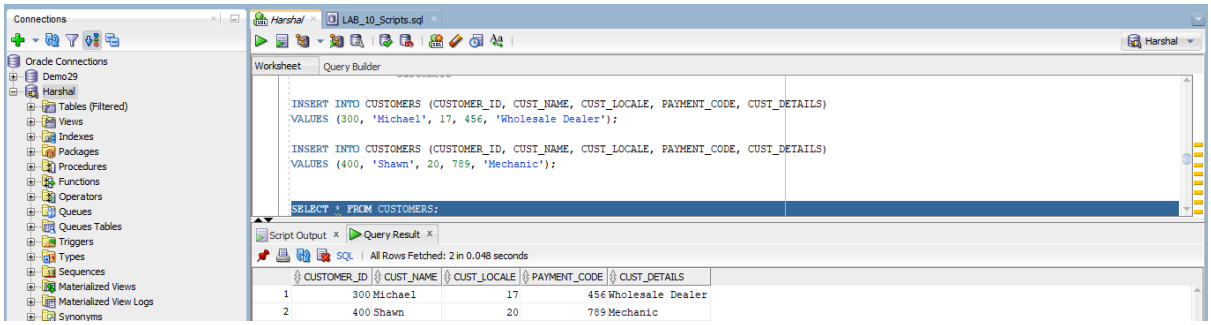
Suppliers:



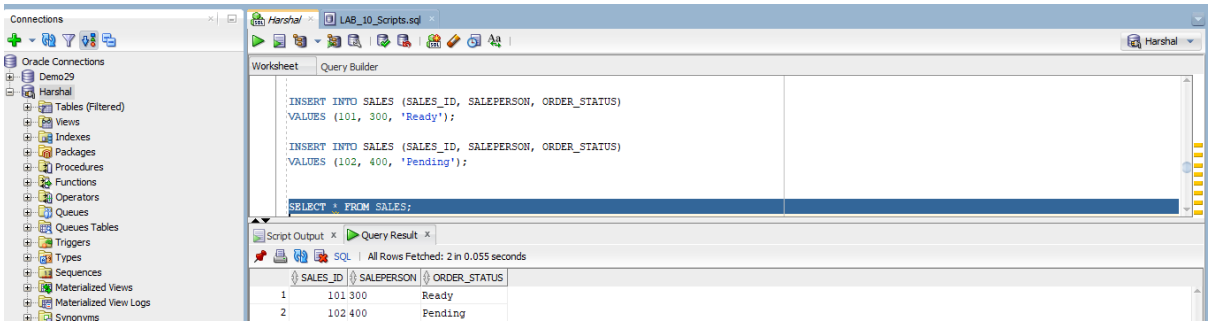
Products:



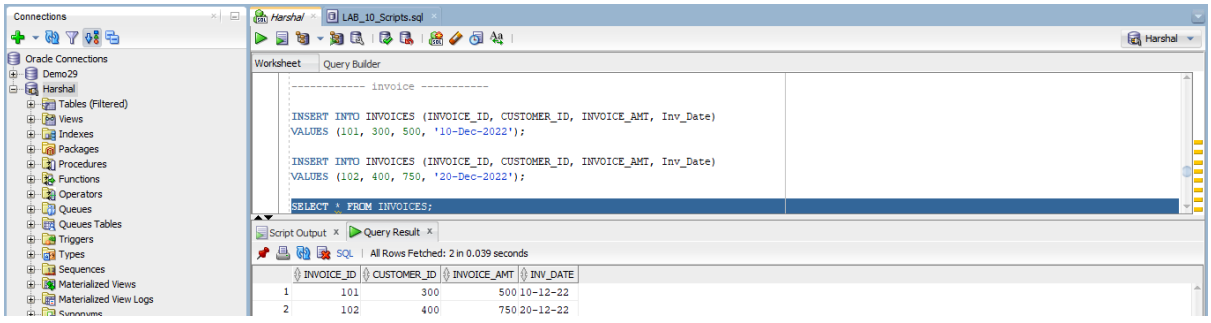
Customers:



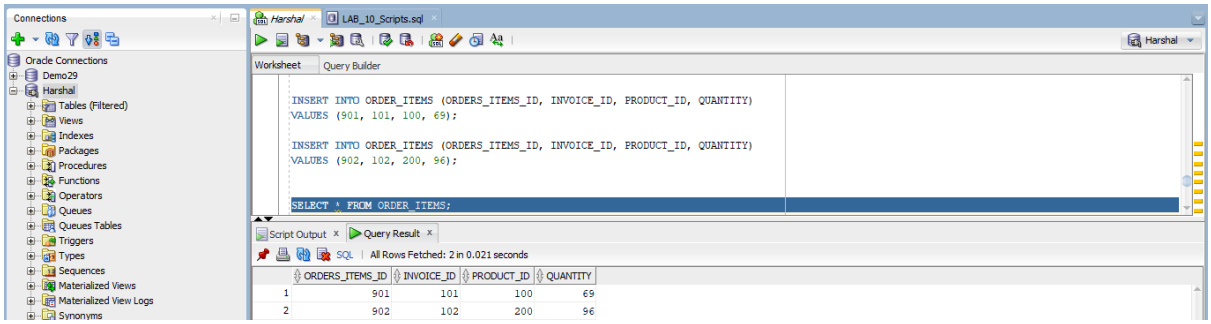
Sales:



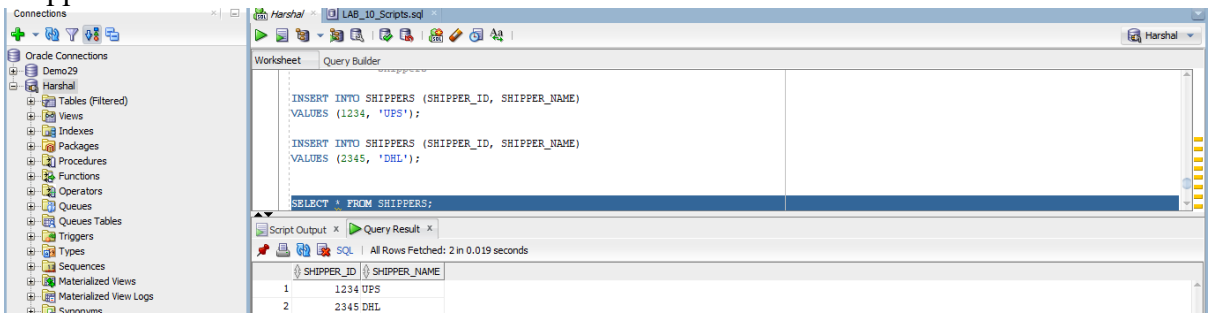
Invoices:



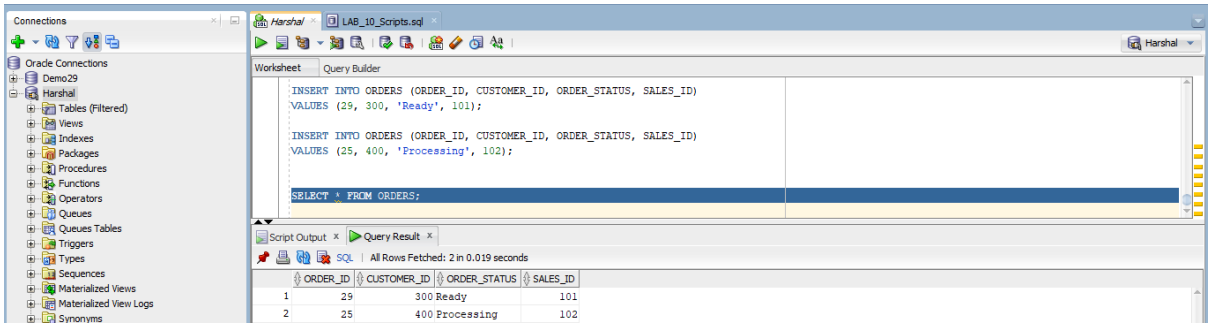
Order items:



Shippers:



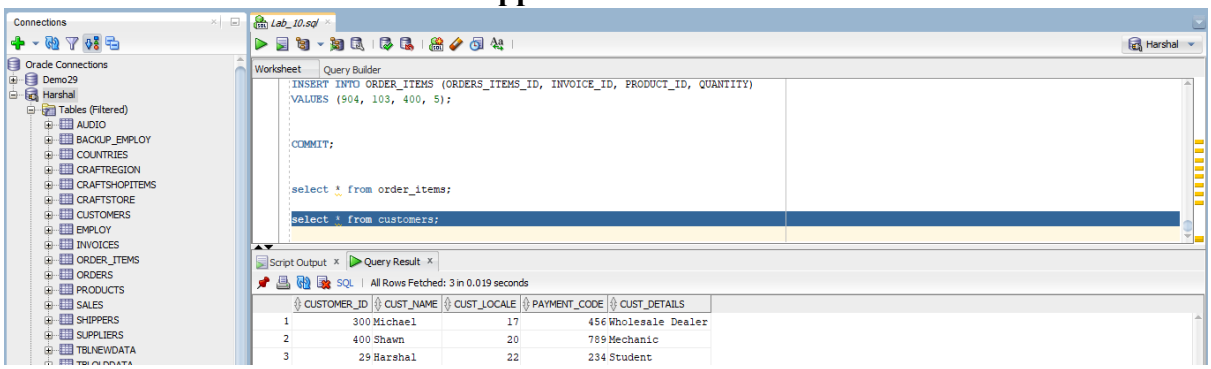
Orders:



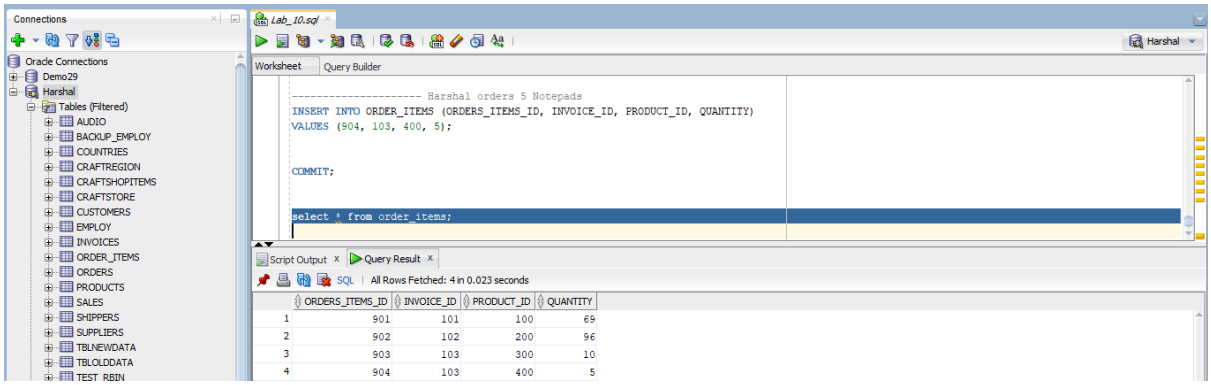
Step 3: Cycle through the Supply Chain Process

Action 1:

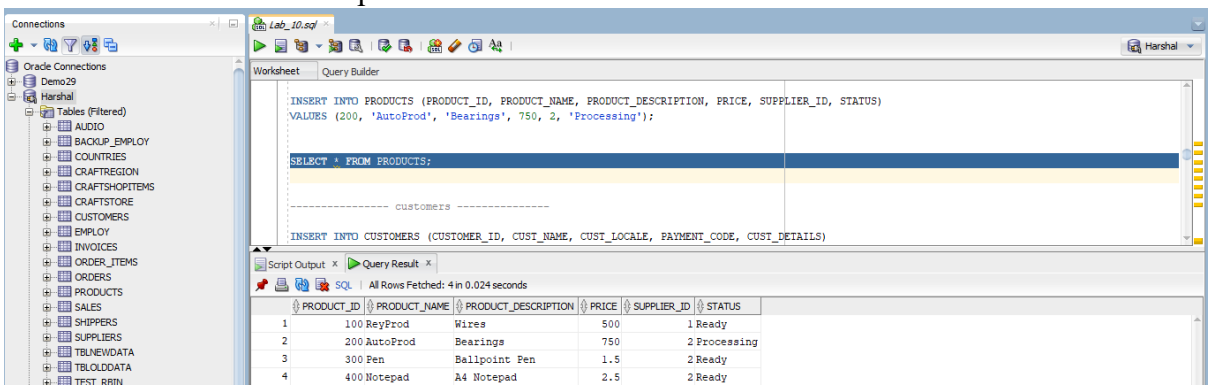
Customer Harshal orders 2 office supplies:



Last two entries define the two office supplies

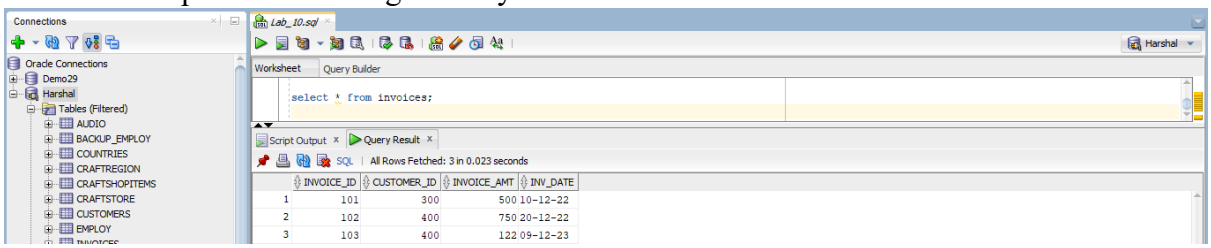


The last two entries are the product names

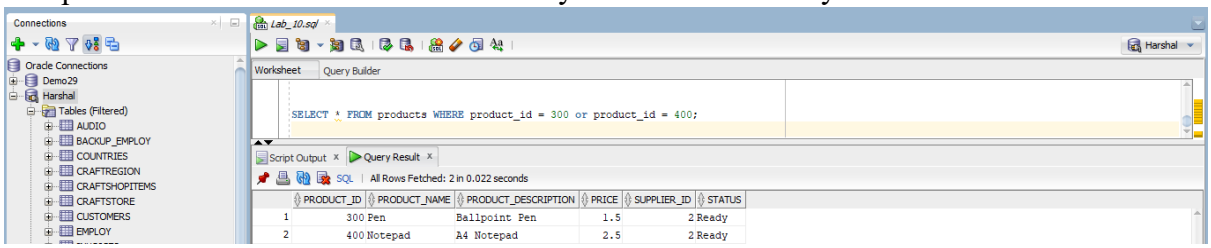


Action 2:

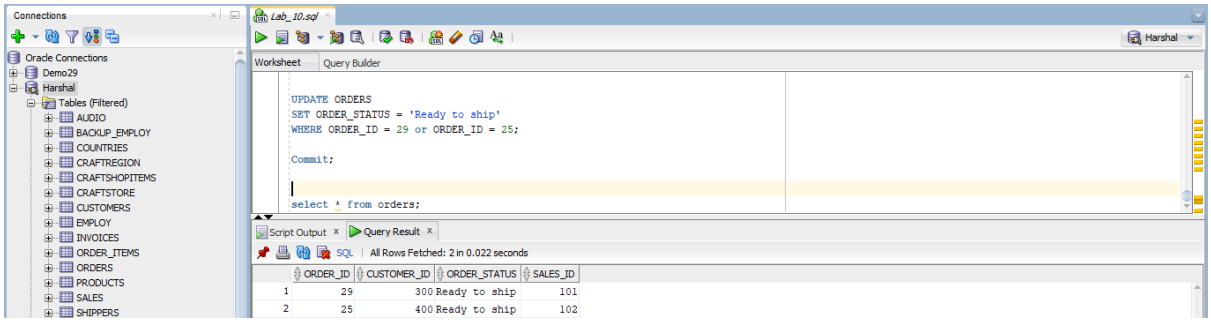
Invoice was updated according to today's date



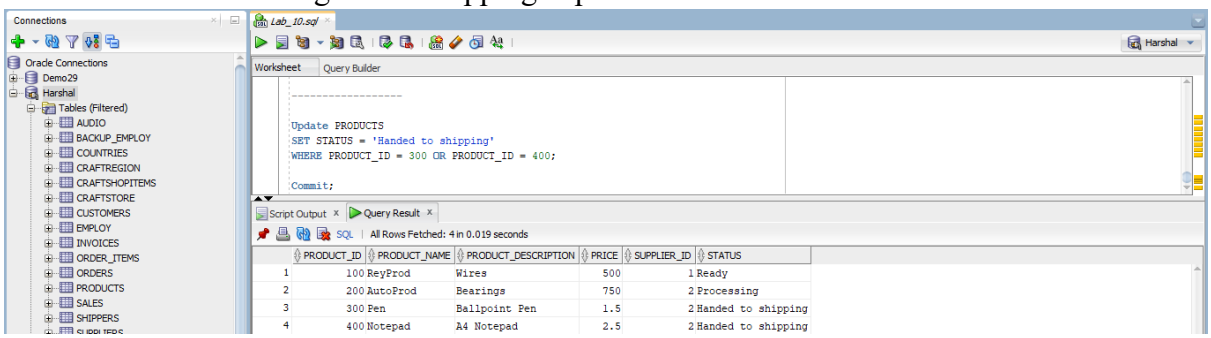
The products ordered were verified that they existed in inventory.



The warehouse is alerted to the customer's order.

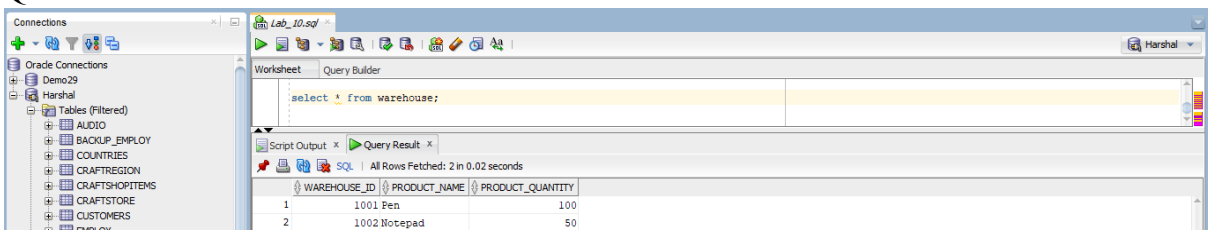


The customer's order is given to shipping dept.

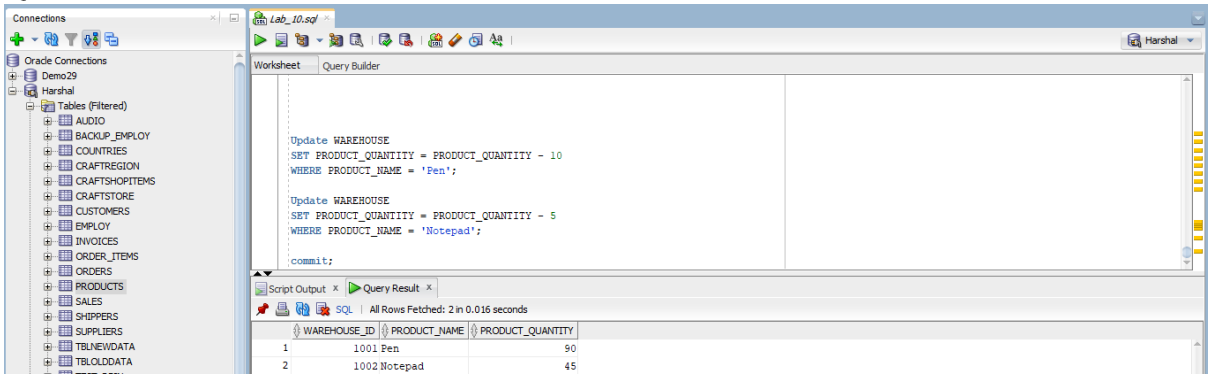


QOH is reduced by the number of items that were purchased.
For this I created a new table known as warehouse.

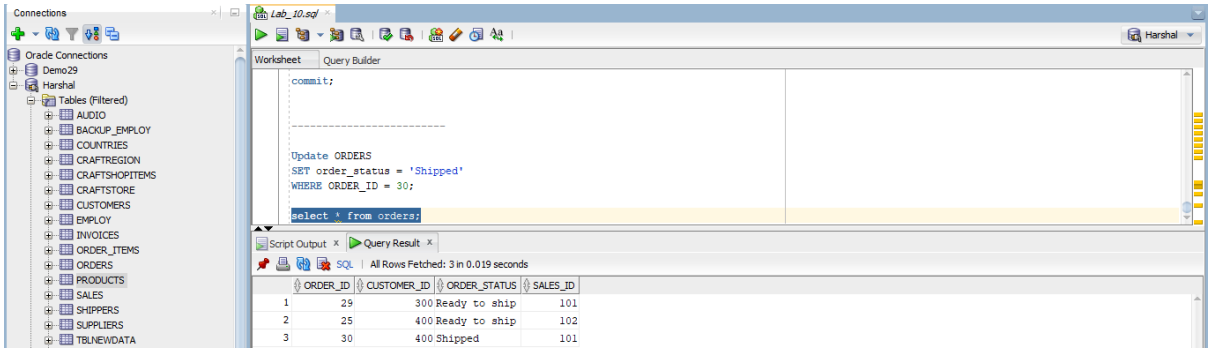
Quantities before:



Quantities after:

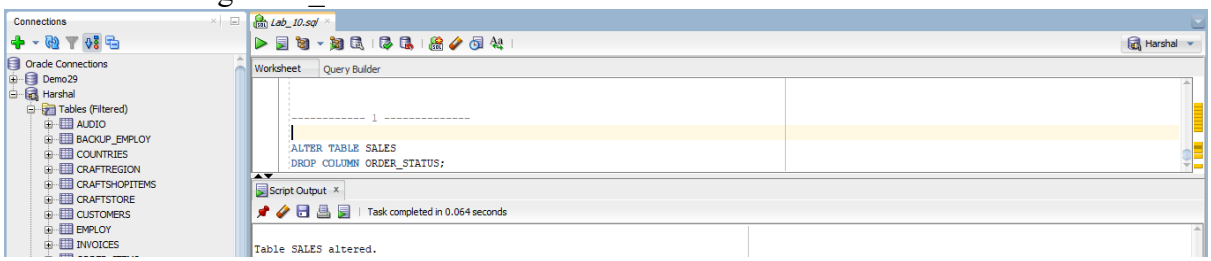


The customer is alerted about order is shipped.

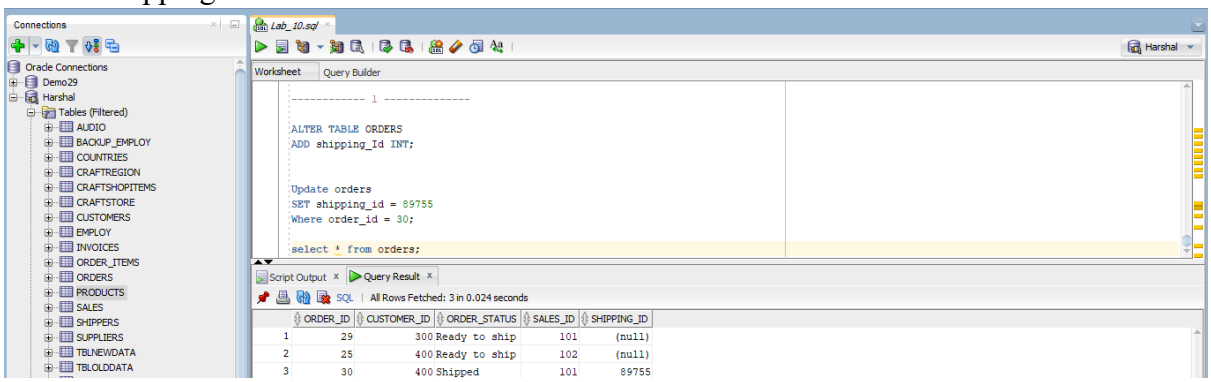


Action 3:

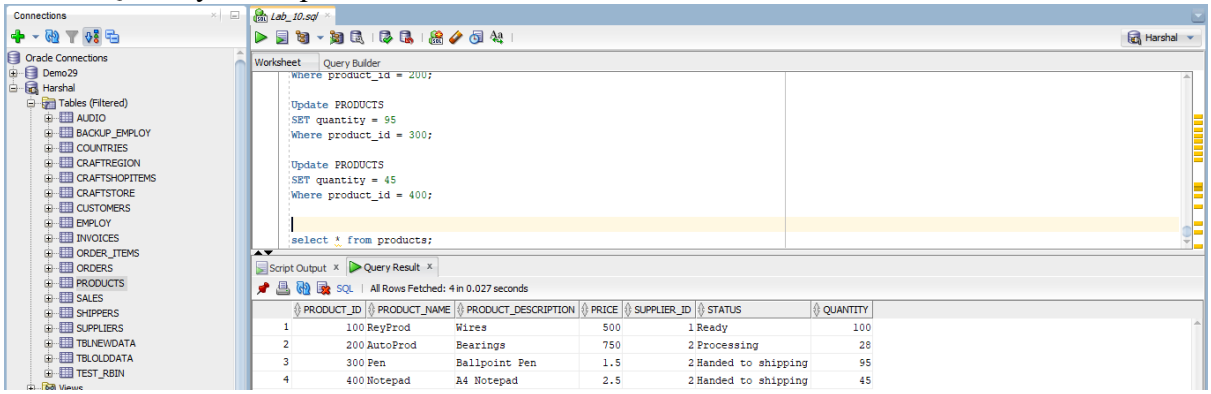
1. Removing order_status from sales table.



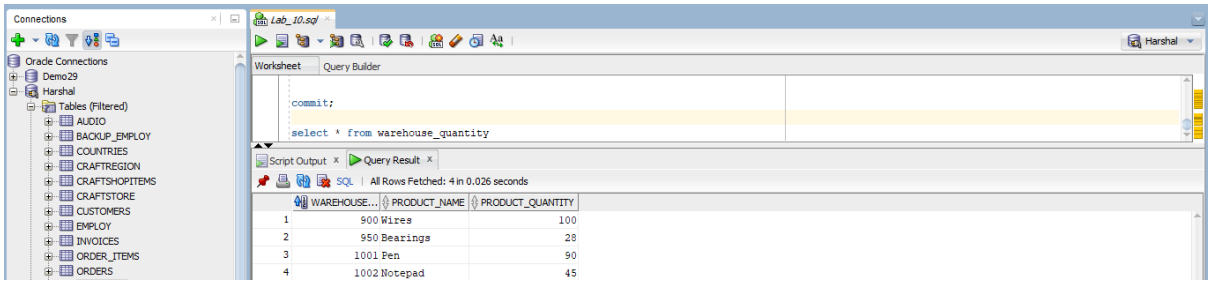
2. Shipping ID created



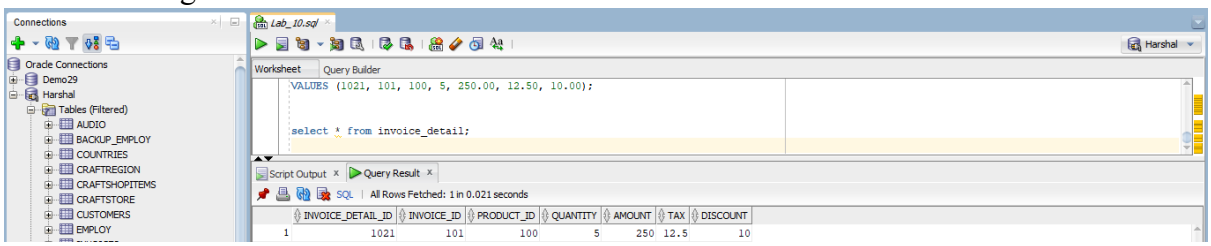
3. Quantity in the products table



4. Adding new table warehouse quantity

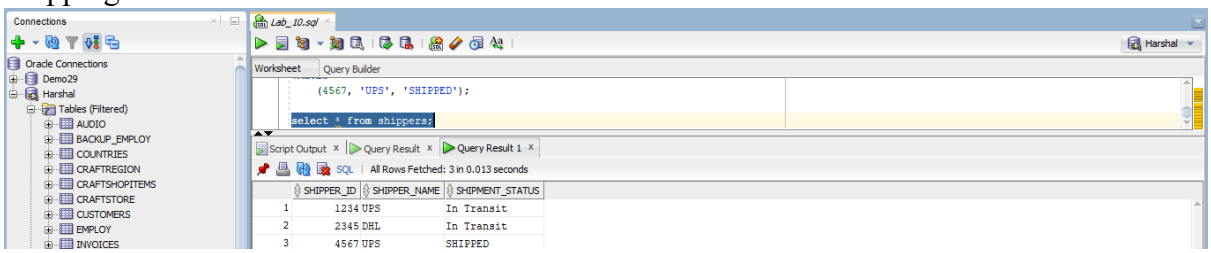


5. Adding invoice details.

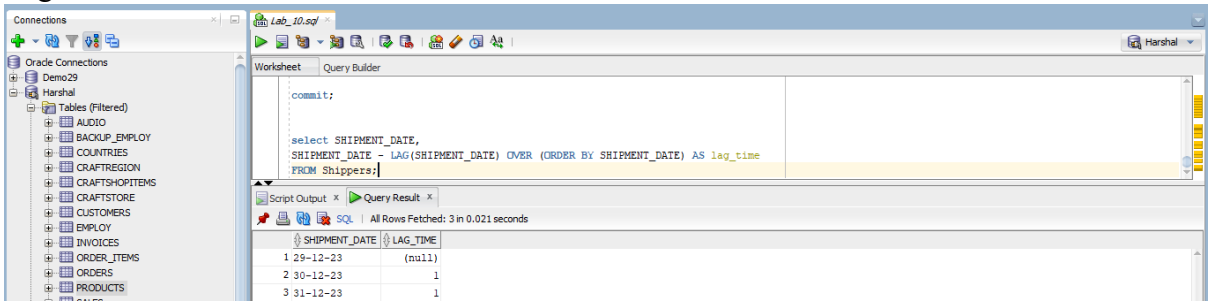


Step 4: Perform the analysis.

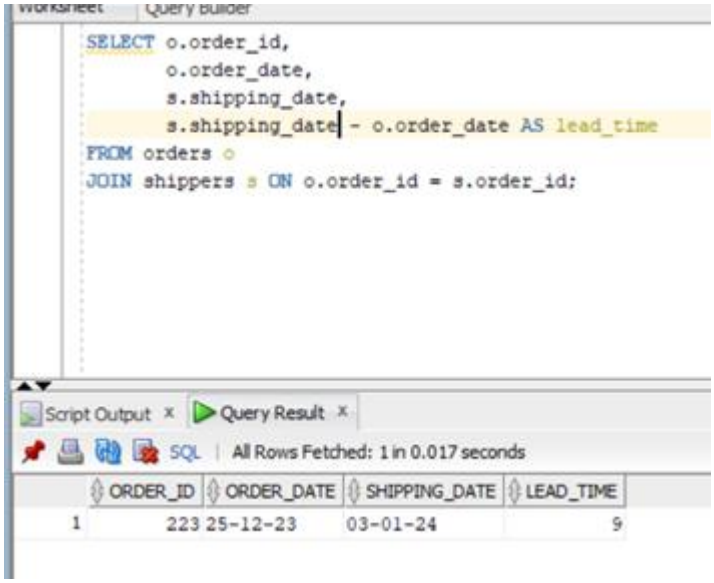
Shipping status



Lag time



Lead time



STEP 6:

1)
In order to facilitate product promotion, strategic modifications of specific items within a system shall be used in the supply chain schema mentioned above. To begin with, it is important to identify promotional products such as Pen and Note Pad. The main role in this is to amend the price or provide details of products within the PRODUCTS table.
For example, an SQL update query may be used to adjust the price of the 'Pen' from $1.5 to $1 during the promotional period, or to create a special status indicating the promotion, such as 'On Sale.'
To highlight the special offer, it will be necessary to inform customers of its promotion via a variety of channels, e.g. through email or newspaper articles as well as on Twitter and Facebook. At the same time, it helps to evaluate the effects of promotional activity on customer behavior and stock movements by monitoring sales and inventory movements that are often tracked in Order_ITEMS.
As the promotional period is coming to an end, it is important that modified product features are returned to their original values. As well as beyond the promotional period, this rollback ensures consistency of prices and status. It is beneficial to keep careful records of the initial prices and offers after promotion, which will enable them to be accurately returned to standard values. In order to ensure a smooth execution and monitoring of promotional activities as well as the maintenance of consistency in product data and customer communication, this coordinated approach is maintained within the supply chain schema.

2)
Within the database schema, prompting the distributor to replenish warehouse stocks involves continuous inventory monitoring and automated alerts triggered by predefined thresholds. In

order to evaluate available quantities, the level of product inventories needs to be kept up to date by using queries or planned tasks.
The system is guided by establishing minimum inventory thresholds for each product. When stock levels fall below certain limits, an alert is sent to advise the distributor that restocking is required.
This process can be facilitated by a notification system that is part of the database. The levels of inventory are compared to predefined thresholds via triggers or scheduled procedures. The system shall send an alert when the inventory levels of a given product are less than the specified limit. The products requiring replacement, their existing stock levels and a possible estimate of what will be restocked are specified in these notifications.

This process can be facilitated by a notification system that is part of the database. The levels of inventory are compared to predefined thresholds via triggers or scheduled procedures. The system shall send an alert when the inventory levels of a given product are less than the specified limit. The products requiring replacement, their existing stock levels and a possible estimate of what will be restocked are specified in these notifications.
The integration of the distributor's inventory management system is useful in achieving a higher level of efficiency. This integration automates the actions that are taken in the distributor's system once an alert is received from a warehouse.
In addition, the use of reports or the display of low inventory items on dashboards for proactive decision making contributes to restocking efforts. Leveraging the database's inventory tracking capabilities and automated alert systems ensures timely communication with the distributor, fostering proactive inventory management and warehouse replenishment strategies.

3)
Several triggers might be useful in managing various components of the supply chain and warehouse operations when building PL/SQL triggers for this application.
In the first place, the threshold of the inventory trigger is important. After transactions, such as sales or restocking, it continuously monitors the level of stocks. It shall immediately notify its distributor if the quantity of a given product exceeds an established threshold after completion, ensuring that it is replenished accordingly to maintain sufficient stock levels.
Second, when an order status changes, an order processing trigger automates duties. For example, this trigger modifies inventory when an order moves from 'Processing' to 'Shipped,' subtracting the stock of the ordered products to signify successful shipping.
For auditing, a Price Change Logging Trigger is necessary. It keeps track of and logs any changes to the pricing of the products in the PRODUCTS table. It offers a thorough history of price changes by logging both the old and updated prices together with timestamps.
In addition, orders which have been cancelled are managed by an Order Cancellation trigger. This trigger shall enable the inventory changes that have been introduced during order placement to be reversed upon discontinuation, restoring it to its original state.
The initiation and termination of the promotion period is dealt with by a marketing activation trigger. The product status or price of products that participate in promotional offers is dynamically updated, enabling or blocking special offers on the basis of their duration.
These triggers, in addition to boosting efficiency and control throughout the supply chain, have a collective effect of streamlining inventory management, automated order processing,

maintaining transparency records on price changes, controlling orders that are cancelled or interrupted, facilitating promotion activities.

4)
Operations serve as the backbone of a streamlined supply chain, encompassing critical elements like forecasting, Just in Time (JIT) practices, quality management, inventory control, and information system design.
In forecasting, historical data analysis and market trends allow us to predict the development of new demand patterns. In order to reduce the risks related to surpluses and insufficient stocks, precise forecasts facilitate efficient inventory planning, production schedule or allocation of resources.
Just in Time (JIT) methodology focuses on receiving materials precisely when needed for production, minimizing inventory holding costs and enhancing efficiency throughout the supply chain by reducing waste and excess inventory.
By ensuring that items fulfill specified criteria prior to being delivered to customers, quality management improves customer happiness and lowers the expense of returns and rework.
Optimizing stock levels to satisfy demand while lowering holding costs is the goal of inventory management. It includes keeping track of inventories, establishing reorder points, and effectively prioritizing things by applying techniques like ABC analysis.
The development of an information system is key, incorporating software and databases in order to track deliveries, process orders, manage forecasts and facilitate communication between supply chain stakeholders. A strong system ensures the correct information, transparency and informed decision at all stages in a chain.
A restaurant supply franchise can make good use of the following operational strategies: information systems facilitate ordering and tracking; quality management assures high standards; inventory control optimizes stock levels; quality management helps predict demand; and forecasting helps anticipate it. By combining these processes, you may improve productivity, cut down on waste, preserve quality, and guarantee prompt replenishment for better customer satisfaction and financial viability.

5)
The integration of embedded RFID tags into the database schemas will radically improve product tracking and accelerate delivery for items ordered by Customer X in the supply chain.
By assigning a field to store unique RFID tag information for each product, the schema is adapted to incorporate RFID data. This connection provides for a seamless linkage between items and their respective RFID tags.
RFID scanners help to track the movement of products throughout the supply chain. Tables or data fields relating to the storage of scanned records shall be included in this schema for capturing these movements. These records have the time stamps and particular locations that allow for an accurate trace of product positions.
In the maintenance of real time updates in the database, automation has a crucial role to play. In order to ensure the most up to date information is reflected in the database, trigger or plan processes shall be applied for automatic updating of product locations when RFID tags are checked.

Using the schema's query tools, reference to this RFID tag will retrieve a product's current location. This feature is intended to facilitate the rapid tracking and monitoring of product movements throughout the supply chain.
The system's delivery routes and fulfilment processes are optimised by using this RFID integrated database. The system streamlines your picking, packaging and logistics by searching for products closest to the delivery address of customer X in order to ensure quicker shipment through effective use of accurate product location data.