# ITDBADM Output Specifications
DBA and DB Developer Script and Application with Transaction Management Output

**Part 2:** **DB User Management and Access Control.** The following modules are expected to be completed that will use adjusted DBSALES. This will determine the users that need to be created as well as the access control that needs to be in place. Each of these modules will have their respective audit requirements defined in Part 3 of this Output Specifications, that will enhance further whatever was produced in this part. In this part of the specifications, you are expected to develop the following:

    a. CRUD Matrix (using the adjusted DBSALES Database. The description of each module should be used to determine what Tables should the module be provided access to and the appropriate access controls necessary.

    b. Set of SQL Scripts that will create users and implement appropriate access controls.

    **c.** **Sales Order Module**

    The module supports the sales representatives in taking orders, modifying orders, cancelling, and deleting orders. Order taking also involves the updating of the inventory of products when orders are processed. What is relevant about products to Sales Ordering are the product codes, product Name, product Line, the quantity in Stock and the MSRP. When orders are not paid immediately, orders are not processed when the total amount of orders exceeded the customer's credit limit.

    **d.** **Product Management Module**

    The module supports the inventory personnel to add product records. It also supports inventory managers to update and delete details about the products and discontinue products. There are situations that some products will need to be associated to new product lines. Part of the updates that can be done on the product is price updating.

    **e.** **Employee Management Module**

    The module supports the HR personnel to manage the employee's information and the HR Manager to manage the employees' branch, office and/or branch assignments. Managing employees also include being able to assign supervising managers to employees and department managers to departments. Only office code, city and country is visible to HR personnel and manager.

    **f.** **Logistics Module**

    The module supports the sales personnel to manage the shipping of orders (including the computations on actual shipping fees). Management of records of Couriers and their respective Riders is part of what the Sales personnel must be able to do in this module. Since orders may be shipped in multiple shipments, and each shipment handled by a different courier and rider, the module should allow the Sales personnel to create status updates on the shipment that will be made accessible to the customers through the application system. Logistics have limited access to product information (product code and product name only) and privacy policy dictates that no financial information about the customer should be accessible to Logistics. When shipments have been arranged, it will update some details in the order record.

    **g.** **Payment and Receivables Module**

    This module supports the accounting personnel to manage payments of customers as well as the maintenance of the controlled values involved in payment transactions. Order information is accessible to the accounting personnel but only on the order number and the total amount of the orders. Other details are restricted to be accessible to the accounting personnel.

**Part 3:** **Change History and Identifier Generation.**

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**Part 4:** There are specific business rules governing data that must be enforced regardless of what application software will be developed that will interact with the Database Server.

**Part 4A: Partial Specifications for Class Demo and Exercise: Sales Order**
> Note: If the activity on the data is performed automatically by the system, the end-user that performed it must always be "System", and the appropriate reason be supplied by the system itself.

a. When orders are taken, the transaction date should always be system-generated and not allowed to be user-supplied. The company implements a strict business rule of target delivery to be not less than 3 days the order was made. When orders are taken, it should automatically have a status of "In-Process". Products ordered are automatically taken out of the inventory, and its shipment reference should always be empty. When order quantities are updated, the necessary taking out or bringing back of inventory should be implemented.

b. When products are ordered, the order line number is generated by the system. The quantity ordered cannot be allowed to be more than what is currently available in the inventory. Furthermore, the price provided for the product cannot be more than a 20% discount from the MSRP but can at most be 100% beyond the MSRP.

c. Orders can be updated, but only its required date, status and comments. When the status of the order is "shipped" should a shipped date be allowed to have a value. Previous comments cannot be removed from the data, therefore any new comment provided should be appended rather than override any existing comment. Statuses cannot be reverted. This means that the sequence of the status must always be forward and not backward. Once an order is completed then no activity on the order and the products ordered can be allowed.
    a. In-Process to Shipped
    b. Shipped to Disputed
    c. Disputed to Resolved
    d. Shipped to Completed
    e. Resolved to Completed

d. Ordered products can be updated, but only its quantity and price can be updated. The reference no can be updated only when the order status is shipped. Ordered products can be deleted, this means that the product ordered was cancelled. Once the status of the order reached "Shipped", no activity on the ordered products should be allowed to happen.

e. Orders cannot be deleted physically from the records. Orders can be cancelled though causing its status to be "Cancelled". Cancelled orders (and the products ordered) should not allow any further data activity on the order and the ordered products. When orders are cancelled, the products ordered should be returned to inventory and provided with the appropriate reason of being cancelled by the System.

f. Orders that are not shipped within one week is automatically cancelled. A comment needs to be appended that it was the system that automatically cancelled the order.

g. The rules above should be enforced even when data is updated.

**Part 4B: Partial Specifications for Class Demo and Exercise: Product Management**
> Note: If the activity on the data is performed automatically by the system, the end-user that performed it must always be "System", and the appropriate reason be supplied by the system itself.

a. Products in Inventory records are kept organized at any given time. When products are created, it is necessary that is automatically categorized as current products and its product category be defined as either product for wholesale or for retail. Provided with these definitions, their respective MSRPs must be defined. The creation of relevant records should automatically be done by the system such that only the product information (including the primary product line is classified under) is provided.

b. When products are created, additional product lines it is classified under can be defined. Product's product lines can be deleted, and new product lines can be defined the product will be classified under.

c. Product MSRPs should be retrieved from the system without the need for the relevant records to be exposed to any users. This will alleviate the need to go through several records just to retrieve the appropriate MSRP for a specific product.

d. Products categories cannot be modified. This means that products that are already categorized as wholesale cannot be retail.

e. Products though can be discontinued at some time and later be brought back to current products. There are records processing that happens when moving products from current to discontinued and vice-versa which should automatically be performed by the System. Take Note that only inventory managers can discontinue a product.

**Part4C:    Partial Specifications for Class Demo and Exercise: Employee Management**

Note: If the activity on the data is performed automatically by the system, the end-user that performed it must always be "System", and the appropriate reason be supplied by the system itself. Some of the requirements may need to have the tables adjusted to satisfy the requirement.

a.  When employee records are created, their job title and employee type is required to be identified. Job Titles are controlled values from a set of job titles available in the organization. Employee types are restricted to Sales Representatives, Sales Manager or Inventory Manager. At any time and because of employee movements, promotions and re-assignments, employees' employee types can change. For example, an employee can be a Sales Representative at a certain time, then promoted to be the Sales Manager, then after some time gets to be demoted back to a Sales Representative, or in the future may be assigned to an employee type Inventory Manager and may be further re-typed back to a Sales Representative. This is a normal situation that happens in an organization that regardless of your Job Title, your employee type can change.

b.  Logically, not all the details about the employee can be modified. Only the extension and email, Job Title and Employee Type can be changed.

c.  Employee Records are not deleted. When employees resign that their records get deactivated, and no changes should be allowed on the record. If the resigned employee reapplied to the company, a new employee record is created for the individual.

d.  Sales Representatives are assigned to different offices for a limited period. If the office assignment will expire on the last day (end of office hours is at 6:00PM) and no new assignment is provided, the sales representative is automatically reassigned to the same assignment for a week. This is to avoid sales representatives to be in a "floating" status due to no office assignment. Because of this automatic reassignment, the sales manager recorded that facilitated the reassignment should be "System" (representing that this is system processed). The challenge to this reassignment is the Quota. The quota must be recomputed, such that the sales that were already facilitated by the sales representative during his/her previous assignment is deducted.

e.  If a new assignment is provided by the Sales Manager before the current assignment expires, the start date should automatically be the day following the last day of current assignment and should be restricted to a maximum of one month. Sales Manager dictate the quota that he/she will set for the sales representative.

f.  If a Sales Representative is moved to a different employee type in the middle of his/her assignment, his end date will automatically be changed to the day the Sales Representative is moved to a different employee type.

**Part4D:    Partial Specifications for Class Demo and Exercise: Credit Limit Management**

Note: If the activity on the data is performed automatically by the system, the end-user that performed it must always be "System", and the appropriate reason be supplied by the system itself. Some of the requirements may need to have the tables adjusted to satisfy the requirement.

a.  Credit Limits are reassessed and recomputed every end of the month depending on the actual orders made by customers. Credit limits may be decreased or increased depending on the amount of orders made by customers, and it is set to twice the total amount of orders made in the month. Customers that have made more than 15 orders in the month are given an extra credit limit amounting to the highest amount of orders they made.

**Part 5:    Report Specifications**

The following reports are regular reports being generated by the company about its operations

| Measure | Non-Time Dimension | Time Dimensions |
|---|---|---|
| Sales, Discounts and Markups | Product Line, Product, Country, Office, Sales Representative | Month, Year |
| Quantity Ordered | Product Line, Product, Country, Office, Sales Representative | Month, Year |
| Turnaround Time | Country, Office | Month, Year |
| Pricing Variation (refers to the average percentage of increase or decrease in pricing of a product) | Product Line, Product | Month, Year |