

## Sales Order Processing

### 1) APPLICATION

M/s ABC and Co. Ltd. Deals in machinery spare parts. They have branches all over the country. The branches employ marketing representatives for the territories under them. The representatives book orders from various customers. The project involves building an application to book orders from the customers, and generate the reports.

### 2) TABLES

The following tables should be created:-

#### Branch\_mst

Branch_cd	Char(4)	Primary key
Branch_name	Varchar(25)	Not null

#### Mktg\_territory\_mst

Area_cd	Char(4)	Primary key
Area_name	Varchar(25)	Not null
Branch_cd	Char(4)	Not null

#### Mktg\_rep\_mst

Rep_cd	Char(4)	Primary key
Rep_name	Varchar(25)	Not null
Area_cd	Char(4)	Not null

#### Customer\_mst

Cust_cd	Char(4)	Primary key
Cust_name	Varchar(25)	Not null

#### Product\_mst

Prod_cd	Char(4)	Primary key
Prod_name	Varchar(25)	Not null
Qty_on_hand	Int(6)	Not null
Reorder_level	Int(6)	Not null
Maximum_level	Int(6)	Not null
Booked_qty	Int(6)	Not null

**Order\_mst**

Branch_cd	Char(4)	
Order_no	Int(6)	
Order_dt	Date	Not null
Cust_cd	Char(4)	Not null
Rep_cd	Char(4)	Not null
Order_status	Char(1)	Not null
Valid_upto	Date	Not null
Remarks	Varchar(200)	

**Order\_dtl**

Branch_cd	Char(4)	
Order_no	Int(6)	
Prod_cd	Char(4)	Not null
Qty	Int(3)	Not null
Rate	Float(6,2)	Not null

**3) VALIDITY CHECKS**

The following checks should be maintained:-

**Mktg\_territory\_mst**

Branch\_cd must be a valid branch.

**Mktg\_rep\_mst**

Area\_cd must be a valid marketing territory.

**Product\_mst**

Booked\_qty must not be negative.

**Order\_mst**

Branch\_cd and Order\_no together is the composite Primary key.  
Branch\_cd must be a valid branch.  
Cust\_cd must be a valid customer.  
Rep\_cd must be a valid marketing representative.  
Order\_status can be Cancelled, Delivered or Pending. Default value is P.  
Valid\_upto should be at least one week later than Order\_dt.

**Order\_dtl**

Branch\_cd, Order\_no and Prod\_cd together is the composite Primary key.  
Branch\_cd and Order\_no must represent a valid order.  
Prod\_cd must be a valid product.  
Qty and Rate must not be negative.

## General

Booked\_qty in Product\_mst must reflect the total quantity for pending orders at all times.

Qty booked cannot be greater than Qty\_on\_hand.

Reorder level cannot be greater than the Maximum\_level.

No order can be modified once it has been Cancelled or Delivered.

Write **Database triggers** to update the Booked\_qty and Qty\_on\_hand in the Product\_mst.

### 4) USER INPUT

The following Stored procedures should be created:-

(a) Procedures for maintaining (inserting/updating/deleting) each of the following masters:-

- 1) Branch\_mst
- 2) Mktg\_territory\_mst
- 3) Mktg\_rep\_mst
- 4) Customer\_mst
- 5) Product\_mst

(b) Procedures for accepting new orders and modifying pending orders.

The procedures should display one order at a time.

It should display all items for the order.

It should display the customer name for the order.

It should display the product names for each item.

It should display the amount for each item.

It should display the total amount for the order.

It should perform the necessary validity checks.

(c) A separate procedure for marking orders as Cancelled or Delivered.

This procedure is similar to the previous one. No changes other than updating the orders as Cancelled or Delivered are to be allowed.

## **(5) REPORTS**

(a) Summary Reports for listing order totals:-

- 1) Area-wise.
- 2) Rep-wise.
- 3) Customer-wise.
- 4) Product-wise.

(b) A detail report to list order totals:-

Branch-wise, Area-wise, Rep-wise, Product-wise  
with summary totals at each level.

(c) A matrix report to display area-wise product-wise sales summary.

The report should list Total Quantity and Average Price.

(d) A report to display Pending, Cancelled, Delivered or All orders during a given period.

The type of order and the period to be delivered by depends on runtime parameters.

The report should list all the details of an Order including Customer Name, Product Name, Item-wise Totals and Total Order Value.

(e) A report to display all the items with the quantity below the reorder level.

## **GUIDELINES**

1. Create necessary indexes to make your queries work faster.
2. Queries and DML operations should be performed using Views.
3. Use stored procedure and functions for all DML operations and Reports. Data to be inserted, updated, deleted is to be passed as parameters.