



Oracle-ANSI SQL-Level 3-Practice Case Study

Order Management System

(For Classroom Training, Virtual Classroom, Webinar, Dovetail and Assessments)

Ver 3.1

## Infrastructure Section

i. Hardware, Software Specification

This section captures the hardware and software specifications for the effective delivery of the course.

**a. Hardware Specification**

|  |  |
| --- | --- |
| **Server Specification** | NA |
| **Desktop / Client Specification** | Standard CTS desktop configuration |
| **Others** |  |

**b. Software** **Specification**

| **#** | **Name of the software (s) to be installed** | **Version** | **License available in RAMS?**  **(Yes/No)** | **License available in RAMS for onsite?**  **(Yes/No)** | **Description of any patch to be installed** | **Can be used through Tool Wire / SoftGrid?** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | Oracle 11g Client with Database Server (TNS need to be configured to connect to the database server) | 11g | Yes | Yes | Not Applicable | Yes |
| 2 | Oracle SQL Developer |  | Yes | Yes | Not Applicable | Yes |
|  | Link to Download Oracle 11g express edition:  <http://www.oracle.com/technetwork/database/database-technologies/express-edition/downloads/index.html> | | | | | |

**Instruction for installing the software in the “Tool Wire/SoftGrid” environment *(if the response is ‘Yes’ in the last column in the above table)*:**

| **#** | **Name of the software** | **Instruction** |
| --- | --- | --- |
| 2 | Oracle 11g Client wit Database Server | TNS need to be configured to connect to the database server |

Link to Download Oracle 11g express edition:

<http://www.oracle.com/technetwork/database/database-technologies/express-edition/downloads/index.html>

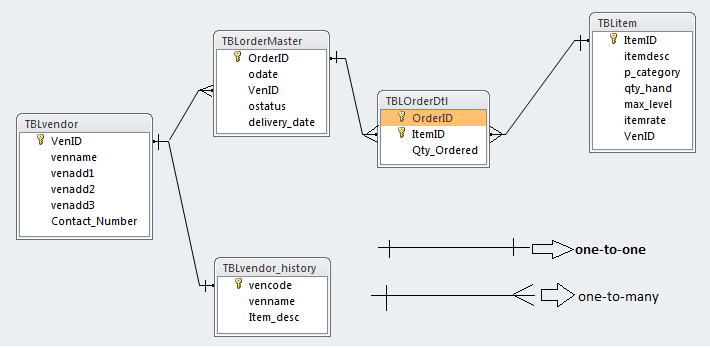
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ABC enterprise a small scale company which manufactures all consumers’ goods and looking for private agencies to handle their distribution. So they need a database to maintain the vendors’ network and to keep track of the orders and the deliverables made to the clients.

As an Oracle Developer, you are expected to write queries to analyze data based on the requirements. The database design is given below.

**Database Design:**

**ER Diagram:**

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**Table Description Below:**

|  |  |
| --- | --- |
| **TBLVendor** | **Table Which stores the complete vendor details of the ABC enterprises** |
| VenID | Unique ID for each and every vendor |
| Venname | Vendor name for each vendor |
| Venadd1 | The door number of the vendor |
| Venadd2 | The street name details of the vendor |
| Venadd3 | The location of the vendor |
| Contact\_Number | The contact number of the vendor |

|  |  |
| --- | --- |
| **TBLOrderMaster** | **Table which stores the complete details about the order.** |
| OrderID | Unique ID for each order the vendors raised. |
| Odate | The order date when the orders are placed. |
| VenID | vendor ID who has raised the order |
| Ostatus | The order status whether the order is **Completed**, **Pending** or **Rejected** |
| Delivery\_Date | The delivery date of the order. |

|  |  |
| --- | --- |
| **TBLOrderDtl** | **Table which stores the detailed information about each and every order.** |
| OrderID | Order ID for each and every order |
| ItemID | The Items which are mapped to the each and every orders. |
| Qty\_Ordered | The number of quantities of the items ordered. |
| Qty\_Delivered | The number of quantities of the items delivered. |

|  |  |
| --- | --- |
| **TBLItem** | **Table which stores the complete information about the Items** |
| ItemID | Unique ID for each and every Items |
| ItemDesc | The description of each item like whether the item is an Electronic or Auto products or pet care products….. |
| P\_category | The category of each items , For example: MP4 Players , Batteries , projectors will be categorized under Electronics, |
| Qty\_Hand | The number of items in hand. |
| Max\_Level | The maximum number of the items that can be kept in hand(stock) |
| Item\_rate | The item rate of each and every items |
| VenID | The vendor who will be delivering the particular item. |

|  |  |
| --- | --- |
| **TBLVendorHistory** | **Table which is created to maintain the history details about the vendor.** |
| Vencode | Unique ID for each vendor. |
| Venname | Vendor Name for the vendors |
| Item\_Desc | The item description the vendor will be dealing with for the delivery. |

**DDL and DML:**

Please run the below DDL and DML queries to create the necessary table and data.





**Requirement 1:**

The ABC enterprise wants to know the orders status periodically whether the order is in PENDING OR COMPLETED OR REJECTED status.

**Limitation and Constraint**

Write an explicit cursor to retrieve the order status and to print the order status.

**Sample Output:**

We have o001 in C status

We have o004 in C status

We have o005 in C status

…….

We have o003 in R status

We have o007 in R status

We have o010 in R status

…….

We have o002 in P status

We have o006 in P status

We have o008 in P status

…….

**Skeleton:**

CREATE OR REPLACE PROCEDURE get\_pending\_order(p\_ostatus IN TBLorderMaster.ostatus%TYPE)

AS

…

…

END;

**Requirement 2:**

The ABC enterprise wants to club the frequently asked queries together.

For example, in one case the enterprise wants to know the order date of a particular order and in another case he wants to know the quantity ordered in each item of that particular order.

**Limitation and Constraint:**

Write a procedure with a cursor variable for the above scenario.

**Sample Output:**

‘Order date is 23-JAN-14’

Quantity Ordered for i101 is 50

Quantity Ordered for i109 is 125

Quantity Ordered for i112 is 50

Quantity Ordered for i102 is 50

Quantity Ordered for i115 is 100

**Skeleton:**

CREATE OR REPLACE PROCEDURE get\_order\_quantity(**v\_option** in NUMBER , p\_order\_id in TBLorderMaster.orderid%TYPE)

IS

…

…

END;

**Requirement 3**

The ABC Enterprise wants to know the number of items that are still pending to be delivered, of a particular order.

**Limitation and Constraint:**

Write a Procedure to display the number of pending items for a particular order.

**Sample Output**

The item code i109 with order ID o001 need to deliver 25 more items.

The item code i115 with order ID o001 need to deliver 50 more items.

**Skeleton:**

CREATE OR REPLACE PROCEDURE check\_delivery(p\_order\_id IN TBLOrderDtl.orderid%TYPE)

AS

…

…

END;

**Requirement 4**

The ABC enterprise wants to know the maximum level (**The maximum number of the items that can be kept in stock**) of product along with the product name.

**Limitation and Constraint:**

Write a function to return the maximum level of each product along with the product name. Run the function in an anonymous block.

**Sample Output:**

MP4 Players with item id i101 maximum level is 150

**Skeleton:**

CREATE OR REPLACE FUNCTION func\_getmax(f\_item\_id IN TBLitem.itemid%TYPE)

RETURN VARCHAR2 AS

…

…

END;

**Requirement 5**

ABC Enterprises would like to trap errors when quantity delivered of a particular item is found to be greater than the quantity ordered of a particular item.

**Limitation and Constraint:**

Write a Trigger to display an error message when we try to insert quantity delivered of a particular item is greater than the quantity ordered of a particular item.

**Sample Output :**

Error report:

SQL Error: ORA-20001: An error was encountered - -20001 -ERROR- ORA-20001: Quantity delivered should not be greater than Quantity Ordered

ORA-06512: at "SCOTT.TRIGGER\_ORDER", line 15

ORA-04088: error during execution of trigger 'SCOTT.TRIGGER\_ORDER'

**Skeleton:**

CREATE OR REPLACE TRIGGER trigger\_order

…

…

END;

**Requirement 6:**

The ABC enterprise wants to display a message when the Item code selected is less than or equal to 0 and also to display an error message when the given item code is not found.

**Limitation and Constraints :**

Write a procedure to raise a user defined exception when the Item code selected is less than or equal to 0 and to raise a predefined exception when the given item code is not found.

**Note** : User defined exception : Use RAISE function for raising exception.

**Sample Output :**

Item ID must be greater than zero! – When an invalid item ID is entered.

No such Item! – When the given Item code is not available.

**Skeleton:**

CREATE OR REPLACE PROCEDURE proc\_invalid\_item (p\_item\_id IN TBLitem.Itemid%TYPE)

AS

…

…

END;

**Requirement 7:**

The ABC Enterprise wants to know the details about the items purchased in each order for the last quarter (Sep **to** Dec) of the year **2014**.

Write a **SQL query** for the above requirement **using Joins**.

**Requirement 8:**

The ABC Enterprise wants to add his vendor history record which includes vendor code, vendor names and item description who sell the same Items.

**Limitation and Constraints:**

Write a procedure which invokes a stored procedure from a Dynamic SQL block to perform the above scenario.

Note: The main procedure should accept the Item description as Input from the ABC user and the stored procedure in the Dynamic SQL should perform the insert operation into TBLvendor\_history.

**Skeleton:**

CREATE OR REPLACE PROCEDURE Proc\_ven\_history (

p\_venid IN VARCHAR2,

p\_vename IN VARCHAR2,

p\_item\_desc IN VARCHAR2

)

AS

..

..

END;

CREATE OR REPLACE PROCEDURE proc\_item(p\_item IN TBLitem.itemdesc%TYPE)

AS

…

…

END;

**Sample Output :**

|  |  |  |
| --- | --- | --- |
| **VENCODE** | **VENNAME** | **ITEM\_DESC** |
| v001 | Hari | Electronics |
| v002 | James | Electronics |
| v003 | Kishore | Electronics |
| v006 | Manoj | Arts |
| v005 | Gupta | Arts |

**Requirement 9**

ABC enterprise wants to trap if any duplicate vendor code is added again to the vendor table.

A user friendly message need to be displayed instead of system generated error message during the duplicate insertion

**Limitation and Constraints:**

Write a procedure to declare and use the PRAGMA EXCEPTION\_INIT to display an own error message and error number when a duplicate vendor code is added in TBLvendor table.

**Sample Output :**

‘Duplicate Vendor ID v001 should not added in the record’

**Requirement 10**

The ABC Enterprise wants to know in last quarter of each year, the total quantity ordered on each item.

Write a **SQL query** to display the total quantity ordered on each item for the quarter (**Sep to Dec**) of the year **2014.**

**Solution:**

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