

# Oracle® Database

## Database Sample Schemas



23c  
F47011-02  
September 2023

ORACLE®

Oracle Database Database Sample Schemas, 23c

F47011-02

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# Preface

This guide is a primary source of information about the sample database schemas that are used for examples in Oracle Database documentation.

## Audience

This document is intended for all users of the seed database, which is installed when you install Oracle Database.

## Documentation Accessibility

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## Related Documents

This guide does not discuss specific programming examples that use data in the sample schemas; see the Oracle Database documentation library for specific books that discuss the technology that you are using.

Sample database schema `OE` contains tables that use SQL data type `XMLType`. For information about the use of such data, see *Oracle XML DB Developer's Guide*.

## Conventions

The following text conventions are used in this document:

Convention	Meaning
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

# 1

## Introduction to Sample Schemas

The sample database schemas can be used for product documentation, courseware, software development, and application demos.

### About the Sample Schemas

The sample database schemas provide a common platform for examples in each release of Oracle Database. The sample schemas are a set of interlinked database schemas. This set provides the following approaches to complexity:

- Schema Human Resources (`hr`) is useful for introducing basic topics. An extension to this schema supports Oracle Internet Directory demos.
- Schema Customer Orders (`co`) is a modern schema useful for demos of e-commerce transactions. It allows the storage of semi-structured data using JSON.
- Schema Sales History (`sh`) is designed to allow for demos with large amounts of data. An extension to this schema provides support for advanced analytic processing.

The following schemas are no longer updated, but are still available:

- Schema Order Entry (`oe`) is useful for dealing with matters of intermediate complexity. Many data types are available in this schema, including nonscalar data types.
- Schema Online Catalog (`oc`) is a collection of object-relational database objects built inside the `oe` schema.
- Schema Product Media (`pm`) is dedicated to print media data types.



#### Note:

The Business Intelligence (`bi`), Information Exchange (`ix`), and Shipping (`qs`) schemas are no longer available.

### Design Principles for Sample Schemas

The sample database schemas were created with the following design principles in mind:

- **Simplicity and ease of use.** The `hr` schema is intentionally simple. It provides a graduated path from simple to intermediate levels of database use.
- **Relevance for typical users.** The base schemas and their extensions bring to the foreground the functionality that customers typically use. Only the most commonly used database objects are built automatically in the schemas. The entire set of schemas provides a foundation upon which you can expand to illustrate additional functionality.
- **Extensibility.** The sample schemas provide a logical and physical foundation for adding objects to demonstrate functionality beyond the fundamental scope.

- **Relevance.** The sample schemas are designed to be applicable to e-business and other significant industry trends (for example, XML). When this goal conflicts with the goal of simplicity, schema extensions are used to showcase the trends in focus.

## Customer Benefits of Sample Schemas

Benefits provided by the sample schemas include the following:

- **Continuity of context.** When encountering the same set of tables everywhere, users, students, and developers can spend less time becoming familiar with the schema and more time understanding or explaining the technical concepts.
- **Usability.** Customers can use these schemas in the seed database to run examples that are shown in Oracle Database documentation and training materials. This first-hand access to examples facilitates both conceptual understanding and application development.
- **Quality.** Through central maintenance and testing of both the creation scripts that build the sample schemas and the examples that run against the schemas, the quality of Oracle Database documentation and training materials is enhanced.

## Overview of the Sample Schemas

The Oracle Database sample schemas are based on a fictitious sample company that sells goods through various channels. The company operates worldwide to fill orders for products. It has several divisions, each of which is represented by a sample database schema.

### HR Sample Schema

The Human Resources division tracks information about the company employees and facilities. In the Human Resource (`hr`) records, each employee has an identification number, e-mail address, job identification code, salary, and manager. Some employees earn commissions in addition to their salary.

The company also tracks information about jobs within the organization. Each job has an identification code, job title, and a minimum and maximum salary range for the job. Some employees have been with the company for a long time and have held different positions within the company. When an employee resigns, the duration the employee was working, the job identification number, and the department are recorded.

The sample company is regionally diverse, so it tracks the locations of its warehouses and departments. Each employee is assigned to a department, and each department is identified either by a unique department number or a short name. Each department is associated with one location, and each location has a full address that includes the street name, postal code, city, state or province, and the country code.

In places where the departments and warehouses are located, the company records details such as the country name, currency symbol, currency name, and the region where the country is located geographically.

## CO Sample Schema

The Customer Orders division tracks customer, product, store, and order data. The Customer Orders (`co`) schema records the details of transactions made by a retail application.

The `co` schema highlights features such as JSON support.

The company sells a variety of products, which are maintained in the `products` table. Each product has a unique identification number, name, price, details stored in a JSON object and product image details.

The orders placed by the customer are tracked in the `orders` table using the order identification number, date and time when the order was placed, customer details, order status and the store information.

The details of the products in a particular order are also tracked in the `order_items` table using the order identification number. Details of the products, price at the time of purchase, quantity and shipment are recorded.

The information of a customer placing an order is tracked in the `customers` table. Each customer has an identification number, name, and email address that is used for communication of the orders.

The customers can purchase the products in stores or online through the company's website. The information for all of the stores and their corresponding physical and virtual addresses is tracked in the `stores` table. The store information is also recorded in the order details.

The shipment details of the orders placed such as the delivery address, customer details, store information and the shipment status are stored in the `shipments` table.

An `inventory` table stores the details of each product such as the quantity available at each store.

## SH Sample Schema

The Sales division tracks business statistics to facilitate business decisions. The sample company does a high volume of business, so it runs business statistics reports to aid in decision making. Many of these reports are time-based and nonvolatile. That is, they analyze past data trends. The company loads data into its data warehouse regularly to gather statistics for these reports. These reports include annual, quarterly, monthly, and weekly sales figures by product. These reports are stored by using the schema Sales History (`sh`).

The company also runs reports on distribution channels through which its sales are delivered. When the company runs special promotions on its products, it analyzes the impact of the promotions on sales. It also analyzes sales by geographical area.

## OE Sample Schema



### Note:

The `oe` schema is no longer updated, but is still available.

The company sells several products, such as computer hardware and software, music, clothing, and tools. The company maintains information about these products, such as product identification numbers, the category into which the product falls, order entry (oe), the weight group (for shipping purposes), the warranty period if applicable, the supplier, the availability status of the product, a list price, a minimum price at which a product will be sold, and a URL address for manufacturer information. Inventory information is also recorded for all products, including the warehouse where the product is available and the quantity on hand. Because products are sold worldwide, the company maintains the names of the products and their descriptions in several languages.

The company maintains warehouses in several locations to fulfill customer needs. Each warehouse has a warehouse identification number, name, facility description, and location identification number.

Customer information is also tracked. Each customer has an identification number. Customer records include customer name, street name, city or province, country, phone numbers (up to five phone numbers for each customer), and postal code. Some customers place orders through the Internet, so e-mail addresses are also recorded. Because of language differences among customers, the company records the native language and territory of each customer.

The company places a credit limit on its customers, to limit the amount of products they can purchase at one time. Some customers have an account manager, and this information is also recorded.

When a customer places an order, the company tracks the date of the order, how the order was placed, the current status of the order, shipping mode, total amount of the order, and the sales representative who helped place the order. The sales representative may or may not be the same person as the account manager for a customer. If an order is placed over the Internet, no sales representative is recorded. In addition to order information, the company also tracks the number of items ordered, the unit price, and the products ordered.

The oe schema also contains XML purchase-order documents. You can access these documents by using SQL to query the `purchaseorder` table, or by querying the public views `RESOURCE_VIEW` and `PATH_VIEW`.

## OC Sample Schema



### Note:

The oe schema is no longer updated, but is still available.

The Online Catalog (oc) subschema of database schema oe addresses an online catalog merchandising scenario. The same customers and products are used in oc as in schema oe proper, but subschema oc organizes the products into a hierarchy of parent categories and subcategories. This hierarchy corresponds to the arrangement on an e-commerce portal site, where users navigate to specific products by drilling down through increasingly specialized categories of products.

## PM Sample Schema

**Note:**

The `pm` schema is no longer updated, but is still available.

The company stores print information about its products in a database. The Product Media (`pm`) schema is used to store such information. Examples of such information are:

- Press release texts
- Print media advertisements
- Other promotional texts and translations

# 2

## Installation of the Sample Schemas

To use the sample schemas, download the installable `.zip` file from the GitHub repository.

### Installing the Sample Schemas

You can install the sample schemas independently.

Each sample schema comes with its own set of scripts, including an installation script. The following steps describe how to install the `hr` schema, but you can complete similar steps to install any of the sample schemas.



#### Note:

- To install or uninstall the `sh` schema, you must use SQLcl. You cannot use SQL\*Plus to install the `sh` schema.
- By installing any of the Oracle Database sample schemas, you drop (remove) any previously installed schema with the same name, and a fresh schema is installed.
- Because data contained in any schema is lost if you run the installation script for that schema, do not use the sample schemas for your personal or business data and applications. The sample schemas are meant to be used for demonstration purposes only.

1. To find the latest version of the sample schemas installation scripts, go to the following GitHub location :

<https://github.com/oracle/db-sample-schemas/releases/latest>

Previous versions of the sample schemas are available at the following location:

<https://github.com/oracle-samples/db-sample-schemas/releases>

2. Clone the GitHub repository, or download the `.zip` file from GitHub and then extract the files.
3. Navigate to the folder that contains the schema that you want to install. In this case, navigate to the `human_resources` folder.  
The `co` schema is in the `customer_orders` folder, and the `sh` schema is in the `sales_history` folder.
4. From the SQLcl or SQL\*Plus command line, connect to the database as a privileged user with rights to create and drop other users. For example, connect as `SYSTEM`, `ADMIN`, or `SYSDBA`. To install the `sh` schema, you must use SQLcl.
5. Run the `*_install.sql` install script. In this case, run `hr_install.sql` to create the `hr` schema.

- Enter a secure password for the schema.
- Enter a tablespace to use as the default for the schema. If you do not enter a tablespace, the default database tablespace is used.

## Resetting Sample Schemas

Typically, there is no difference between installing a sample schema for the first time or reinstalling it over a previously installed version. The \*\_install.sql scripts drop the schema users and all of their objects from the previous installation.

Therefore, to reset the sample schemas, follow the steps mentioned in the section [Installing the Sample Schemas](#).

## Uninstalling Sample Schemas

To uninstall a sample schema, run the corresponding \*\_uninstall.sql script from the SQL\*Plus or SQLcl command line.

To install or uninstall the sh schema, you must use SQLcl.

1. Connect to the database as a privileged user with rights to create and drop other users.

For example, connect as SYSTEM, ADMIN, or SYSDBA.

2. Run the uninstall script.

For example, to uninstall the hr schema, run the hr\_uninstall.sql script.

# 3

## Schema Diagrams

The following diagrams illustrate the structures of the sample database schemas.

### Sample Schema Diagrams

[Figure 3-1](#) illustrates sample schemas `hr` and `oe` and their relationship. For information about the scripts and table descriptions for these schemas, see [HR Schema](#) and [OE Schema](#).

[Figure 3-2](#) illustrates schema `co`. For information about the scripts and table description for this schema, see [CO Schema](#).

[Figure 3-3](#) illustrates schema `sh`. For information about the scripts and table description for this schema, see [SH Schema](#).

[Figure 3-4](#) illustrates schema `pm`. For information about the scripts and table description for this schema, see [PM Schema](#).

Figure 3-1 Sample Schemas HR and OE

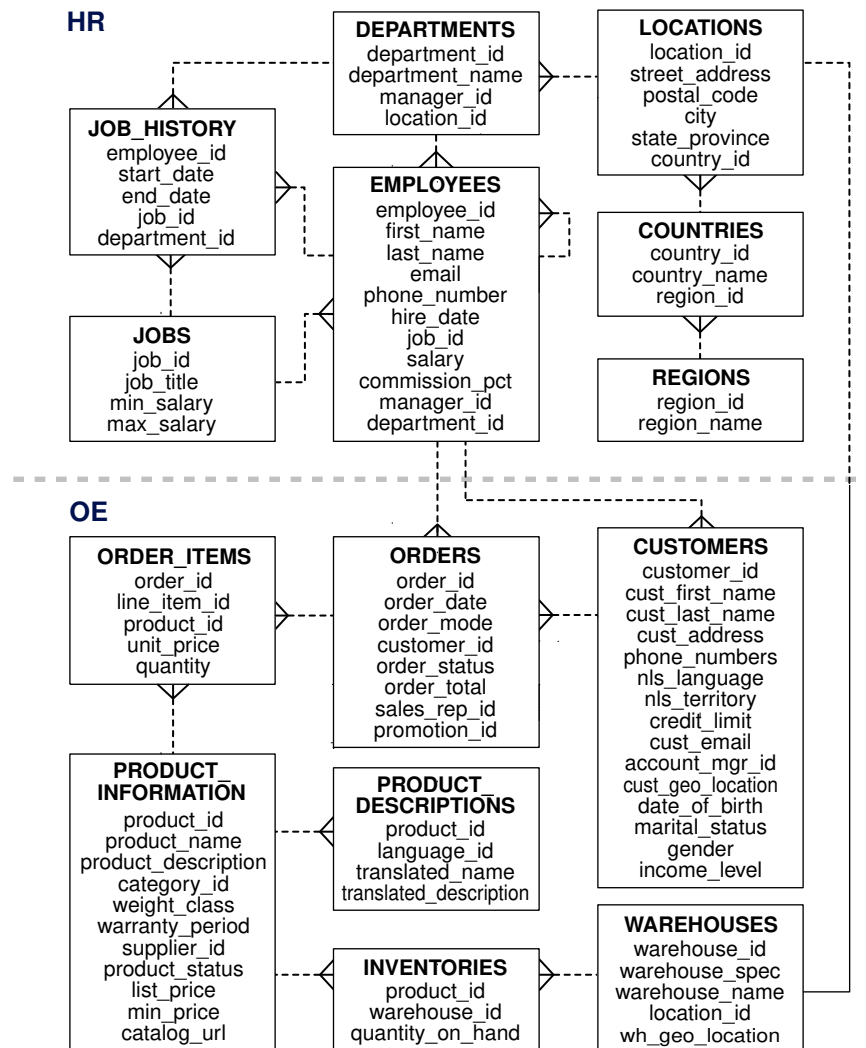


Figure 3-2 Sample Schema CO

CO

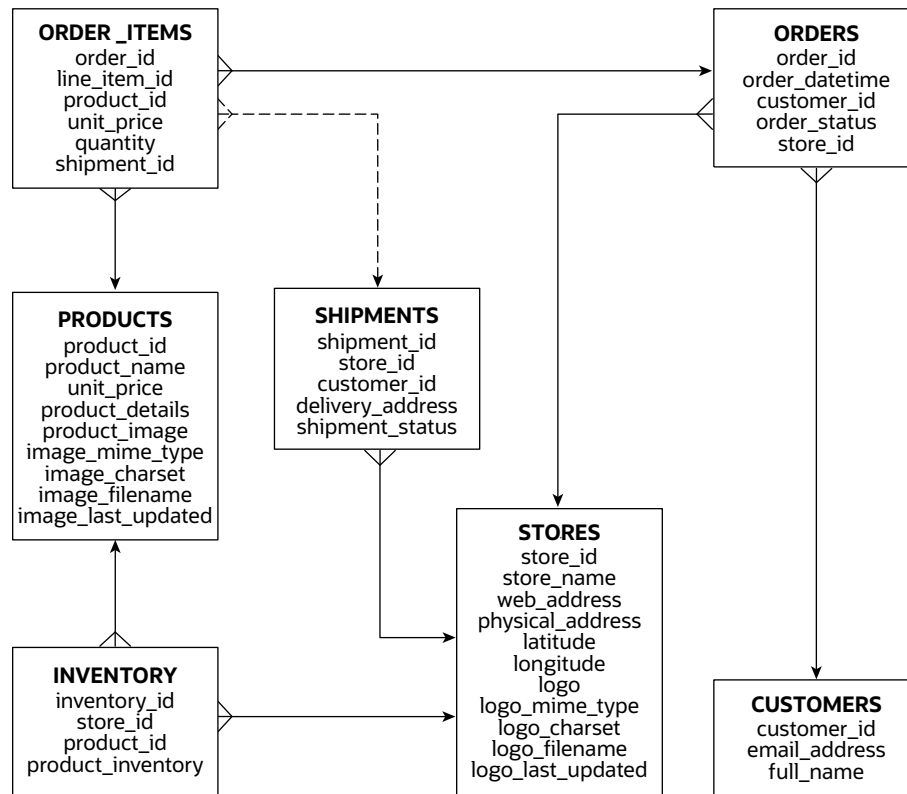


Figure 3-3 Sample Schema SH

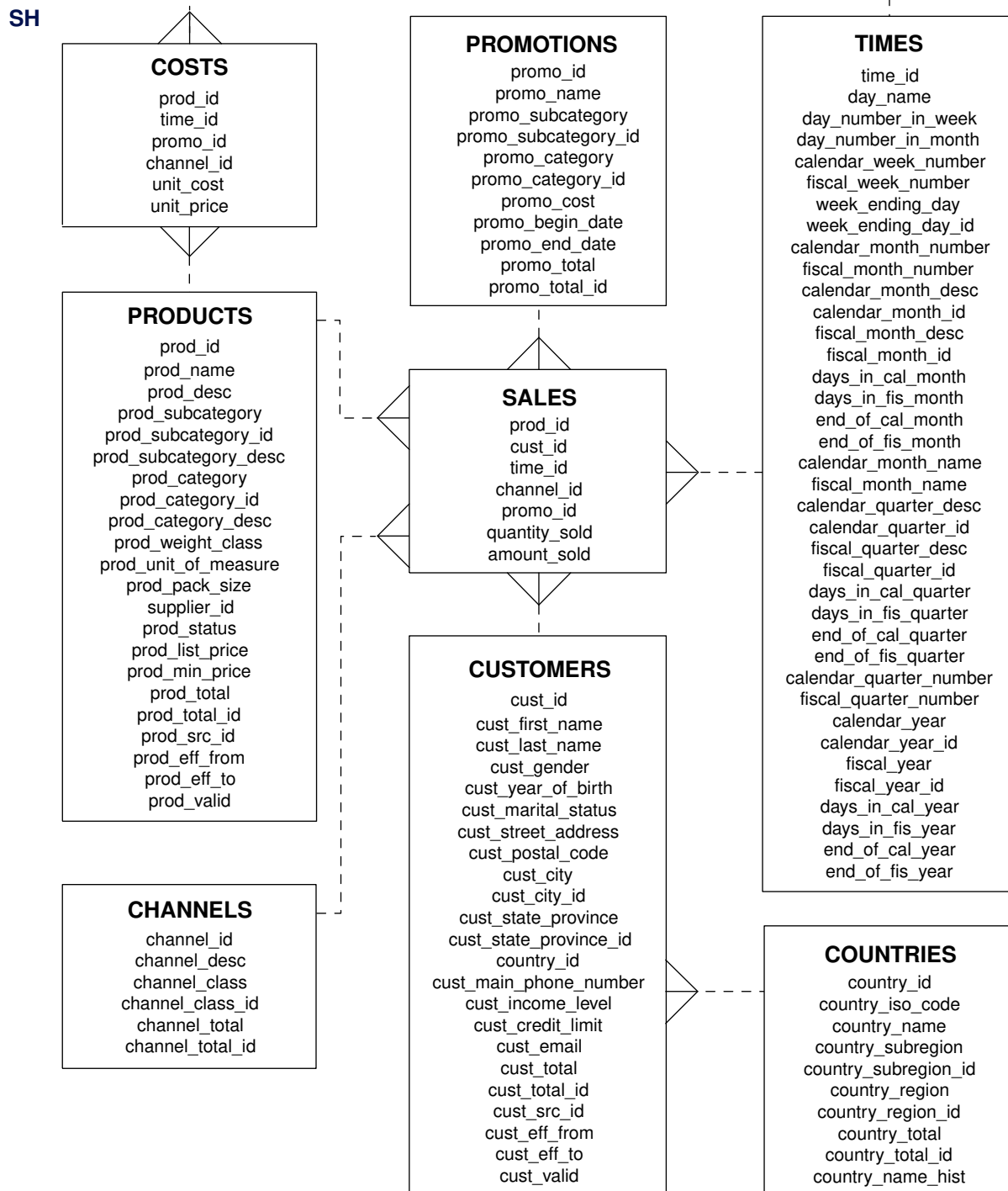
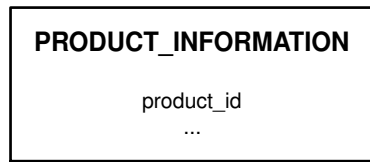
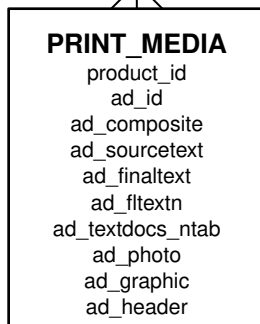


Figure 3-4 Sample Schemas OE and PM

**OE**



**PM**



# 4

## Sample Schema Scripts and Object Descriptions

Each of the Oracle Database sample schemas has two primary scripts:

- The `xx_install.sql` script (where `xx` is the schema abbreviation) resets and creates all objects and data for a particular schema.
- The `xx_uninstall.sql` script (where `xx` is the schema abbreviation) removes all objects from a particular schema.

### HR Sample Schema Scripts and Objects

The following tables list the names of the scripts that create the human resources (`hr`) schema and describe the objects in the schema. [Table 4-1](#) lists the `hr` scripts in alphabetical order, while [Table 4-2](#) lists the `hr` objects.

**Table 4-1 HR Sample Schema Scripts**

Script Name	Description
<code>hr_code.sql</code>	Creates procedural objects in the schema
<code>hr_create.sql</code>	Creates the <code>hr</code> objects
<code>hr_install.sql</code>	Main script for schema <code>hr</code> ; calls other scripts
<code>hr_populate.sql</code>	Populates the objects
<code>hr_uninstall.sql</code>	Uninstalls the schema

**Table 4-2 HR Sample Schema Objects**

Object Type	Objects
Index	<code>country_c_id_pk</code> , <code>dept_id_pk</code> , <code>dept_location_ix</code> , <code>emp_department_ix</code> , <code>emp_email_uk</code> , <code>emp_emp_id_pk</code> , <code>emp_job_ix</code> , <code>emp_manager_ix</code> , <code>emp_name_ix</code> , <code>jhist_department_ix</code> , <code>jhist_employee_ix</code> , <code>jhist_emp_id_st_date_pk</code> , <code>jhist_job_ix</code> , <code>job_id_pk</code> , <code>loc_city_ix</code> , <code>loc_country_ix</code> , <code>loc_id_pk</code> , <code>loc_state_province_ix</code> , <code>reg_id_pk</code>
Procedure	<code>add_job_history</code> , <code>secure_dml</code>
Sequence	<code>departments_seq</code> , <code>employees_seq</code> , <code>locations_seq</code>
Table	<code>countries</code> , <code>departments</code> , <code>employees</code> , <code>jobs</code> , <code>job_history</code> , <code>locations</code> , <code>regions</code>
Trigger	<code>secure_employees</code> , <code>update_job_history</code>
View	<code>emp_details_view</code>

## HR Sample Schema Table Descriptions

The following tables describe the columns of each table of the `hr` sample schema.

- [Table HR.COUNTRIES](#)
- [Table HR.DEPARTMENTS](#)
- [Table HR.EMPLOYEES](#)
- [Table HR.JOBS](#)
- [Table HR.JOB\\_HISTORY](#)
- [Table HR.LOCATIONS](#)
- [Table HR.REGIONS](#)

### Table HR.COUNTRIES

**Table 4-3 HR.COUNTRIES Table Description**

Column Name	Null?	Type
COUNTRY_ID	NOT NULL	CHAR (2)
COUNTRY_NAME		VARCHAR2 (60)
REGION_ID		NUMBER

### Table HR.DEPARTMENTS

**Table 4-4 HR.DEPARTMENTS Table Description**

Column Name	Null?	Type
DEPARTMENT_ID	NOT NULL	NUMBER (4)
DEPARTMENT_NAME	NOT NULL	VARCHAR2 (30)
MANAGER_ID		NUMBER (6)
LOCATION_ID		NUMBER (4)

### Table HR.EMPLOYEES

**Table 4-5 HR.EMPLOYEES Table Description**

Column Name	Null?	Type
EMPLOYEE_ID	NOT NULL	NUMBER (6)
FIRST_NAME		VARCHAR2 (20)
LAST_NAME	NOT NULL	VARCHAR2 (25)
EMAIL	NOT NULL	VARCHAR2 (25)
PHONE_NUMBER		VARCHAR2 (20)

**Table 4-5 (Cont.) HR.EMPLOYEES Table Description**

Column Name	Null?	Type
HIRE_DATE	NOT NULL	DATE
JOB_ID	NOT NULL	VARCHAR2 (10)
SALARY		NUMBER (8,2)
COMMISSION_PCT		NUMBER (2,2)
MANAGER_ID		NUMBER (6)
DEPARTMENT_ID		NUMBER (4)

## Table HR.JOBS

**Table 4-6 HR.JOBS Table Description**

Column Name	Null?	Type
JOB_ID	NOT NULL	VARCHAR2 (10)
JOB_TITLE	NOT NULL	VARCHAR2 (35)
MIN_SALARY		NUMBER (6)
MAX_SALARY		NUMBER (6)

## Table HR.JOB\_HISTORY

**Table 4-7 HR.JOB\_HISTORY Table Description**

Column Name	Null?	Type
EMPLOYEE_ID	NOT NULL	NUMBER (6)
START_DATE	NOT NULL	DATE
END_DATE	NOT NULL	DATE
JOB_ID	NOT NULL	VARCHAR2 (10)
DEPARTMENT_ID		NUMBER (4)

## Table HR.LOCATIONS

**Table 4-8 HR.LOCATIONS Table Description**

Column Name	Null?	Type
LOCATION_ID	NOT NULL	NUMBER (4)
STREET_ADDRESS		VARCHAR2 (40)
POSTAL_CODE		VARCHAR2 (12)
CITY	NOT NULL	VARCHAR2 (30)

**Table 4-8 (Cont.) HR.LOCATIONS Table Description**

Column Name	Null?	Type
STATE_PROVINCE		VARCHAR2 (25)
COUNTRY_ID		CHAR (2)

## Table HR.REGIONS

**Table 4-9 HR.REGIONS Table Description**

Column Name	Null?	Type
REGION_ID	NOT NULL	NUMBER
REGION_NAME		VARCHAR2 (25)

## CO Sample Schema Scripts and Objects

The following tables list the names of the scripts that create the customer orders (co) schema and describe the objects in the schema.

[Table 4-10](#) lists the co scripts in alphabetical order, while [Table 4-11](#) lists the co objects.

**Table 4-10 CO Sample Schema Scripts**

Script Name	Description
co_create.sql	Creates the co objects
co_install.sql	Main script for schema co; calls other scripts
co_populate.sql	Populates the objects
co_uninstall.sql	Uninstalls the schema

**Table 4-11 CO Sample Schema Objects**

Object Type	Objects
Index	customers_name_i, orders_customer_id_i, orders_store_id_i, products_pk, stores_pk, store_name_u, customers_pk, customers_email_u, orders_pk, order_items_pk, order_items_product_u, inventory_product_id_i, inventory_pk, inventory_store_product_u, shipments_store_id_i, shipments_customer_id_i, shipments_pk
Table	customers, stores, products, orders, order_items, shipments, inventory

**Table 4-11 (Cont.) CO Sample Schema Objects**

Object Type	Objects
View	customer_order_products, store_orders, product_reviews, product_orders

## CO Sample Schema Table Descriptions

The following tables describe the columns of each table of the `co` sample schema.

If the value of a primary key column is `NULL`, an integer is generated by default for all of the `co` Sample Schema tables.

- [Table CO.CUSTOMERS](#)
- [Table CO.STORES](#)
- [Table CO.PRODUCTS](#)
- [Table CO.ORDERS](#)
- [Table CO.ORDER\\_ITEMS](#)
- [Table CO.SHIPMENTS](#)
- [Table CO.INVENTORY](#)

### Table CO.CUSTOMERS

The table below lists `CO.CUSTOMERS` table description.

**Table 4-12 CO.CUSTOMERS Table Description**

Column Name	Nulls Allowed?	Type
CUSTOMER_ID	NO	INTEGER
EMAIL_ADDRESS	NO	VARCHAR2 (255 CHAR)
FULL_NAME	NO	VARCHAR2 (255 CHAR)

### Table CO.STORES

The table below lists `CO.STORES` table description.

**Table 4-13 Table CO.STORES Table Description**

Column Name	Nulls Allowed?	Type
STORE_ID	NO	INTEGER
STORE_NAME	NO	VARCHAR2 (255 CHAR)
WEB_ADDRESS	YES	VARCHAR2 (100 CHAR)
PHYSICAL_ADDRESS	YES	VARCHAR2 (512 CHAR)
LATITUDE	YES	NUMBER (9, 6)

**Table 4-13 (Cont.) Table CO.STORES Table Description**

Column Name	Nulls Allowed?	Type
LONGITUDE	YES	NUMBER (9, 6)
LOGO	YES	BLOB
LOGO_MIME_TYPE	YES	VARCHAR2 (512 CHAR)
LOGO_FILENAME	YES	VARCHAR2 (512 CHAR)
LOGO_CHARSET	YES	VARCHAR2 (512 CHAR)
LOGO_LAST_UPDATED	YES	DATE

**Note:**

The table has a constraint to verify either `WEB_ADDRESS` or `PHYSICAL_ADDRESS` is NOT NULL.

## Table CO.PRODUCTS

The table below lists `CO.PRODUCTS` table description.

**Table 4-14 Table CO.PRODUCTS Table Description**

Column Name	Nulls Allowed?	Type
PRODUCT_ID	NO	INTEGER
PRODUCT_NAME	NO	VARCHAR2 (255 CHAR)
UNIT_PRICE	YES	NUMBER (10, 2)
PRODUCT_DETAILS	YES	BLOB
PRODUCT_IMAGE	YES	BLOB
IMAGE_MIME_TYPE	YES	VARCHAR2 (512 CHAR)
IMAGE_FILENAME	YES	VARCHAR2 (512 CHAR)
IMAGE_CHARSET	YES	VARCHAR2 (512 CHAR)
IMAGE_LAST_UPDATED	YES	DATE

## Table CO.ORDERS

The table below lists `CO.ORDERS` table description.

**Table 4-15 Table CO.ORDERS Table Description**

Column Name	Nulls Allowed?	Type
ORDER_ID	NO	INTEGER
ORDER_TMS	NO	TIMESTAMP (6)
CUSTOMER_ID	NO	INTEGER
ORDER_STATUS	NO	VARCHAR2 (10 CHAR)

**Table 4-15 (Cont.) Table CO.ORDERS Table Description**

Column Name	Nulls Allowed?	Type
STORE_ID	NO	INTEGER

## Table CO.ORDER\_ITEMS

The table below lists CO.ORDER\_ITEMS table description.

**Table 4-16 Table CO.ORDER\_ITEMS Table Description**

Column Name	Nulls Allowed?	Type
ORDER_ID	NO	INTEGER
LINE_ITEM_ID	NO	INTEGER
PRODUCT_ID	NO	INTEGER
UNIT_PRICE	NO	NUMBER(10,2)
QUANTITY	NO	INTEGER
SHIPMENT_ID	YES	INTEGER

## Table CO.SHIPMENTS

The table below lists CO.SHIPMENTS table description.

**Table 4-17 Table CO.SHIPMENTS Table Description**

Column Name	Nulls Allowed?	Type
SHIPMENT_ID	NO	INTEGER
STORE_ID	NO	INTEGER
CUSTOMER_ID	NO	INTEGER
DELIVERY_ADDRESS	NO	VARCHAR2(512 CHAR)
SHIPMENT_STATUS	NO	VARCHAR2(100 CHAR)

## Table CO.INVENTORY

The table below lists CO.INVENTORY table description.

**Table 4-18 Table CO.INVENTORY Table Description**

Column Name	Nulls Allowed?	Type
INVENTORY_ID	NO	INTEGER
STORE_ID	NO	INTEGER
PRODUCT_ID	NO	INTEGER
PRODUCT_INVENTORY	NO	INTEGER

## SH Sample Schema Scripts and Objects

The following tables list the names of the scripts that create the Sales History (`sh`) schema and describe the objects in the schema. [Table 4-19](#) lists the `sh` scripts in alphabetical order, while [Table 4-20](#) lists the `sh` objects.

**Table 4-19 SH Sample Schema Scripts**

Script Name	Description
<code>sh_create.sql</code>	Creates the objects in the schema
<code>sh_install.sql</code>	Main script for schema <code>sh</code> ; calls other scripts
<code>sh_populate.sql</code>	Populates the objects
<code>sh_uninstall.sql</code>	Uninstalls the schema

**Table 4-20 SH Sample Schema Objects**

Object Type	Objects
Dimension	<code>channels_dim</code> , <code>customers_dim</code> , <code>products_dim</code> , <code>promotions_dim</code> , <code>times_dim</code>
Index	<code>channels_pk</code> , <code>countries_pk</code> , <code>customers_gender_bix</code> , <code>customers_marital_bix</code> , <code>customers_pk</code> , <code>customers_yob_bix</code> , <code>dr\$sup_text_idx\$x</code> , <code>fw_psc_s_mv_chan_bix</code> , <code>fw_psc_s_mv_promo_bix</code> , <code>fw_psc_s_mv_subcat_bix</code> , <code>fw_psc_s_mv_wd_bix</code> , <code>products_pk</code> , <code>products_prod_cat_ix</code> , <code>products_prod_status_bix</code> , <code>products_prod_subcat_ix</code> , <code>promo_pk</code> , <code>sup_text_idx</code> , <code>times_pk</code>
Partitioned Index	<code>costs_prod_bix</code> , <code>costs_time_bix</code> , <code>sales_channel_bix</code> , <code>sales_cust_bix</code> , <code>sales_prod_bix</code> , <code>sales_promo_bix</code> , <code>sales_time_bix</code>
Materialized View	<code>cal_month_sales_mv</code> , <code>fweek_pscat_sales_mv</code>
Table	<code>channels</code> , <code>countries</code> , <code>customers</code> , <code>products</code> , <code>promotions</code> , <code>times</code>
Partitioned Table	<code>costs</code> , <code>sales</code>
View	<code>profits</code>

## SH Sample Schema Table Descriptions

The following tables describe the columns of each table of the `sh` sample schema.

- [Table SH.CHANNELS](#)
- [Table SH.COSTS](#)
- [Table SH.COUNTRIES](#)
- [Table SH.CUSTOMERS](#)
- [Table SH.PRODUCTS](#)
- [Table SH.PROMOTIONS](#)

- [Table SH.SALES](#)
- [Table SH.TIMES](#)

## Table SH.CHANNELS

**Table 4-21 SH.CHANNELS Table Description**

Column Name	Null?	Type
CHANNEL_ID	NOT NULL	NUMBER
CHANNEL_DESC	NOT NULL	VARCHAR2 (20)
CHANNEL_CLASS	NOT NULL	VARCHAR2 (20)
CHANNEL_CLASS_ID	NOT NULL	NUMBER
CHANNEL_TOTAL	NOT NULL	VARCHAR2 (13)
CHANNEL_TOTAL_ID	NOT NULL	NUMBER

## Table SH.COSTS

**Table 4-22 SH.COSTS Table Description**

Column Name	Null?	Type
PROD_ID	NOT NULL	NUMBER
TIME_ID	NOT NULL	DATE
PROMO_ID	NOT NULL	NUMBER
CHANNEL_ID	NOT NULL	NUMBER
UNIT_COST	NOT NULL	NUMBER (10, 2)
UNIT_PRICE	NOT NULL	NUMBER (10, 2)

## Table SH.COUNTRIES

**Table 4-23 SH.COUNTRIES Table Description**

Column Name	Null?	Type
COUNTRY_ID	NOT NULL	NUMBER
COUNTRY_ISO_CODE	NOT NULL	CHAR (2)
COUNTRY_NAME	NOT NULL	VARCHAR2 (40)
COUNTRY_SUBREGION	NOT NULL	VARCHAR2 (30)
COUNTRY_SUBREGION_ID	NOT NULL	NUMBER
COUNTRY_REGION	NOT NULL	VARCHAR2 (20)
COUNTRY_REGION_ID	NOT NULL	NUMBER
COUNTRY_TOTAL	NOT NULL	VARCHAR2 (11)
COUNTRY_TOTAL_ID	NOT NULL	NUMBER

## Table SH.CUSTOMERS

**Table 4-24 SH.CUSTOMERS Table Description**

Column Name	Null?	Type
CUST_ID	NOT NULL	NUMBER
CUST_FIRST_NAME	NOT NULL	VARCHAR2 (20)
CUST_LAST_NAME	NOT NULL	VARCHAR2 (40)
CUST_GENDER	NOT NULL	CHAR (1)
CUST_YEAR_OF_BIRTH	NOT NULL	NUMBER (4)
CUST_MARITAL_STATUS		VARCHAR2 (20)
CUST_STREET_ADDRESS	NOT NULL	VARCHAR2 (40)
CUST_POSTAL_CODE	NOT NULL	VARCHAR2 (10)
CUST_CITY	NOT NULL	VARCHAR2 (30)
CUST_CITY_ID	NOT NULL	NUMBER
CUST_STATE_PROVINCE	NOT NULL	VARCHAR2 (40)
CUST_STATE_PROVINCE_ID	NOT NULL	NUMBER
COUNTRY_ID	NOT NULL	NUMBER
CUST_MAIN_PHONE_NUMBER	NOT NULL	VARCHAR2 (25)
CUST_INCOME_LEVEL		VARCHAR2 (30)
CUST_CREDIT_LIMIT		NUMBER
CUST_EMAIL		VARCHAR2 (50)
CUST_TOTAL	NOT NULL	VARCHAR2 (14)
CUST_TOTAL_ID	NOT NULL	NUMBER
CUST_SRC_ID		NUMBER
CUST_EFF_FROM		DATE
CUST_EFF_TO		DATE
CUST_VALID		VARCHAR2 (1)

## Table SH.PRODUCTS

**Table 4-25 SH.PRODUCTS Table Description**

Column Name	Null?	Type
PROD_ID	NOT NULL	NUMBER (6)
PROD_NAME	NOT NULL	VARCHAR2 (50)
PROD_DESC	NOT NULL	VARCHAR2 (4000)
PROD_SUBCATEGORY	NOT NULL	VARCHAR2 (50)
PROD_SUBCATEGORY_ID	NOT NULL	NUMBER

**Table 4-25 (Cont.) SH.PRODUCTS Table Description**

Column Name	Null?	Type
PROD_SUBCATEGORY_DESC	NOT NULL	VARCHAR2 (2000)
PROD_CATEGORY	NOT NULL	VARCHAR2 (50)
PROD_CATEGORY_ID	NOT NULL	NUMBER
PROD_CATEGORY_DESC	NOT NULL	VARCHAR2 (2000)
PROD_WEIGHT_CLASS	NOT NULL	NUMBER (3)
PROD_UNIT_OF_MEASURE		VARCHAR2 (20)
PROD_PACK_SIZE	NOT NULL	VARCHAR2 (30)
SUPPLIER_ID	NOT NULL	NUMBER (6)
PROD_STATUS	NOT NULL	VARCHAR2 (20)
PROD_LIST_PRICE	NOT NULL	NUMBER (8,2)
PROD_MIN_PRICE	NOT NULL	NUMBER (8,2)
PROD_TOTAL	NOT NULL	VARCHAR2 (13)
PROD_TOTAL_ID	NOT NULL	NUMBER
PROD_SRC_ID		NUMBER
PROD_EFF_FROM		DATE
PROD_EFF_TO		DATE
PROD_VALID		VARCHAR2 (1)

## Table SH.PROMOTIONS

**Table 4-26 SH.PROMOTIONS Table Description**

Column Name	Null?	Type
PROMO_ID	NOT NULL	NUMBER (6)
PROMO_NAME	NOT NULL	VARCHAR2 (30)
PROMO_SUBCATEGORY	NOT NULL	VARCHAR2 (30)
PROMO_SUBCATEGORY_ID	NOT NULL	NUMBER
PROMO_CATEGORY	NOT NULL	VARCHAR2 (30)
PROMO_CATEGORY_ID	NOT NULL	NUMBER
PROMO_COST	NOT NULL	NUMBER (10,2)
PROMO_BEGIN_DATE	NOT NULL	DATE
PROMO_END_DATE	NOT NULL	DATE
PROMO_TOTAL	NOT NULL	VARCHAR2 (15)
PROMO_TOTAL_ID	NOT NULL	NUMBER

## Table SH.SALES

**Table 4-27 SH.SALES Table Description**

Column Name	Null?	Type
PROD_ID	NOT NULL	NUMBER(6)
CUST_ID	NOT NULL	NUMBER
TIME_ID	NOT NULL	DATE
CHANNEL_ID	NOT NULL	NUMBER(1)
PROMO_ID	NOT NULL	NUMBER(6)
QUANTITY_SOLD	NOT NULL	NUMBER(3)
AMOUNT_SOLD	NOT NULL	NUMBER(10,2)

## Table SH.TIMES

**Table 4-28 SH.TIMES Table Description**

Column Name	Null?	Type
TIME_ID	NOT NULL	DATE
DAY_NAME	NOT NULL	VARCHAR2(9)
DAY_NUMBER_IN_WEEK	NOT NULL	NUMBER(1)
DAY_NUMBER_IN_MONTH	NOT NULL	NUMBER(2)
CALENDAR_WEEK_NUMBER	NOT NULL	NUMBER(2)
FISCAL_WEEK_NUMBER	NOT NULL	NUMBER(2)
WEEK_ENDING_DAY	NOT NULL	DATE
WEEK_ENDING_DAY_ID	NOT NULL	NUMBER
CALENDAR_MONTH_NUMBER	NOT NULL	NUMBER(2)
FISCAL_MONTH_NUMBER	NOT NULL	NUMBER(2)
CALENDAR_MONTH_DESC	NOT NULL	VARCHAR2(8)
CALENDAR_MONTH_ID	NOT NULL	NUMBER
FISCAL_MONTH_DESC	NOT NULL	VARCHAR2(8)
FISCAL_MONTH_ID	NOT NULL	NUMBER
DAYS_IN_CAL_MONTH	NOT NULL	NUMBER
DAYS_IN_FIS_MONTH	NOT NULL	NUMBER
END_OF_CAL_MONTH	NOT NULL	DATE
END_OF_FIS_MONTH	NOT NULL	DATE
CALENDAR_MONTH_NAME	NOT NULL	VARCHAR2(9)
FISCAL_MONTH_NAME	NOT NULL	VARCHAR2(9)
CALENDAR_QUARTER_DESC	NOT NULL	CHAR(7)

**Table 4-28 (Cont.) SH.TIMES Table Description**

Column Name	Null?	Type
CALENDAR_QUARTER_ID	NOT NULL	NUMBER
FISCAL_QUARTER_DESC	NOT NULL	CHAR(7)
FISCAL_QUARTER_ID	NOT NULL	NUMBER
DAYS_IN_CAL_QUARTER	NOT NULL	NUMBER
DAYS_IN_FIS_QUARTER	NOT NULL	NUMBER
END_OF_CAL_QUARTER	NOT NULL	DATE
END_OF_FIS_QUARTER	NOT NULL	DATE
CALENDAR_QUARTER_NUMBER	NOT NULL	NUMBER(1)
FISCAL_QUARTER_NUMBER	NOT NULL	NUMBER(1)
CALENDAR_YEAR	NOT NULL	NUMBER(4)
CALENDAR_YEAR_ID	NOT NULL	NUMBER
FISCAL_YEAR	NOT NULL	NUMBER(4)
FISCAL_YEAR_ID	NOT NULL	NUMBER
DAYS_IN_CAL_YEAR	NOT NULL	NUMBER
DAYS_IN_FIS_YEAR	NOT NULL	NUMBER
END_OF_CAL_YEAR	NOT NULL	DATE
END_OF_FIS_YEAR	NOT NULL	DATE

## OE Sample Schema Scripts and Objects

The following tables list the names of the scripts that create the Order Entry (oe) sample schema and describe the objects in the schema. [Table 4-29](#) lists the oe scripts in alphabetical order, while [Table 4-30](#) lists the oe objects. Note that language-specific statements for product names and descriptions are stored in the following files, where each file represents a different language: oe\_p\_us.sql, oe\_p\_ar.sql, oe\_p\_cs.sql, oe\_p\_d.sql, oe\_p\_dk.sql, oe\_p\_e.sql, oe\_p\_el.sql, oe\_p\_es.sql, oe\_p\_f.sql, oe\_p\_frc.sql, oe\_p\_hu.sql, oe\_p\_i.sql, oe\_p\_iw.sql, oe\_p\_ja.sql, oe\_p\_ko.sql, oe\_p\_n.sql, oe\_p\_nl.sql, oe\_p\_pl.sql, oe\_p\_pt.sql, oe\_p\_ptb.sql, oe\_p\_ro.sql, oe\_p\_ru.sql, oe\_p\_s.sql, oe\_p\_sf.sql, oe\_p\_sk.sql, oe\_p\_th.sql, oe\_p\_tr.sql, oe\_p\_zhs.sql, oe\_p\_zht.sql.

**Table 4-29 OE Sample Schema Scripts**

Script Name	Description
oc_comnt.sql	Adds comments to the online catalog (oc) subschema wherever possible
oc_cre.sql	Creates subschema oc
oc_drop.sql	Drops subschema oc
oc_main.sql	Main script for subschema oc
oc_popul.sql	Populates the object tables

**Table 4-29 (Cont.) OE Sample Schema Scripts**

Script Name	Description
oe_analz.sql	Gathers statistics on the oe objects
oe_comnt.sql	Creates comments for the objects in the schema
oe_cre.sql	Creates the oe objects
oe_drop.sql	Drops schema oe and all its objects
oe_idx.sql	Creates indexes on the oe tables
oe_main.sql	Main script for the oe schema; calls other scripts
oe_views.sql	Creates the oe schema views

**Table 4-30 OE Sample Schema Objects**

Object Type	Objects
Index	customers_pk, cust_account_manager_ix, cust_email_ix, cust_lname_ix, cust_upper_name_ix, inventory_ix, inv_product_ix, item_order_ix, item_product_ix, order_items_pk, order_items_uk, order_pk, ord_customer_ix, ord_order_date_ix, ord_sales_rep_ix, prd_desc_pk, product_information_pk, prod_name_ix, prod_supplier_ix, promo_id_pk, reference_is_unique, sys_c003584, sys_c003587, sys_c003588, sys_c003589, sys_c003590, warehouses_pk, whs_location_ix
Function	get_phone_number_f
Sequence	orders_seq
Synonym	countries, departments, employees, jobs, job_history, locations
Table	customers, inventories, orders, order_items, product_descriptions, product_information, warehouses
Trigger	insert_ord_line, orders_items_trg, orders_trg
Type	catalog_typ, category_typ, composite_category_typ, corporate_customer_typ, customer_typ, cust_address_typ, inventory_list_typ, inventory_typ, leaf_category_typ, order_item_list_typ, order_item_typ, order_list_typ, order_typ, phone_list_typ, product_information_typ, product_ref_list_typ, subcategory_ref_list_typ, sys_yoid00000046073\$, sys_yoid00000046075\$, sys_yoid00000046077\$, sys_yoid00000046079\$, sys_yoid00000046081\$, warehouse_typ, xdbpo_actions_type, xdbpo_action_collection, xdbpo_action_type, xdbpo_lineitems_type, xdbpo_lineitem_collection, xdbpo_lineitem_type, xdbpo_part_type, xdbpo_rejection_type, xdbpo_shipinstructions_type, xdbpo_type
Type Body	catalog_typ, composite_category_typ, leaf_category_typ
View	account_managers, bombay_inventory, customers_view, deptview, oc_corporate_customers, oc_customers, oc_inventories, oc_orders, oc_product_information, orders_view, products, product_prices, sydney_inventory, toronto_inventory

## OE Sample Schema Table Descriptions

The following tables describe the columns of each table of the oe sample schema.

- [Table OE.CUSTOMERS](#)
- [Table OE.INVENTORIES](#)
- [Table OE.ORDERS](#)
- [Table OE.ORDER\\_ITEMS](#)
- [Table OE.PRODUCT\\_DESCRIPTIONS](#)
- [Table OE.PRODUCT\\_INFORMATION](#)
- [Table OE.WAREHOUSES](#)
- [Table OE.PURCHASEORDER](#)

### Table OE.CUSTOMERS

**Table 4-31 OE.CUSTOMERS Table Description**

Column Name	Null?	Type
CUSTOMER_ID	NOT NULL	NUMBER (6)
CUST_FIRST_NAME	NOT NULL	VARCHAR2 (20)
CUST_LAST_NAME	NOT NULL	VARCHAR2 (20)
CUST_ADDRESS		CUST_ADDRESS_TYP
PHONE_NUMBERS		PHONE_LIST_TYP
NLS_LANGUAGE		VARCHAR2 (3)
NLS_TERRITORY		VARCHAR2 (30)
CREDIT_LIMIT		NUMBER (9,2)
CUST_EMAIL		VARCHAR2 (30)
ACCOUNT_MGR_ID		NUMBER (6)
CUST_GEO_LOCATION		MDSYS.SDO_GEOMETRY
DATE_OF_BIRTH		DATE
MARITAL_STATUS		VARCHAR2 (20)
GENDER		VARCHAR2 (1)
INCOME_LEVEL		VARCHAR2 (20)

### Table OE.INVENTORIES

**Table 4-32 OE.INVENTORIES Table Description**

Column Name	Null?	Type
PRODUCT_ID	NOT NULL	NUMBER (6)

**Table 4-32 (Cont.) OE.INVENTORIES Table Description**

Column Name	Null?	Type
WAREHOUSE_ID	NOT NULL	NUMBER (3)
QUANTITY_ON_HAND	NOT NULL	NUMBER (8)

## Table OE.ORDERS

**Table 4-33 OE.ORDERS Table Description**

Column Name	Null?	Type
ORDER_ID	NOT NULL	NUMBER (12)
ORDER_DATE	NOT NULL	TIMESTAMP (6) WITH LOCAL TIME ZONE
ORDER_MODE		VARCHAR2 (8)
CUSTOMER_ID	NOT NULL	NUMBER (6)
ORDER_STATUS		NUMBER (2)
ORDER_TOTAL		NUMBER (8, 2)
SALES_REP_ID		NUMBER (6)
PROMOTION_ID		NUMBER (6)

## Table OE.ORDER\_ITEMS

**Table 4-34 OE.ORDER\_ITEMS Table Description**

Column Name	Null?	Type
ORDER_ID	NOT NULL	NUMBER (12)
LINE_ITEM_ID	NOT NULL	NUMBER (3)
PRODUCT_ID	NOT NULL	NUMBER (6)
UNIT_PRICE		NUMBER (8, 2)
QUANTITY		NUMBER (8)

## Table OE.PRODUCT\_DESCRIPTIONS

**Table 4-35 OE.PRODUCT\_DESCRIPTIONS Table Description**

Column Name	Null?	Type
PRODUCT_ID	NOT NULL	NUMBER (6)
LANGUAGE_ID	NOT NULL	VARCHAR2 (3)
TRANSLATED_NAME	NOT NULL	NVARCHAR2 (50)

**Table 4-35 (Cont.) OE.PRODUCT\_DESCRIPTIONS Table Description**

Column Name	Null?	Type
TRANSLATED_DESCRIPTION	NOT NULL	NVARCHAR2 (2000)

## Table OE.PRODUCT\_INFORMATION

**Table 4-36 OE.PRODUCT\_INFORMATION Table Description**

Column Name	Null?	Type
PRODUCT_ID	NOT NULL	NUMBER (6)
PRODUCT_NAME		VARCHAR2 (50)
PRODUCT_DESCRIPTION		VARCHAR2 (2000)
CATEGORY_ID		NUMBER (2)
WEIGHT_CLASS		NUMBER (1)
WARRANTY_PERIOD		INTERVAL YEAR (2) TO MONTH
SUPPLIER_ID		NUMBER (6)
PRODUCT_STATUS		VARCHAR2 (20)
LIST_PRICE		NUMBER (8, 2)
MIN_PRICE		NUMBER (8, 2)
CATALOG_URL		VARCHAR2 (50)

## Table OE.WAREHOUSES

**Table 4-37 OE.WAREHOUSES Table Description**

Column Name	Null?	Type
WAREHOUSE_ID	NOT NULL	NUMBER (3)
WAREHOUSE_SPEC		SYS.XMLTYPE
WAREHOUSE_NAME		VARCHAR2 (35)
LOCATION_ID		NUMBER (4)
WH_GEO_LOCATION		MDSYS.SDO_GEOMETRY

Column `warehouse_spec` of table `OE.warehouses` contains XMLType data. This data is not based on any XML schema, which means that it can take any form. However, the actual data in column `warehouse_spec` at the outset (before any changes you might have made to it) has a top-level element `Warehouse` with the following child elements:

- Building, with text node `Owned` or `Rented`
- Area, with text node a number (representing, for example, square feet)
- Docks, with text node the number of loading docks (for example, 1, 2, or 3)

- DockType, with text node empty or Rear Load or Side Load
- WaterAccess, with text node Y or N
- RailAccess, with text node Y or N
- Parking, with text node Street or Lot
- VClearance (vertical clearance), with text node a number followed by a linear unit (for example, 11.5 ft)



#### See Also:

*Oracle XML DB Developer's Guide* for examples using the XMLType data in column warehouse\_spec

## Table OE.PURCHASEORDER

Table OE.purchaseorder is an object-relational table with XMLType data. The data conforms to XML schema purchaseOrder.xsd.

## PM Sample Schema Scripts and Objects

This following tables list the names of the scripts that create the Product Media (pm) schema and describe the objects in the schema. Table 4-38 lists the pm scripts in alphabetical order, while Table 4-39 lists the pm objects. Note that the SQL\*Loader data file pm\_p\_lob.dat contains hard-coded absolute path names that have been set during installation. Before attempting to load the data in a different environment, you must first edit the path names in this file.

**Table 4-38 PM Schema Scripts**

Script Name	Description
pm_analz.sql	Gathers statistics on the pm objects
pm_cre.sql	Creates the pm objects
pm_drop.sql	Drops schema pm and all its objects
pm_main.sql	Main script for schema pm, which calls other scripts
pm_p_lob.sql,	Populates the objects in the schema

**Table 4-39 PM Sample Schema Objects**

Object Type	Objects
Index	printmedia_pk, sys_c003538
Table	print_media
Type	adheader_typ, textdoc_tab, textdoc_typ

## PM Sample Schema Table Descriptions

The following table describes the columns of the `print_media` table in the `pm` sample schema.

- [Table PM.PRINT\\_MEDIA](#)

### Table PM.PRINT\_MEDIA

**Table 4-40 PM.PRINT\_MEDIA Table Description**

Column Name	Null?	Type
PRODUCT_ID	NOT NULL	NUMBER(6)
AD_ID	NOT NULL	NUMBER(6)
AD_COMPOSITE		BLOB
AD_SOURCETEXT		CLOB
AD_FINALTEXT		CLOB
AD_FLTEXTN		NCLOB
AD_TEXTDOCS_NTAB		TEXTDOC_TAB
AD_PHOTO		BLOB
AD_GRAPHIC		BINARY FILE LOB
AD_HEADER		ADHEADER_TYP

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