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CST 1204

Professor Oleg Raginskiy 03.05.2021

**Homework 3**

* **Use SQL to complete the following exercises**

1. Create a table named SALES REP. The table has the same structure as the REP table shown in Figure 3-11 except the LAST\_NAME column should use the VARCHAR data type and the COMMISSION and RATE columns should use the NUMBER data type. Execute the command to describe the layout and characteristics of the SALES\_REP table.
2. CREATE TABLE SALES\_REP( REP\_NUM CHAR(2) NOT NULL, LAST\_NAME VARCHAR(15) DEFAULT NULL, FIRST\_NAME CHAR(15) DEFAULT NULL, STREET CHAR(15) DEFAULT NULL, CITY CHAR(15) DEFAULT NULL, PROVINCE CHAR(2) DEFAULT NULL, POSTAL\_CODE CHAR(5) DEFAULT NULL, COMISSION NUMERIC(11,2) DEFAULT NULL, RATE NUMERIC(11,2) DEFAULT NULL, PRIMARY KEY (REP\_NUM));
3. DESC SALES\_REP;

| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [SALES\_REP](javascript:ret_Column('WKSP_JBORACLE.SALES_REP');) | [REP\_NUM](javascript:ret_Column('REP_NUM');) | CHAR | 2 | - | - | 1 | - | - | - |
|  | [LAST\_NAME](javascript:ret_Column('LAST_NAME');) | VARCHAR2 | 15 | - | - | - | nullable | NULL | - |
|  | [FIRST\_NAME](javascript:ret_Column('FIRST_NAME');) | CHAR | 15 | - | - | - | nullable | NULL | - |
|  | [STREET](javascript:ret_Column('STREET');) | CHAR | 15 | - | - | - | nullable | NULL | - |
|  | [CITY](javascript:ret_Column('CITY');) | CHAR | 15 | - | - | - | nullable | NULL | - |
|  | [PROVINCE](javascript:ret_Column('PROVINCE');) | CHAR | 2 | - | - | - | nullable | NULL | - |
|  | [POSTAL\_CODE](javascript:ret_Column('POSTAL_CODE');) | CHAR | 5 | - | - | - | nullable | NULL | - |
|  | [COMISSION](javascript:ret_Column('COMISSION');) | NUMBER | - | 11 | 2 | - | nullable | NULL | - |
|  | [RATE](javascript:ret_Column('RATE');) | NUMBER | - | 11 | 2 | - | nullable | NULL | - |

1. Add the following row to the SALES\_REP table: rep number: 35, last name: Lim; first name: Louise; street: 535 Vincent Dr.; city: Grove; state: CA; postal code: 90092; com- mission: 0.00; and rate: 0.05. Display the contents of the SALES\_REP table.

INSERT INTO SALES\_REP(REP\_NUM, LAST\_NAME, FIRST\_NAME, STREET, CITY, STATE, POSTAL\_CODE, COMISSION, RATE)

VALUES ('35', 'Lim', 'Louise', '535 Vincent Dr.', 'Grove', 'CA', '90092', 0.00, 0.05);

SELECT \* FROM SALES\_REP;

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **REP\_NUM** | **LAST\_NAME** | **FIRST\_NAME** | **STREET** | **CITY** | **STATE** | **POSTAL\_CODE** | **COMISSION** | **RATE** |
| 35 | Lim | Louise | 535 Vincent Dr. | Grove | CA | 90092 | 0 | .05 |

1. Delete SALES\_REP table

DROP TABLE SALES\_REP;

Table dropped.

0.68 seconds

1. Run the script file for the TAL Distributors database to create the five tables and add records to the tables. Be sure to select the script file for the particular DBMS that you are using (Oracle, SOL Server, or Access). *(Note:* If you do not have the script files for this text, ask your instructor for assistance.)
2. Confirm that you have created the tables correctly by describing each table and comparing the results to Figures 3-11 , 3-30, 3-32, 3-34, and 3-36.

DESC SALES\_REP;

| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [CUSTOMER](javascript:ret_Column('WKSP_JBORACLE.CUSTOMER');) | [CUSTOMER\_NUM](javascript:ret_Column('CUSTOMER_NUM');) | CHAR | 3 | - | - | 1 | - | - | - |
|  | [CUSTOMER\_NAME](javascript:ret_Column('CUSTOMER_NAME');) | CHAR | 35 | - | - | - | - | - | - |
|  | [STREET](javascript:ret_Column('STREET');) | CHAR | 20 | - | - | - | nullable | - | - |
|  | [CITY](javascript:ret_Column('CITY');) | CHAR | 15 | - | - | - | nullable | - | - |
|  | [STATE](javascript:ret_Column('STATE');) | CHAR | 2 | - | - | - | nullable | - | - |
|  | [POSTAL\_CODE](javascript:ret_Column('POSTAL_CODE');) | CHAR | 5 | - | - | - | nullable | - | - |
|  | [BALANCE](javascript:ret_Column('BALANCE');) | NUMBER | - | 8 | 2 | - | nullable | - | - |
|  | [CREDIT\_LIMIT](javascript:ret_Column('CREDIT_LIMIT');) | NUMBER | - | 8 | 2 | - | nullable | - | - |
|  | [REP\_NUM](javascript:ret_Column('REP_NUM');) | CHAR | 2 | - | - | - | nullable | - | - |
|  | | | | | | | | | | |

DESC ITEM;

| **Table** | | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [ITEM](javascript:ret_Column('WKSP_JBORACLE.ITEM');) | [ITEM\_NUM](javascript:ret_Column('ITEM_NUM');) | | CHAR | 4 | - | - | 1 | - | - | - |
|  | [DESCRIPTION](javascript:ret_Column('DESCRIPTION');) | | CHAR | 30 | - | - | - | nullable | - | - |
|  | [ON\_HAND](javascript:ret_Column('ON_HAND');) | | NUMBER | - | 4 | 0 | - | nullable | - | - |
|  | [CATEGORY](javascript:ret_Column('CATEGORY');) | | CHAR | 3 | - | - | - | nullable | - | - |
|  | [STOREHOUSE](javascript:ret_Column('STOREHOUSE');) | | CHAR | 1 | - | - | - | nullable | - | - |
|  | [PRICE](javascript:ret_Column('PRICE');) | | NUMBER | - | 6 | 2 | - | nullable | - | - |

DESC ORDER\_LINE;

| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [ORDER\_LINE](javascript:ret_Column('WKSP_JBORACLE.ORDER_LINE');) | [ORDER\_NUM](javascript:ret_Column('ORDER_NUM');) | CHAR | 5 | - | - | 1 | - | - | - |
|  | [ITEM\_NUM](javascript:ret_Column('ITEM_NUM');) | CHAR | 4 | - | - | 2 | - | - | - |
|  | [NUM\_ORDERED](javascript:ret_Column('NUM_ORDERED');) | NUMBER | - | 3 | 0 | - | nullable | - | - |
|  | [QUOTED\_PRICE](javascript:ret_Column('QUOTED_PRICE');) | NUMBER | - | 6 | 2 | - | nullable | - | - |

DESC ORDERS;

| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [ORDERS](javascript:ret_Column('WKSP_JBORACLE.ORDERS');) | [ORDER\_NUM](javascript:ret_Column('ORDER_NUM');) | CHAR | 5 | - | - | 1 | - | - | - |
|  | [ORDER\_DATE](javascript:ret_Column('ORDER_DATE');) | DATE | 7 | - | - | - | nullable | - | - |
|  | [CUSTOMER\_NUM](javascript:ret_Column('CUSTOMER_NUM');) | CHAR | 3 | - | - | - | nullable | - | - |

DESC REP;

| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [REP](javascript:ret_Column('WKSP_JBORACLE.REP');) | [REP\_NUM](javascript:ret_Column('REP_NUM');) | CHAR | 2 | - | - | 1 | - | - | - |
|  | [LAST\_NAME](javascript:ret_Column('LAST_NAME');) | CHAR | 15 | - | - | - | nullable | - | - |
|  | [FIRST\_NAME](javascript:ret_Column('FIRST_NAME');) | CHAR | 15 | - | - | - | nullable | - | - |
|  | [STREET](javascript:ret_Column('STREET');) | CHAR | 15 | - | - | - | nullable | - | - |
|  | [CITY](javascript:ret_Column('CITY');) | CHAR | 15 | - | - | - | nullable | - | - |
|  | [STATE](javascript:ret_Column('STATE');) | CHAR | 2 | - | - | - | nullable | - | - |
|  | [POSTAL\_CODE](javascript:ret_Column('POSTAL_CODE');) | CHAR | 5 | - | - | - | nullable | - | - |
|  | [COMMISSION](javascript:ret_Column('COMMISSION');) | NUMBER | - | 7 | 2 | - | nullable | - | - |
|  | [RATE](javascript:ret_Column('RATE');) | NUMBER | - | 3 | 2 | - | nullable | - | - |

1. Confirm that you have added all data correctly by viewing the data in each table and comparing the results to Figure 2-1 in Chapter 2.

SELECT \* FROM CUSTOMER;

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CUSTOMER\_NUM** | **CUSTOMER\_NAME** | **STREET** | **CITY** | **STATE** | **POSTAL\_CODE** | **BALANCE** | **CREDIT\_LIMIT** | **REP\_NUM** |
| 126 | Toys Galore | 28 Laketon St. | Fullton | CA | 90085 | 1210.25 | 7500 | 15 |
| 260 | Brookings Direct | 452 Columbus Dr. | Grove | CA | 90092 | 575 | 10000 | 30 |
| 334 | The Everything Shop | 342 Magee St. | Congaree | CA | 90097 | 2345.75 | 7500 | 45 |
| 386 | Johnson's Department Store | 124 Main St. | Northfield | CA | 90098 | 879.25 | 7500 | 30 |
| 440 | Grove Historical Museum Store | 3456 Central Ave. | Fullton | CA | 90085 | 345 | 5000 | 45 |
| 502 | Cards and More | 167 Hale St. | Mesa | CA | 90104 | 5025.75 | 5000 | 15 |
| 586 | Almondton General Store | 3345 Devon Ave. | Almondton | CA | 90125 | 3456.75 | 15000 | 45 |
| 665 | Cricket Gift Shop | 372 Oxford St. | Grove | CA | 90092 | 678.9 | 7500 | 30 |
| 713 | Cress Store | 12 Rising Sun Ave. | Congaree | CA | 90097 | 4234.6 | 10000 | 15 |
| 796 | Unique Gifts | 786 Passmore St. | Northfield | CA | 90098 | 124.75 | 7500 | 45 |

SELECT \* FROM ITEM;

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ITEM\_NUM** | **DESCRIPTION** | **ON\_HAND** | **CATEGORY** | **STOREHOUSE** | **PRICE** |
| AH74 | Patience | 9 | GME | 3 | 22.99 |
| BR23 | Skittles | 21 | GME | 2 | 29.99 |
| CD33 | Wood Block Set (48 piece) | 36 | TOY | 1 | 89.49 |
| DL51 | Classic Railway Set | 12 | TOY | 3 | 107.95 |
| DR67 | Giant Star Brain Teaser | 24 | PZL | 2 | 31.95 |
| DW23 | Mancala | 40 | GME | 3 | 50 |
| FD11 | Rocking Horse | 8 | TOY | 3 | 124.95 |
| FH24 | Puzzle Gift Set | 65 | PZL | 1 | 38.95 |
| KA12 | Cribbage Set | 56 | GME | 3 | 75 |
| KD34 | Pentominoes Brain Teaser | 60 | PZL | 2 | 14.95 |

SELECT \* FROM ORDER\_LINE;

|  |  |  |  |
| --- | --- | --- | --- |
| **ORDER\_NUM** | **ITEM\_NUM** | **NUM\_ORDERED** | **QUOTED\_PRICE** |
| 51608 | CD33 | 5 | 86.99 |
| 51610 | KL78 | 25 | 10.95 |
| 51610 | TR40 | 10 | 13.99 |
| 51613 | DL51 | 5 | 104.95 |
| 51614 | FD11 | 1 | 124.95 |
| 51617 | NL89 | 4 | 115.99 |
| 51617 | TW35 | 3 | 116.95 |
| 51619 | FD11 | 2 | 121.95 |
| 51623 | DR67 | 5 | 29.95 |
| 51623 | FH24 | 12 | 36.95 |

SELECT \* FROM ORDERS;

|  |  |  |
| --- | --- | --- |
| **ORDER\_NUM** | **ORDER\_DATE** | **CUSTOMER\_NUM** |
| 51608 | 10/12/2015 | 126 |
| 51610 | 10/12/2015 | 334 |
| 51613 | 10/13/2015 | 386 |
| 51614 | 10/13/2015 | 260 |
| 51617 | 10/15/2015 | 586 |
| 51619 | 10/15/2015 | 126 |
| 51623 | 10/15/2015 | 586 |
| 51625 | 10/16/2015 | 796 |

SELECT \* FROM REP;

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **REP\_NUM** | **LAST\_NAME** | **FIRST\_NAME** | **STREET** | **CITY** | **STATE** | **POSTAL\_CODE** | **COMMISSION** | **RATE** |
| 15 | Campos | Rafael | 724 Vinca Dr. | Grove | CA | 90092 | 23457.5 | .06 |
| 30 | Gradey | Megan | 632 Liatris St. | Fullton | CA | 90085 | 41317 | .08 |
| 45 | Tian | Hui | 1785 Tyler Ave. | Northfield | CA | 90098 | 27789.25 | .06 |
| 60 | Sefton | Janet | 267 Oakley St. | Congaree | CA | 90097 | 0 | .06 |

The tables check out with the ones in the book

1. Review the data for the ITEM table in Figure 2-1 in Chapter 2 and then review the data types used to create the ITEM table in Figure 3-34. Suggest alternate data types for the DESCRIPTION, ON\_HAND, and STOREHOUSE fields and explain your recommendations.

* The data type for Column DESCRIPTION is CHAR and can be changed to VARCHAR. Because CHAR is a fixed length whereas VARCHAR is variable length, saving space when there is variation in the length of the values.
* The data type for Column ON\_HAND is NUMBER and can be changed to SMALLINT. SMALLINT uses less memory vs NUMBER
* The data type for Column STOREHOUSE is CHAR can be changed to TINYINT. Numeric values faster than character values and with a small number of storehouses there is no need to use the type CHAR.