**FSDM / CPCM – 2023S**

**Database Design & SQL**

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**Practical Exercise 13\_14\_15\_16**

**Fig 1**

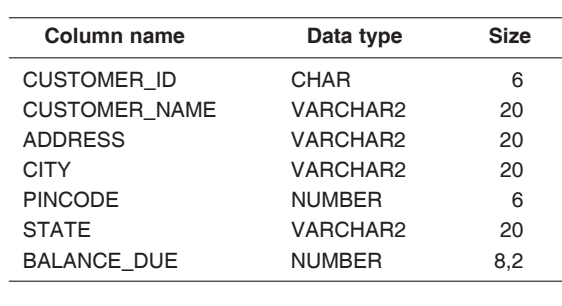


Figure : Table structure

**Fig 2** page1image27955264

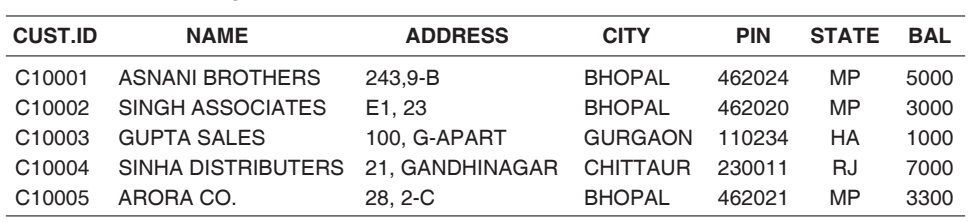


Figure : Values inside table

**Practical Activity #1**

First, we need to execute the query to construct the **"CUSTOMERS\_142"** table in the Oracle database using the column names and datatypes it contains, as shown in figure 1. The query is below:

**CREATE TABLE CUSTOMERS\_142 (**

**CUSTOMER\_ID CHAR (6),**

**CUSTOMER\_NAME VARCHAR2(20),**

**ADDRESS VARCHAR2(20),**

**CITY VARCHAR2(20),**

**PINCODE NUMBER (6),**

**STATE VARCHAR2(20),**

**BALANCE\_DUE NUMBER (8,2))**

Explanations of each line of table creation SQL query:

* To construct a new table with the name **"CUSTOMERS\_142"** the query starts with **"CREATE TABLE CUSTOMERS\_142"**.
* The following columns will be in the table:
  + The **"CUSTOMER\_ID"** column, which has a **"CHAR (6)"** data type. It can hold as many as six characters.
  + **"VARCHAR2(20)"** data type for the "**CUSTOMER\_NAME"** column. It can hold strings with a configurable length of up to 20 characters.
  + **"VARCHAR2(20)"** data type for the **"ADDRESS"** field. It can hold strings with a configurable length of up to 20 characters.
  + **"VARCHAR2(20)"** data type for the **"CITY"** column. It can hold strings with a configurable length of up to 20 characters.
  + **"PINCODE"** column with **"NUMBER (6)"** as the data type. It can store numbers with up to six digits.
  + A column named **"STATE"** with the data type **"VARCHAR2(20)"**. It can hold strings with a configurable length of up to 20 characters.
  + **"BALANCE\_DUE"** column containing a data type of **"NUMBER (8,2)"**. It can store numerical values up to eight digits with two decimal places.

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Description automatically generated with medium confidence**A screenshot of a computer

Description automatically generated with medium confidence**For the execution of the query and visualizing the output I have used live oracle from <https://livesql.oracle.com/>. The executed query and it’s result output have been attached with screenshots below:

Figure 3: Query to create new table.

Figure 4: Created table structure.

**Practical Activity #2**On the second step to insert the data into the **“CUSTOMERS\_142”** table as shown in figure 2, we need to execute the **“INSERT”** query with appropriate values as below:

1. **INSERT INTO CUSTOMERS\_142 (CUSTOMER\_ID, CUSTOMER\_NAME, ADDRESS, CITY, PINCODE, STATE, BALANCE\_DUE) VALUES ('C10001', 'ASNANI BROTHERS', '243,9-B', 'BHOPAL', 462024, 'MP', 5000);**
2. **INSERT INTO CUSTOMERS\_142 (CUSTOMER\_ID, CUSTOMER\_NAME, ADDRESS, CITY, PINCODE, STATE, BALANCE\_DUE) VALUES ('C10002', 'SINGH ASSOCIATES', 'E1,23', 'BHOPAL', 462020, 'MP', 3000);**
3. **INSERT INTO CUSTOMERS\_142 (CUSTOMER\_ID, CUSTOMER\_NAME, ADDRESS, CITY, PINCODE, STATE, BALANCE\_DUE) VALUES ('C10003', 'GUPTA SALES', '100, G-APART', 'GURGAON', 110234, 'HA', 1000);**
4. **INSERT INTO CUSTOMERS\_142 (CUSTOMER\_ID, CUSTOMER\_NAME, ADDRESS, CITY, PINCODE, STATE, BALANCE\_DUE) VALUES ('C10004', 'SINHA DISTRIBUTERS', '21, GANDHINAGAR', 'CHITTAUR', 230011, 'RJ', 7000);**
5. **INSERT INTO CUSTOMERS\_142 (CUSTOMER\_ID, CUSTOMER\_NAME, ADDRESS, CITY, PINCODE, STATE, BALANCE\_DUE) VALUES ('C10005', 'ARORA CO.', '28, 2-C', 'BHOPAL', 462021, 'MP', 3300);**

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Description automatically generated with medium confidenceA single row of data is added to the table with each **INSERT** operation. The values offered in the **VALUES** clause match the columns in the table structure's defined order. The following figure illustrates the insert queries that were executed:

Figure 5: Query to insert values to table.

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Description automatically generated with medium confidenceThe data inserted into the table can be visualized in the picture below:

Figure 6: Inserted Values in the table

**Practical Activity #3**To update the table with the given values we need to execute the following query along with the new values. The query is below:

**UPDATE CUSTOMERS\_142 SET CITY = 'INDOR' WHERE CUSTOMER\_NAME = 'ASNANI BROTHERS';**

**UPDATE CUSTOMERS\_142 SET ADDRESS = 'E2,24-C', BALANCE\_DUE = 10000 WHERE CUSTOMER\_NAME = 'SINGH ASSOCIATES'**

The first **UPDATE** query replaces **"BHOPAL"** with **"INDORE"** as the city of the client with the name **"ASNANI BROTHERS"**. In the second **UPDATE** query, the customer with the name **"SINGH ASSOCIATES"** has their address changed to **"E2, 24-C"** and their **BALANCE\_DUE** value increased to **10,000**. The executed query and it’s result can be visualized from the screenshot below:

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Description automatically generated

Figure 7: Query to update columns in the table.

Figure 8: Updated columns with new values

**Practical Activity #4**

For deleting the records from the table, we can use **“DELETE”** query.

The required query to delete the records for **“SHINHA DISTRIBUTERS”** we can use the following query:

**DELETE FROM CUSTOMERS\_142 WHERE CUSTOMER\_NAME = 'SINHA DISTRIBUTERS';**

Similarly, to delete the customers with balance below 4000, we can use the following query:

**DELETE FROM CUSTOMERS\_142 WHERE BALANCE\_DUE < 4000;**

A screenshot of a computer

Description automatically generated with medium confidenceThe executed query and the output are attached in below screenshots:

Figure 9: Delete columns based on given condition.

A screenshot of a computer

Description automatically generated with medium confidenceLastly, to delete the entire table we can use **“DROP”** query as shown below:

Figure 10: Updated table after deletion of columns

**DROP TABLE CUSTOMERS\_142;**

A screenshot of a computer

Description automatically generated with medium confidenceThe executed query can be visualized in screenshot below:

Figure 11: Drop the table

A screenshot of a computer

Description automatically generated with medium confidenceAs we have erased the entire table along with its columns containing data, when we try to execute the query to retrieve the table, it gives us error explain that the requested table doesn’t exist anymore as shown in below screenshot:

Figure 12: Retrieve the deleted table