Practice: Running SQL Statements in Oracle Machine Learning

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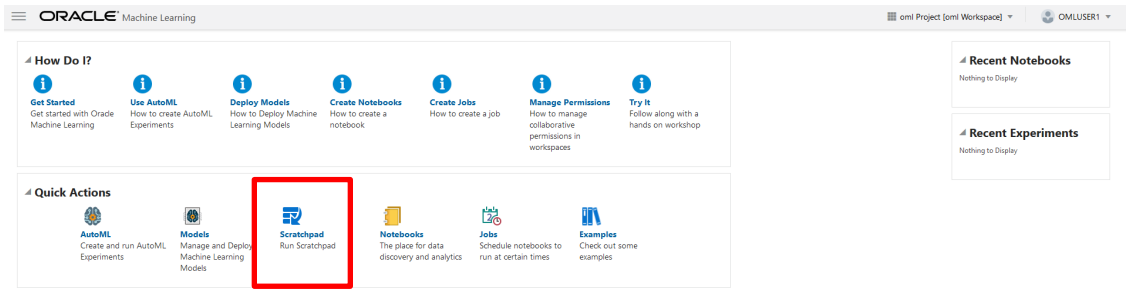
Overview

In this practice, you create SQL scripts in Oracle Machine Learning.

Tasks

1. Log into your Oracle Cloud Free Tier Account
2. Navigate to the **Oracle Autonomous Databases** home page where your instance is listed.
   a. Click your Data Warehouse instance name.
   b. Click the **Service Console**

option.
   c. If required, log in as the **admin** user. Here, you are signing in to the **Oracle Autonomous Data Warehouse** console.
   d. On the left hand side menu, click **Administration**.
   e. Click Manage Oracle ML Users.
   f. If required, log in as the **admin** user. Here, you are signing in to the Oracle Machine Learning console.
   g. Click **Home** on the top-right corner.
   h. Log in as the **OMLUSER1** user. This time, you are signing in to the Oracle Machine Learning console as the **OMLUSER1** user.
3. Perform these tasks to run SQL statements.
   a. On the Oracle Machine Learning home page, click **Scratchpad**.



   b. If there are SQL statements from a previous run, click **Clear notebook** and click **OK** to clear the scratchpad.

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c. Enter the SQL statement in the SQL Query Scratchpad and press **Shift + Enter**.

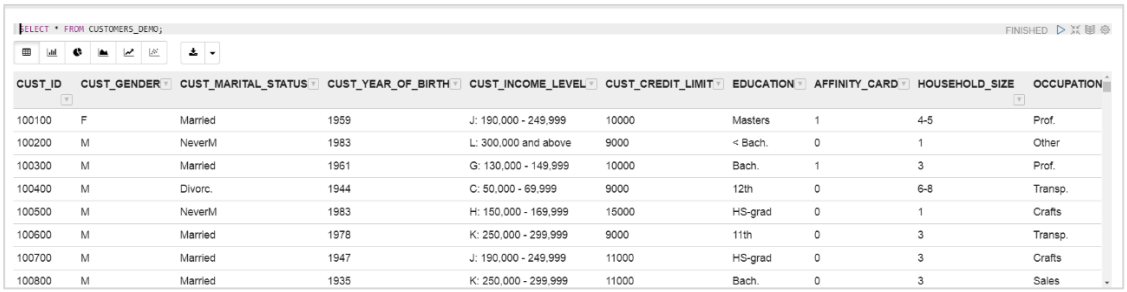
```
Select * from TAB;
```

The result is displayed as follows:

TNAME	TABTYPE	CLUSTERID
CUSTOMERS_DEMO	TABLE	
SALES_TRANS_CUST	VIEW	
AR_SH_SAMPLE_SETTINGS	TABLE	
SUPPLEMENTARY_DEMOGRAPHICS3	TABLE	

d. Enter the SQL statement and press **Shift + Enter**.

```
SELECT * FROM CUSTOMERS_DEMO;
```



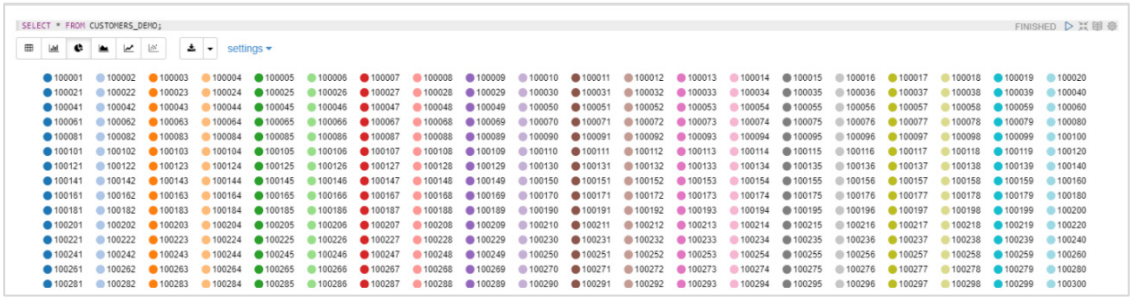
CUST_ID	CUST_GENDER	CUST_MARITAL_STATUS	CUST_YEAR_OF_BIRTH	CUST_INCOME_LEVEL	CUST_CREDIT_LIMIT	EDUCATION	AFFINITY_CARD	HOUSEHOLD_SIZE	OCCUPATION
100100	F	Married	1959	J: 190,000 - 249,999	10000	Masters	1	4-5	Prof.
100200	M	NeverM	1983	L: 300,000 and above	9000	< Bach.	0	1	Other
100300	M	Married	1961	G: 130,000 - 149,999	10000	Bach.	1	3	Prof.
100400	M	Divorc.	1944	C: 50,000 - 69,999	9000	12th	0	6-8	Transp.
100500	M	NeverM	1983	H: 150,000 - 169,999	15000	HS-grad	0	1	Crafts
100600	M	Married	1978	K: 250,000 - 299,999	9000	11th	0	3	Transp.
100700	M	Married	1947	J: 190,000 - 249,999	11000	HS-grad	0	3	Crafts
100800	M	Married	1935	K: 250,000 - 299,999	11000	Bach.	0	3	Sales

4. Perform these tasks to visualize data using Oracle Machine Leaning.

a. Continue from the previous step and click any one of the chart options.

For example, next to Bar Chart is Pie Chart. Click that.

b. A corresponding chart is displayed.



c. If you want to change the X and Y axis, click **Settings** and drag and drop the columns for visualizations as shown below.

For example, click the “x” of all the fields in Keys, Groups, and Values.
You will see No Data Available.
Then, drag Cust_Gender into Keys, Education into Groups, and Cus_Credit_Limit into Values.

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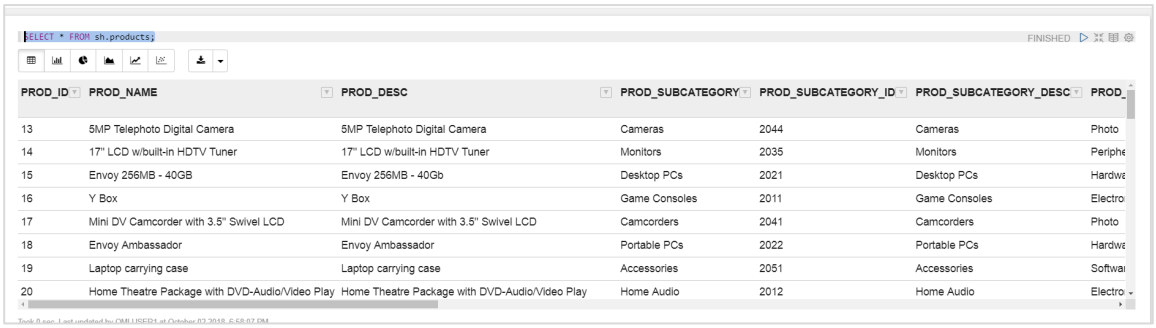
In Values, click Cust_Credit_Limit. You will see a drop-down list of different options. Select Count.

Your results might look like this:

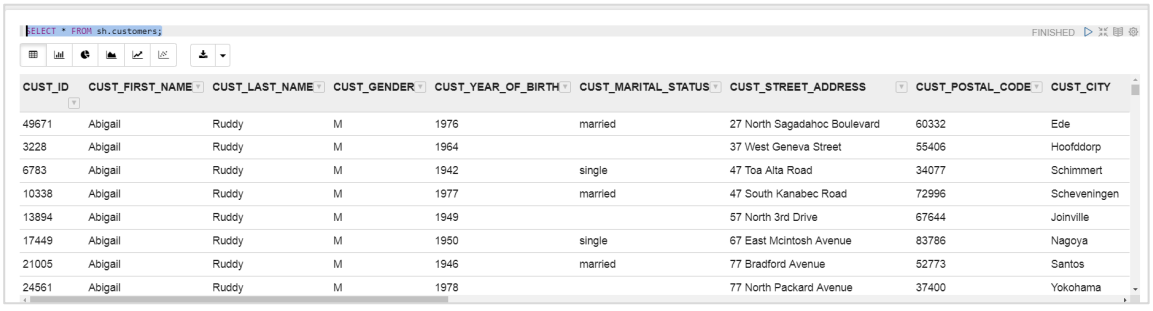
d. Enter the SQL statements one by one in the SQL Query Scratchpad and press **Shift + Enter** to see the results as shown below.

```
SELECT * FROM sh.products;
```



PROD_ID	PROD_NAME	PROD_DESC	PROD_SUBCATEGORY	PROD_SUBCATEGORY_ID	PROD_SUBCATEGORY_DESC	PROD_
13	5MP Telephoto Digital Camera	5MP Telephoto Digital Camera	Cameras	2044	Cameras	Photo
14	17" LCD w/built-in HDTV Tuner	17" LCD w/built-in HDTV Tuner	Monitors	2035	Monitors	Periphe
15	Envoy 256MB - 40GB	Envoy 256MB - 40Gb	Desktop PCs	2021	Desktop PCs	Hardwa
16	Y Box	Y Box	Game Consoles	2011	Game Consoles	Electro
17	Mini DV Camcorder with 3.5" Swivel LCD	Mini DV Camcorder with 3.5" Swivel LCD	Camcorders	2041	Camcorders	Photo
18	Envoy Ambassador	Envoy Ambassador	Portable PCs	2022	Portable PCs	Hardwa
19	Laptop carrying case	Laptop carrying case	Accessories	2051	Accessories	Softwa
20	Home Theatre Package with DVD-Audio/Video Play	Home Theatre Package with DVD-Audio/Video Play	Home Audio	2012	Home Audio	Electro

```
SELECT * FROM sh.customers;
```



CUST_ID	CUST_FIRST_NAME	CUST_LAST_NAME	CUST_GENDER	CUST_YEAR_OF_BIRTH	CUST_MARITAL_STATUS	CUST_STREET_ADDRESS	CUST_POSTAL_CODE	CUST_CITY
49671	Abigail	Ruddy	M	1976	married	27 North Sagadahoc Boulevard	60332	Ede
3228	Abigail	Ruddy	M	1964		37 West Geneva Street	55406	Hoofddorp
6783	Abigail	Ruddy	M	1942	single	47 Toa Alta Road	34077	Schimmert
10338	Abigail	Ruddy	M	1977	married	47 South Kanabec Road	72996	Scheveningen
13894	Abigail	Ruddy	M	1949		57 North 3rd Drive	67644	Joinville
17449	Abigail	Ruddy	M	1950	single	67 East Mcintosh Avenue	83786	Nagoya
21005	Abigail	Ruddy	M	1946	married	77 Bradford Avenue	52773	Santos
24561	Abigail	Ruddy	M	1978		77 North Packard Avenue	37400	Yokohama

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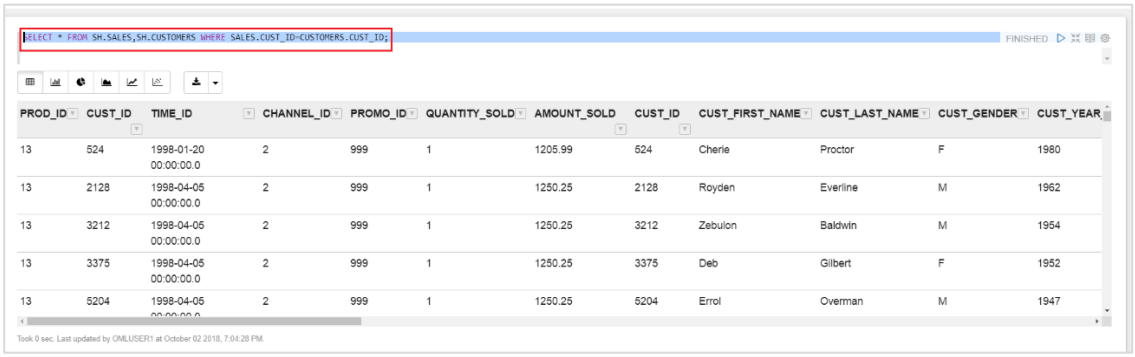
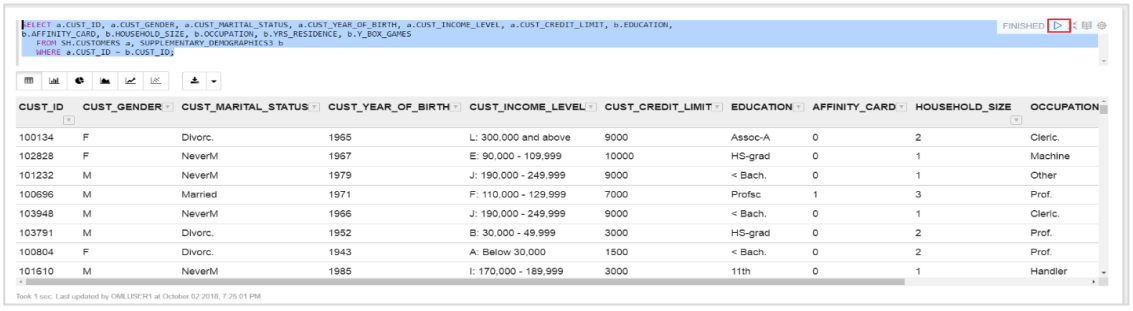
```
SELECT * FROM SH.SALES,SH.CUSTOMERS WHERE
 SALES.CUST_ID=CUSTOMERS.CUST_ID;
```



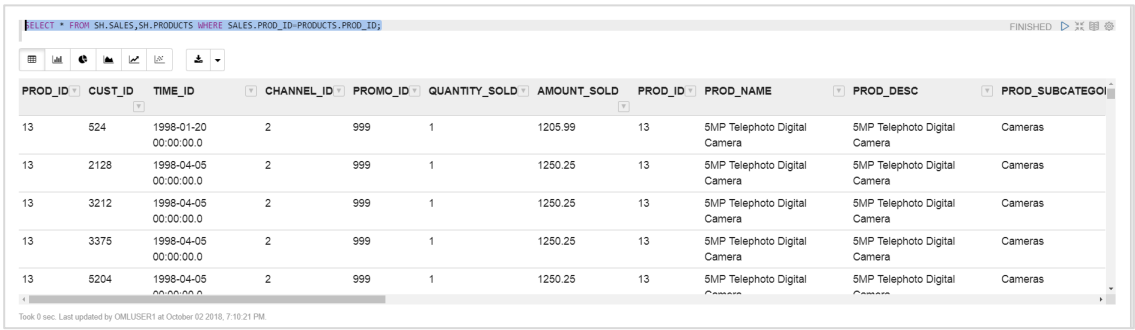
PROD_ID	CUST_ID	TIME_ID	CHANNEL_ID	PROMO_ID	QUANTITY_SOLD	AMOUNT_SOLD	CUST_ID	CUST_FIRST_NAME	CUST_LAST_NAME	CUST_GENDER	CUST_YEAR
13	524	1998-01-20 00:00:00.0	2	999	1	1205.99	524	Cherie	Proctor	F	1980
13	2128	1998-04-05 00:00:00.0	2	999	1	1250.25	2128	Royden	Everline	M	1962
13	3212	1998-04-05 00:00:00.0	2	999	1	1250.25	3212	Zebulon	Baldwin	M	1954
13	3375	1998-04-05 00:00:00.0	2	999	1	1250.25	3375	Deb	Gilbert	F	1952
13	5204	1998-04-05	2	999	1	1250.25	5204	Errol	Overman	M	1947

```
SELECT a.CUST_ID, a.CUST_GENDER, a.CUST_MARITAL_STATUS,
a.CUST_YEAR_OF_BIRTH, a.CUST_INCOME_LEVEL,
a.CUST_CREDIT_LIMIT, b.EDUCATION,
b.AFFINITY_CARD, b.HOUSEHOLD_SIZE, b.OCCUPATION,
b.YRS_RESIDENCE, b.Y_BOX_GAMES
   FROM SH.CUSTOMERS a, SUPPLEMENTARY_DEMOGRAPHICS3 b
   WHERE a.CUST_ID = b.CUST_ID;
```



CUST_ID	CUST_GENDER	CUST_MARITAL_STATUS	CUST_YEAR_OF_BIRTH	CUST_INCOME_LEVEL	CUST_CREDIT_LIMIT	EDUCATION	AFFINITY_CARD	HOUSEHOLD_SIZE	OCCUPATION
100134	F	Divorc.	1965	L: 300,000 and above	9000	Assoc-A	0	2	Cleric.
102828	F	NeverM	1967	E: 90,000 - 109,999	10000	HS-grad	0	1	Machine
101232	M	NeverM	1979	J: 190,000 - 249,999	9000	< Bach.	0	1	Other
100696	M	Married	1971	F: 110,000 - 129,999	7000	Profsc	1	3	Prof.
103948	M	NeverM	1966	J: 190,000 - 249,999	9000	< Bach.	0	1	Cleric.
103791	M	Divorc.	1952	B: 30,000 - 49,999	3000	HS-grad	0	2	Prof.
100804	F	Divorc.	1943	A: Below 30,000	1500	< Bach.	0	2	Prof.
101610	M	NeverM	1985	I: 170,000 - 189,999	3000	11th	0	1	Handler

```
SELECT * FROM SH.SALES,SH.PRODUCTS WHERE
 SALES.PROD_ID=PRODUCTS.PROD_ID;
```



PROD_ID	CUST_ID	TIME_ID	CHANNEL_ID	PROMO_ID	QUANTITY_SOLD	AMOUNT_SOLD	PROD_ID	PROD_NAME	PROD_DESC	PROD_SUBCATEGOI
13	524	1998-01-20 00:00:00.0	2	999	1	1205.99	13	5MP Telephoto Digital Camera	5MP Telephoto Digital Camera	Cameras
13	2128	1998-04-05 00:00:00.0	2	999	1	1250.25	13	5MP Telephoto Digital Camera	5MP Telephoto Digital Camera	Cameras
13	3212	1998-04-05 00:00:00.0	2	999	1	1250.25	13	5MP Telephoto Digital Camera	5MP Telephoto Digital Camera	Cameras
13	3375	1998-04-05 00:00:00.0	2	999	1	1250.25	13	5MP Telephoto Digital Camera	5MP Telephoto Digital Camera	Cameras
13	5204	1998-04-05	2	999	1	1250.25	13	5MP Telephoto Digital	5MP Telephoto Digital	Cameras

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To visualize this data, click **Scatter chart** as shown below.

To see the results as shown in the previous screenshot, click **settings**. It will show you all the fields.

Drag PROD_DESC into the xAxis field, and AMOUNT_SOLD into the yAxis field.

This way, you can use the **Run SQL Statement** option to run SQL statements and visualize data.

This completes the task of running a SQL statement.

5. Create a new database connection in Oracle SQL Developer installed on your local system by using the following details, and query the tables.

   a. Enter the connection details as follows:

   Connection Name**: OMLUSER1**
   Username**: OMLUSER1**

   Password**:** The password you specified during user creation

   Connection Type: **Cloud Wallet (or Cloud PDB)**

   Configuration File: Enter the full path to the wallet file you downloaded before or **click**

   the Browse button to point to the location of the file.
   Service: There are three preconfigured database services for each database. Pick **myorcl_low** for this practice.

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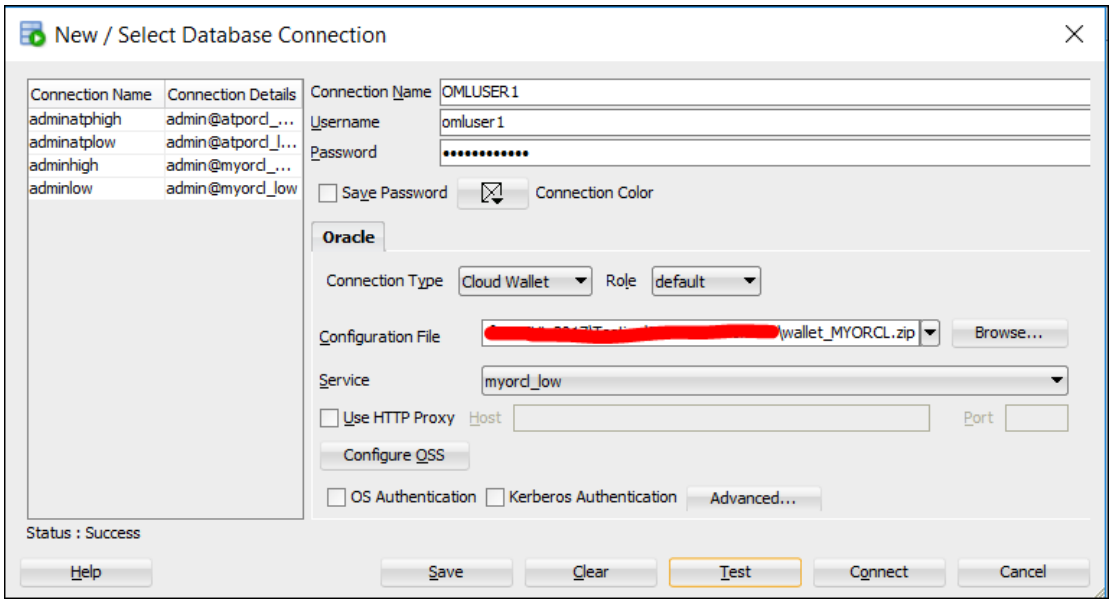
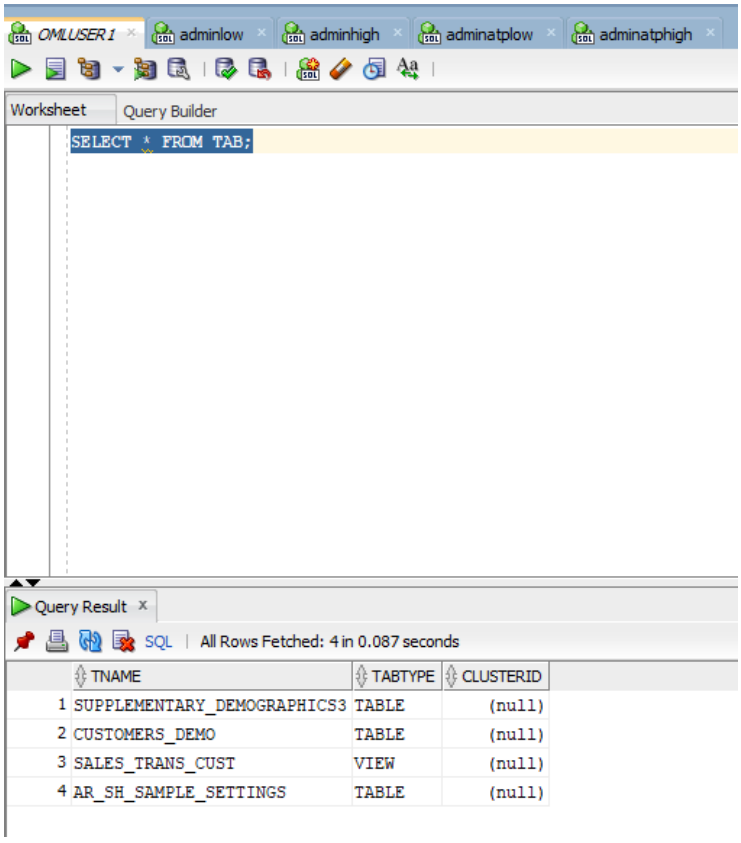
b. Test your connection by clicking the **Test** button. If it succeeds, save your connection information by clicking **Save.** Click **Connect** to connect as user OMLUSER1.



c. Run the following SQL statements to check the tables in OMLUSER1 schema.

```
SELECT * FROM TAB;
```



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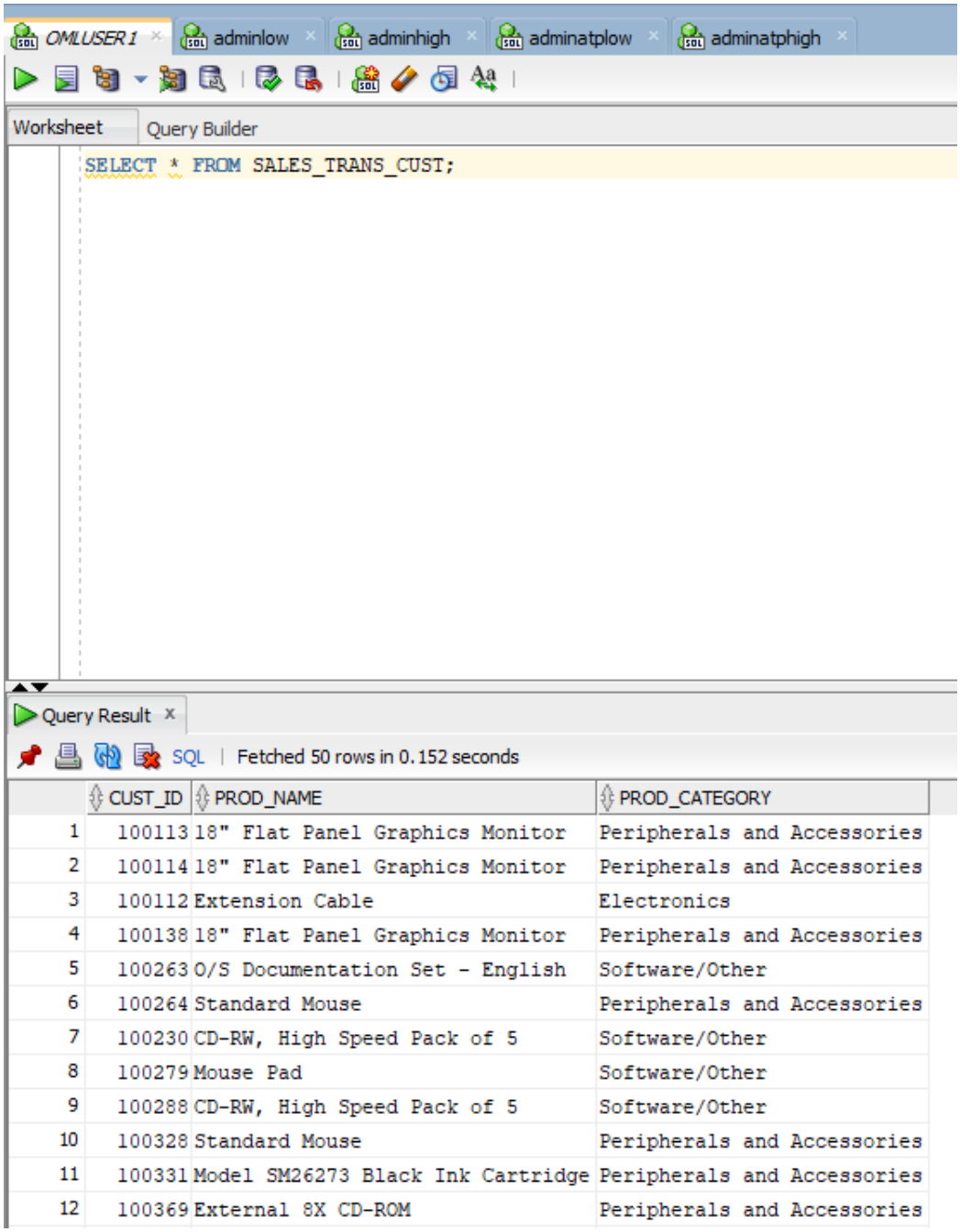
```
SELECT * FROM SALES_TRANS_CUST;
```



	CUST_ID	PROD_NAME	PROD_CATEGORY
1	100113	18" Flat Panel Graphics Monitor	Peripherals and Accessories
2	100114	18" Flat Panel Graphics Monitor	Peripherals and Accessories
3	100112	Extension Cable	Electronics
4	100138	18" Flat Panel Graphics Monitor	Peripherals and Accessories
5	100263	O/S Documentation Set - English	Software/Other
6	100264	Standard Mouse	Peripherals and Accessories
7	100230	CD-RW, High Speed Pack of 5	Software/Other
8	100279	Mouse Pad	Software/Other
9	100288	CD-RW, High Speed Pack of 5	Software/Other
10	100328	Standard Mouse	Peripherals and Accessories
11	100331	Model SM26273 Black Ink Cartridge	Peripherals and Accessories
12	100369	External 8X CD-ROM	Peripherals and Accessories

You have now successfully connected to the OMLUSER1 user and are able to fetch the data from the table.

This completes the practice for running SQL statements in Oracle Machine Learning.

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