UTM UNIVERSITI TEKNOLOGI MALAYSIA RESEARCH UNIVERSITY	UTM DEGREE PROGRAMME UNIVERSITI TEKNOLOGI MALAYSIA

Database

(SECD 2523)

Lab 2:DML 1 -Part 1

Name of Lecturer: Dr Noor Hidayah binti Zakaria

Name: Cheng See Chee

Matric number: A22EC0043

Section: 08

Section 6 Lesson 4 Exercise 1: Data Manipulation Language

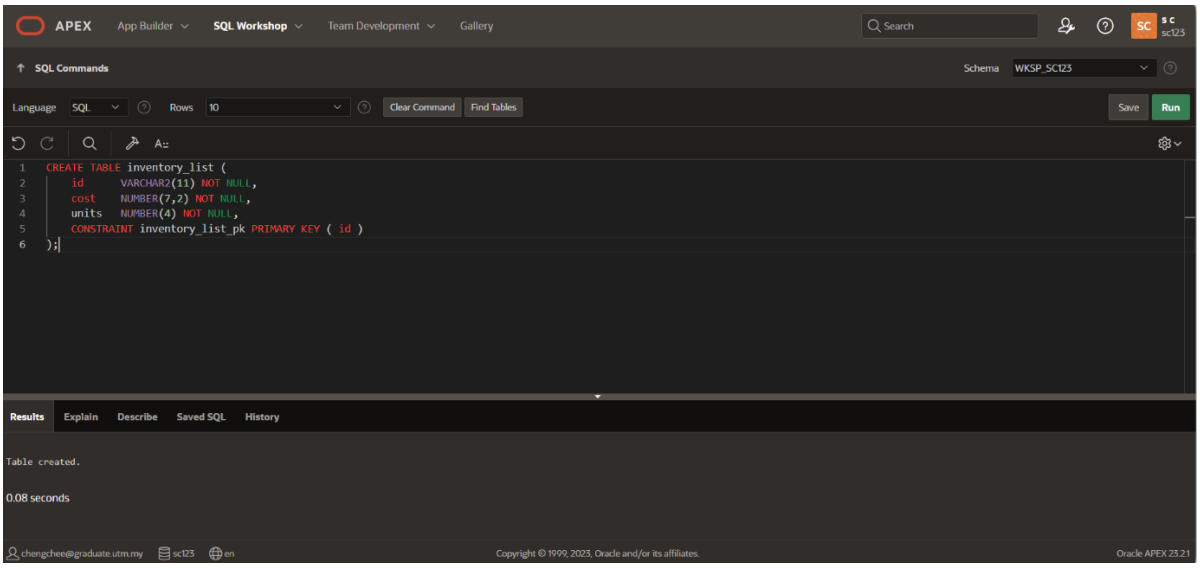
Use DML operations to manage database tables (S6L4 Objective 2)

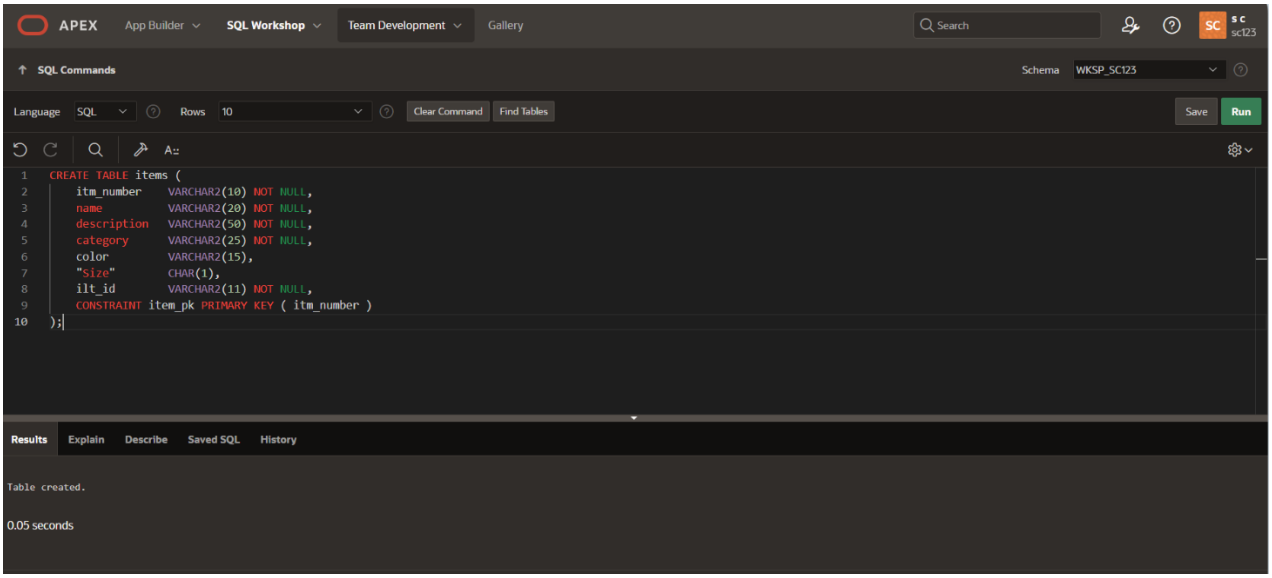
In this exercise you will populate and work with the data that is stored in the database system tables.

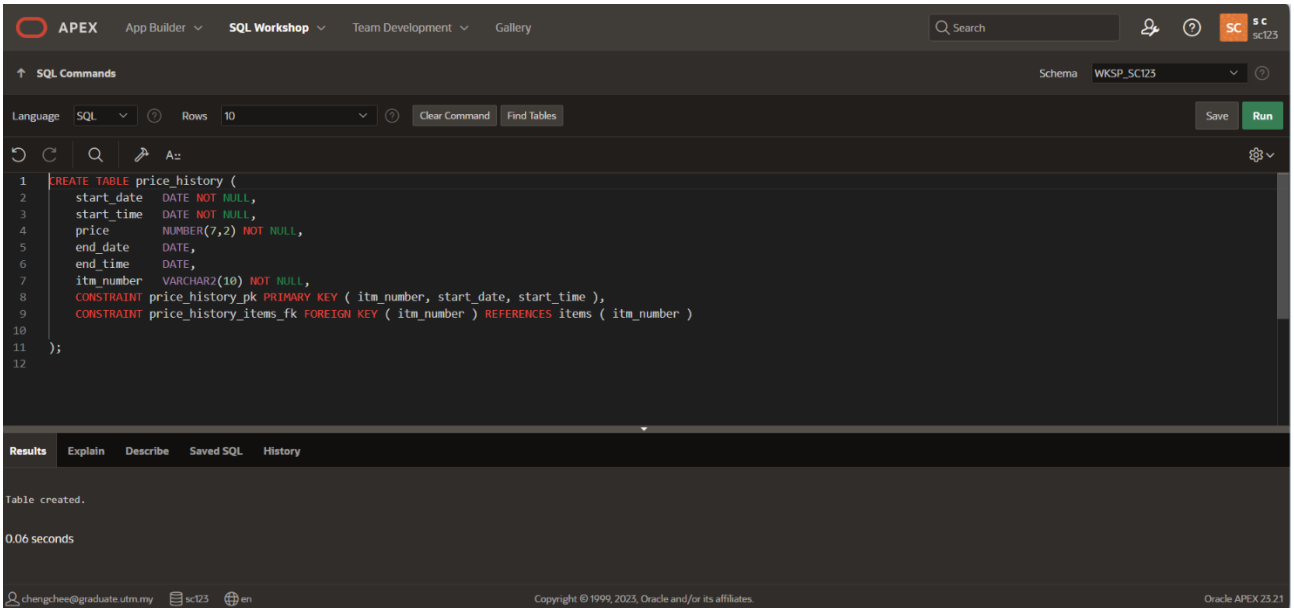
Part 1 : Running a script to populate the tables.

You have to consider the order of the tables when populating them. A table that has a foreign key field cannot be populated before the related table with the primary key.

1. Use the table mapping document and list the order that you would use to populate the tables.
    - *inventory_list*
    - *items*
    - *price_history*
    - *sales_representatives*
    - *sales_rep_addresses*
    - *teams*
    - *customers*
    - *customers_addresses*
    - *Orders*
    - *ordered_items*




APEX
App Builder
SQL Workshop
Team Development
Gallery
Search
SC
sc123
SQL Commands
Schema
WKSP_SC123
Language
SQL
Rows
10
Clear Command
Find Tables
Save
Run
CREATE TABLE items (
itm_number VARCHAR2(10) NOT NULL,
name VARCHAR2(20) NOT NULL,
description VARCHAR2(50) NOT NULL,
category VARCHAR2(25) NOT NULL,
color VARCHAR2(15),
"Size" CHAR(1),
ilt_id VARCHAR2(11) NOT NULL,
CONSTRAINT item_pk PRIMARY KEY (itm_number)
);
Results
Explain
Describe
Saved SQL
History
Table created.
0.05 seconds


APEX
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SQL Workshop
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Search
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SQL Commands
Schema
WKSP_SC123
Language
SQL
Rows
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Clear Command
Find Tables
Save
Run
CREATE TABLE price_history (
start_date DATE NOT NULL,
start_time DATE NOT NULL,
price NUMBER(7,2) NOT NULL,
end_date DATE,
end_time DATE,
itm_number VARCHAR2(10) NOT NULL,
CONSTRAINT price_history_pk PRIMARY KEY (itm_number, start_date, start_time),
CONSTRAINT price_history_items_fk FOREIGN KEY (itm_number) REFERENCES items (itm_number)
);
Results
Explain
Describe
Saved SQL
History
Table created.
0.06 seconds
chengchee@graduate.utm.my
sc123
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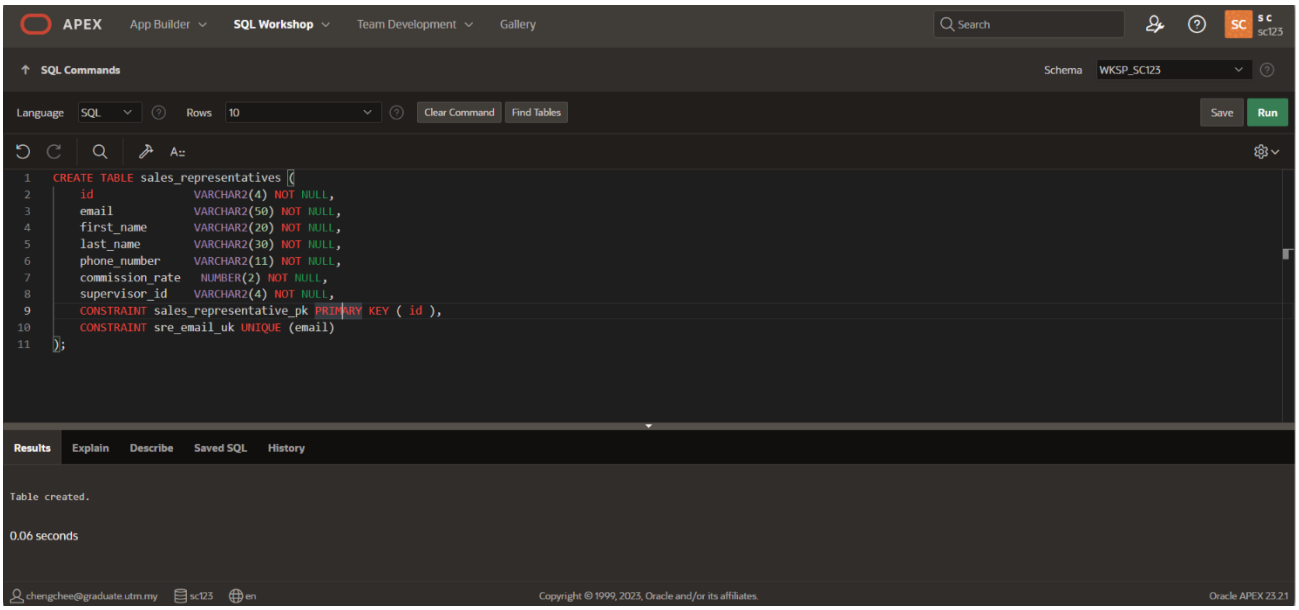
APEX
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Clear Command
Find Tables
Save
Run
CREATE TABLE sales_representatives (
id VARCHAR2(4) NOT NULL,
email VARCHAR2(50) NOT NULL,
first_name VARCHAR2(20) NOT NULL,
last_name VARCHAR2(30) NOT NULL,
phone_number VARCHAR2(11) NOT NULL,
commission_rate NUMBER(2) NOT NULL,
supervisor_id VARCHAR2(4) NOT NULL,
CONSTRAINT sales_representative_pk PRIMARY KEY (id),
CONSTRAINT sre_email_uk UNIQUE (email)
);
Results
Explain
Describe
Saved SQL
History
Table created.
0.06 seconds
chengchee@graduate.utm.my
sc123
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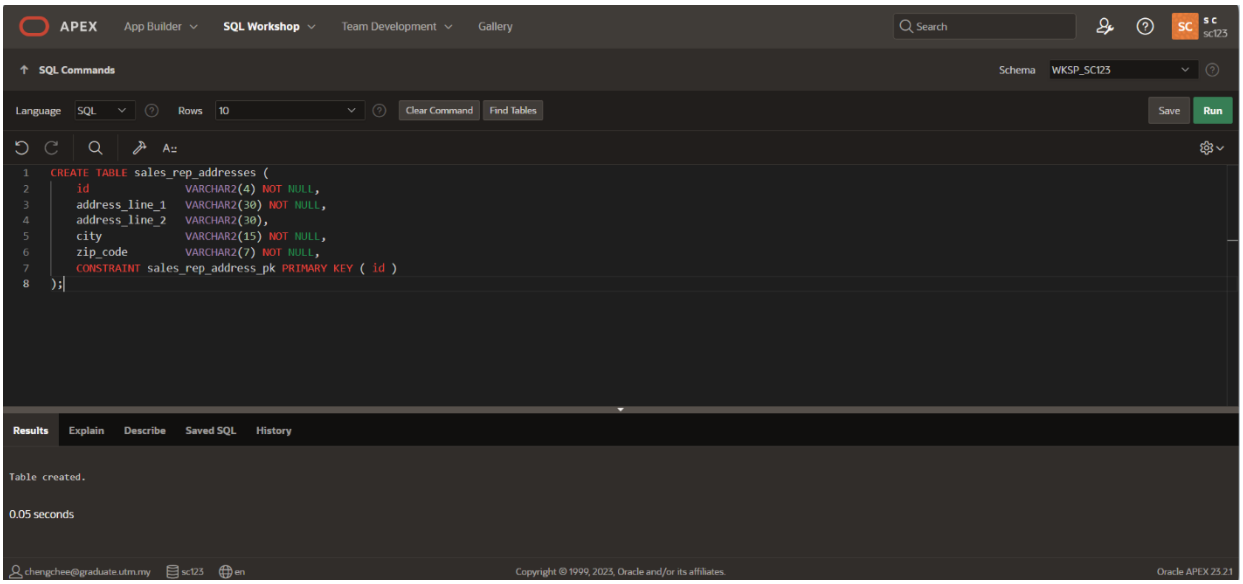
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SQL Commands
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WKSP_SC123
Language
SQL
Rows
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Clear Command
Find Tables
Save
Run
CREATE TABLE sales_rep_addresses (
id VARCHAR2(4) NOT NULL,
address_line_1 VARCHAR2(30) NOT NULL,
address_line_2 VARCHAR2(30),
city VARCHAR2(15) NOT NULL,
zip_code VARCHAR2(7) NOT NULL,
CONSTRAINT sales_rep_address_pk PRIMARY KEY (id)
);
Results
Explain
Describe
Saved SQL
History
Table created.
0.05 seconds
chengchee@graduate.utm.my
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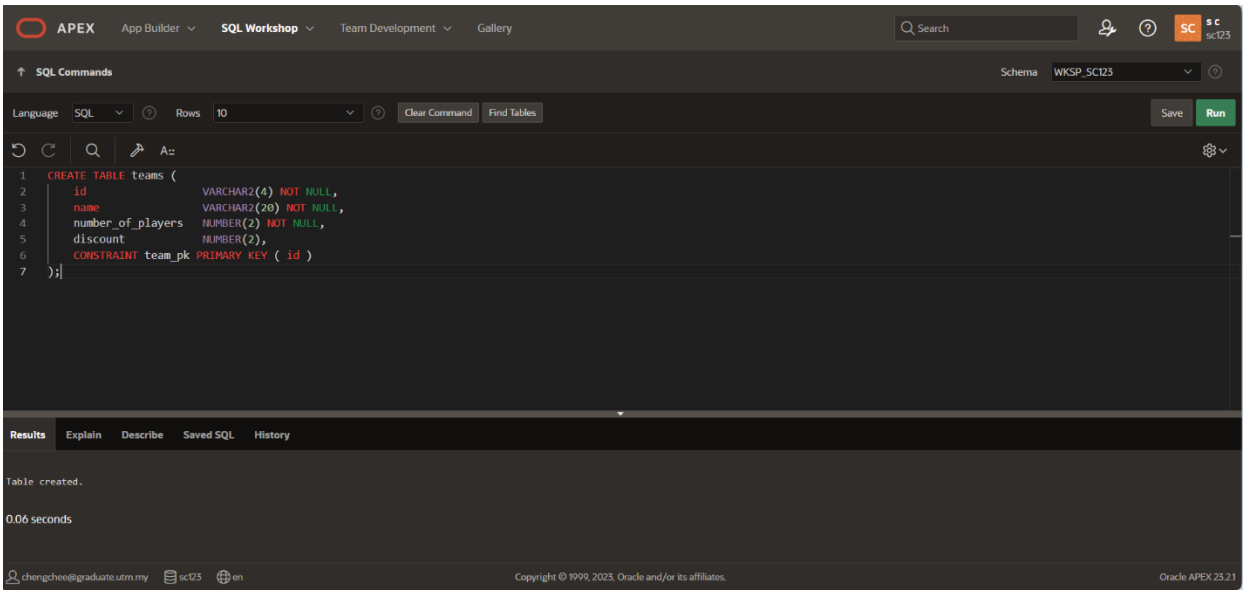
APEX
App Builder
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Search
SQL Commands
Schema
WKSP_SC123
Language
SQL
Rows
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Clear Command
Find Tables
Save
Run
CREATE TABLE teams (
id VARCHAR2(4) NOT NULL,
name VARCHAR2(20) NOT NULL,
number_of_players NUMBER(2) NOT NULL,
discount NUMBER(2),
CONSTRAINT team_pk PRIMARY KEY (id)
);
Results
Explain
Describe
Saved SQL
History
Table created.
0.06 seconds
chengchee@graduate.utm.my
sc123
en
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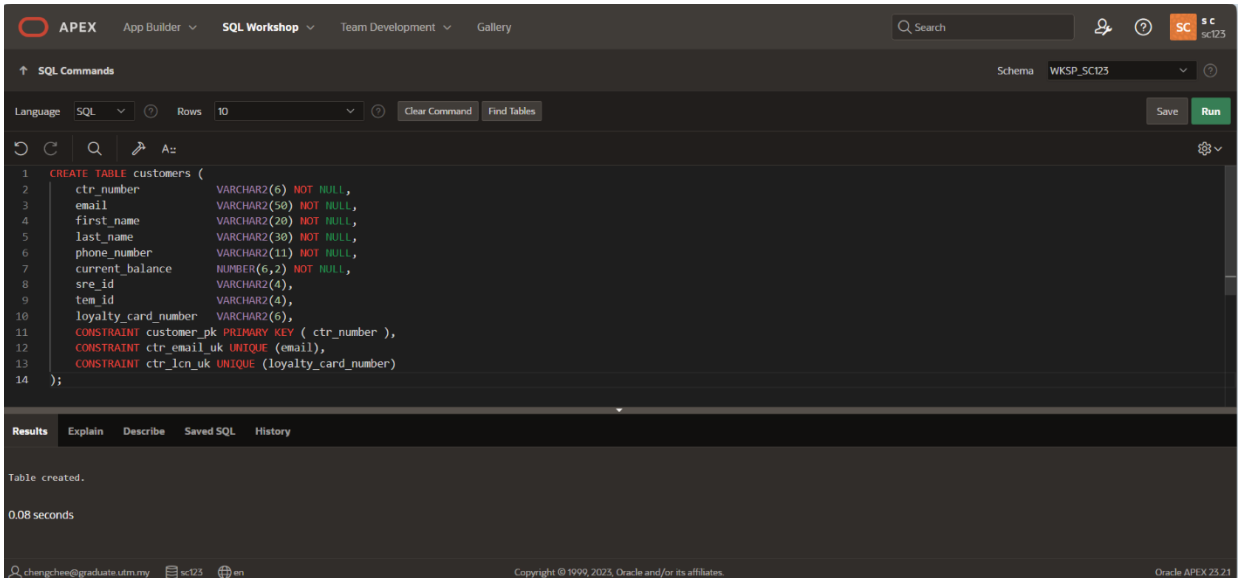
APEX
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SQL Commands
Schema
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Language
SQL
Rows
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Clear Command
Find Tables
Save
Run
CREATE TABLE customers (
ctr_number VARCHAR2(6) NOT NULL,
email VARCHAR2(50) NOT NULL,
first_name VARCHAR2(20) NOT NULL,
last_name VARCHAR2(30) NOT NULL,
phone_number VARCHAR2(11) NOT NULL,
current_balance NUMBER(6,2) NOT NULL,
sre_id VARCHAR2(4),
tem_id VARCHAR2(4),
loyalty_card_number VARCHAR2(6),
CONSTRAINT customer_pk PRIMARY KEY (ctr_number),
CONSTRAINT ctr_email_uk UNIQUE (email),
CONSTRAINT ctr_lcn_uk UNIQUE (loyalty_card_number)
);
Results
Explain
Describe
Saved SQL
History
Table created.
0.08 seconds
chengchee@graduate.utm.my
sc123
en
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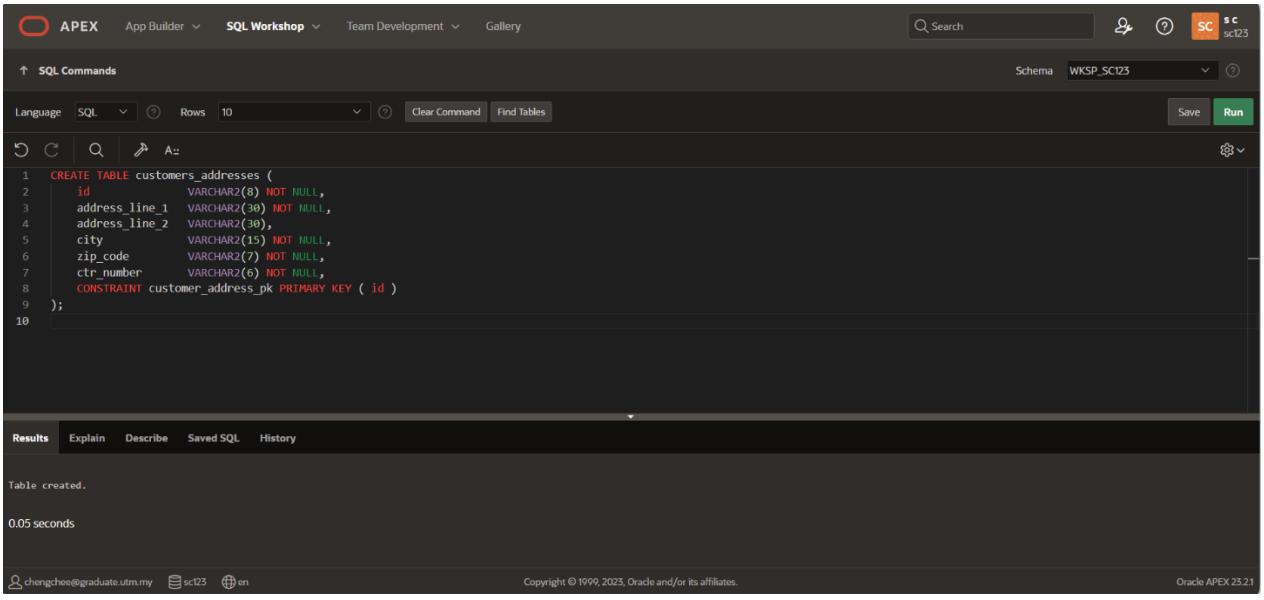
Oracle APEX 23.21


APEX
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SQL Workshop
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Search
SQL Commands
Schema
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Language
SQL
Rows
10
Clear Command
Find Tables
Save
Run
CREATE TABLE customers_addresses (
id VARCHAR2(8) NOT NULL,
address_line_1 VARCHAR2(30) NOT NULL,
address_line_2 VARCHAR2(30),
city VARCHAR2(15) NOT NULL,
zip_code VARCHAR2(7) NOT NULL,
ctr_number VARCHAR2(6) NOT NULL,
CONSTRAINT customer_address_pk PRIMARY KEY (id)
);
Results
Explain
Describe
Saved SQL
History
Table created.
0.05 seconds
chengchee@graduate.utm.my
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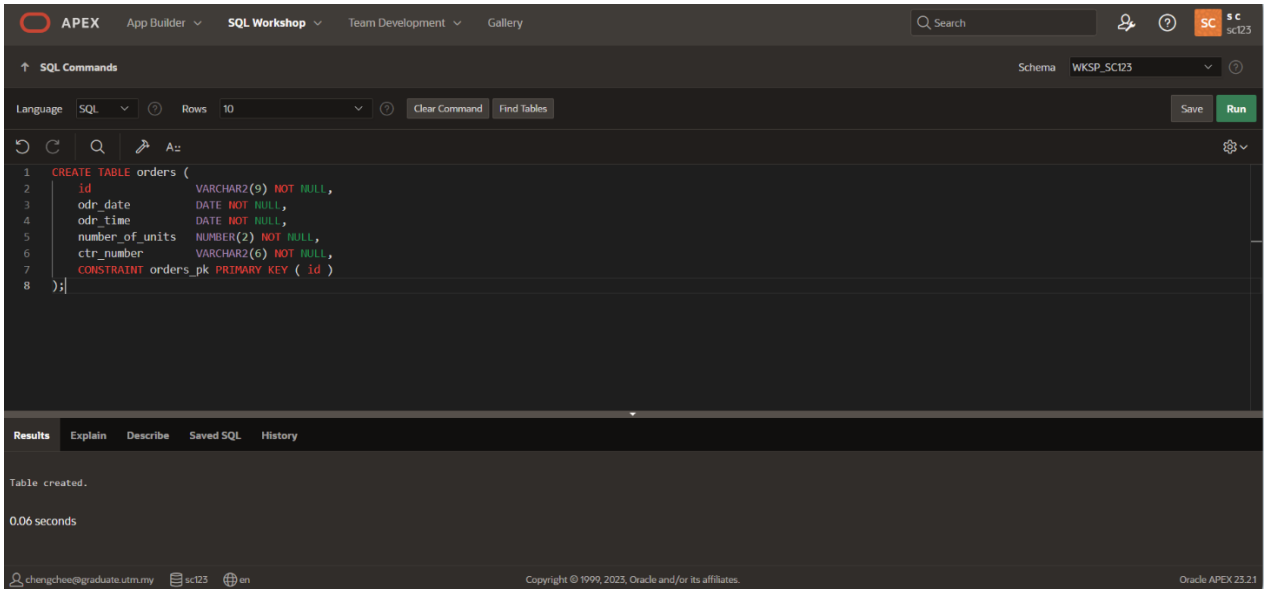
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SQL Commands
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SQL
Rows
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Clear Command
Find Tables
Save
Run
CREATE TABLE orders (
id VARCHAR2(9) NOT NULL,
odr_date DATE NOT NULL,
odr_time DATE NOT NULL,
number_of_units NUMBER(2) NOT NULL,
ctr_number VARCHAR2(6) NOT NULL,
CONSTRAINT orders_pk PRIMARY KEY (id)
);
Results
Explain
Describe
Saved SQL
History
Table created.
0.06 seconds
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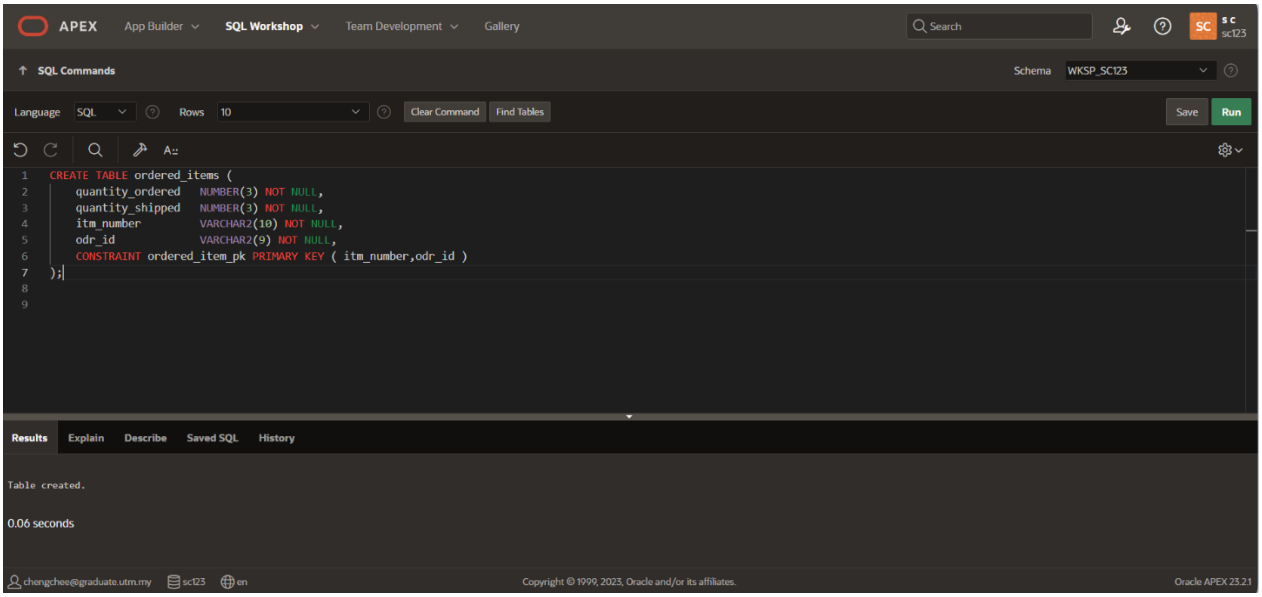
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Schema
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SQL
Rows
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Clear Command
Find Tables
Save
Run
CREATE TABLE ordered_items (
quantity_ordered NUMBER(3) NOT NULL,
quantity_shipped NUMBER(3) NOT NULL,
itm_number VARCHAR2(10) NOT NULL,
odr_id VARCHAR2(9) NOT NULL,
CONSTRAINT ordered_item_pk PRIMARY KEY (itm_number,odr_id)
);
Results
Explain
Describe
Saved SQL
History
Table created.
0.06 seconds
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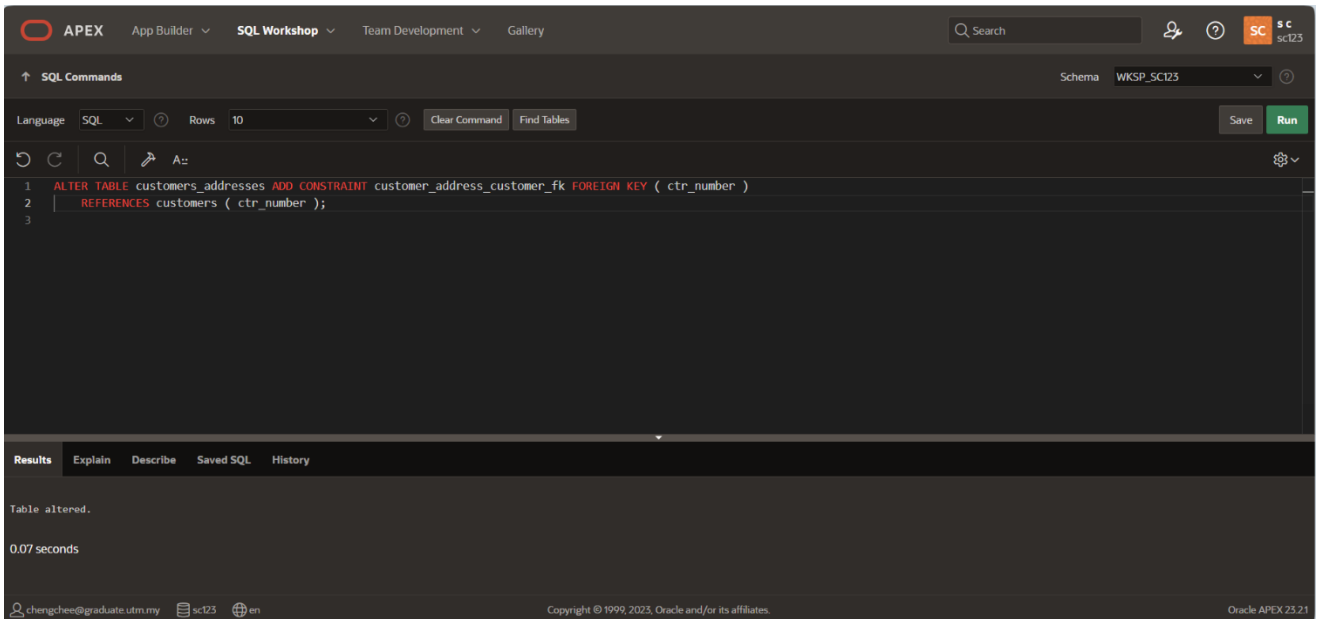
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Rows
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Clear Command
Find Tables
Save
Run
1 ALTER TABLE customers_addresses ADD CONSTRAINT customer_address_customer_fk FOREIGN KEY (ctr_number)
2 REFERENCES customers (ctr_number);
3
Results
Explain
Describe
Saved SQL
History
Table altered.
0.07 seconds
chengchee@graduate.utm.my
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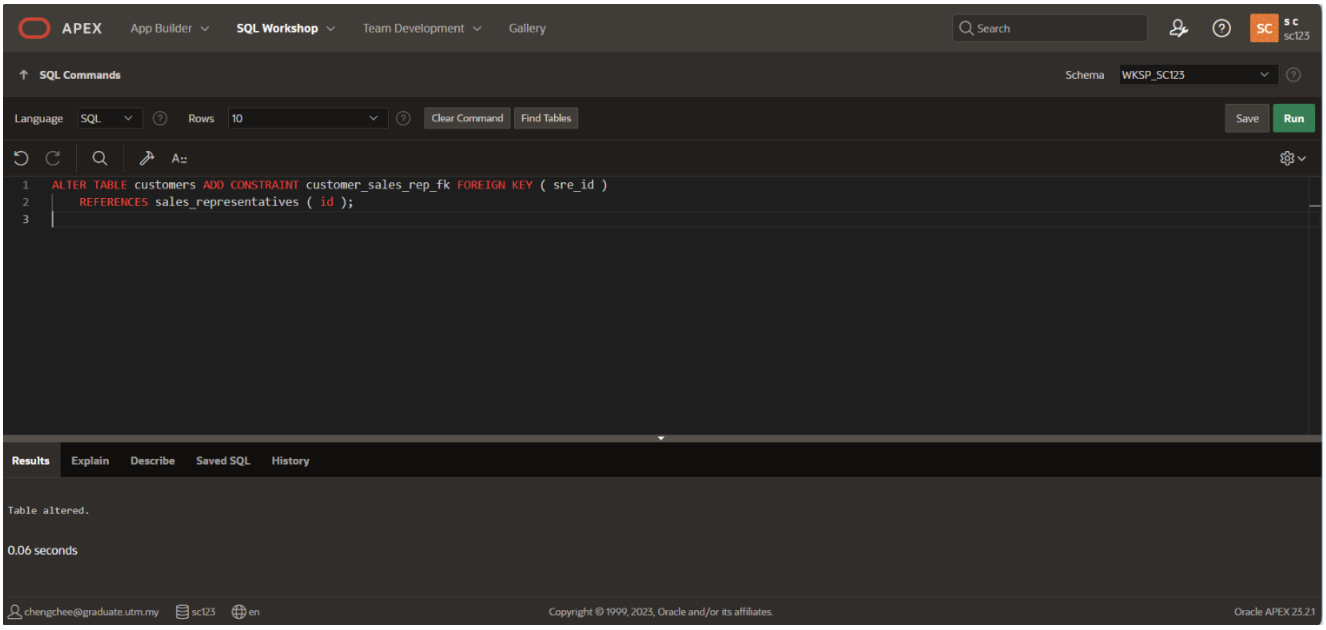
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SQL Commands
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Language
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Rows
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Clear Command
Find Tables
Save
Run
1 ALTER TABLE customers ADD CONSTRAINT customer_sales_rep_fk FOREIGN KEY (sre_id)
2 REFERENCES sales_representatives (id);
3
Results
Explain
Describe
Saved SQL
History
Table altered.
0.06 seconds
chengchee@graduate.utm.my
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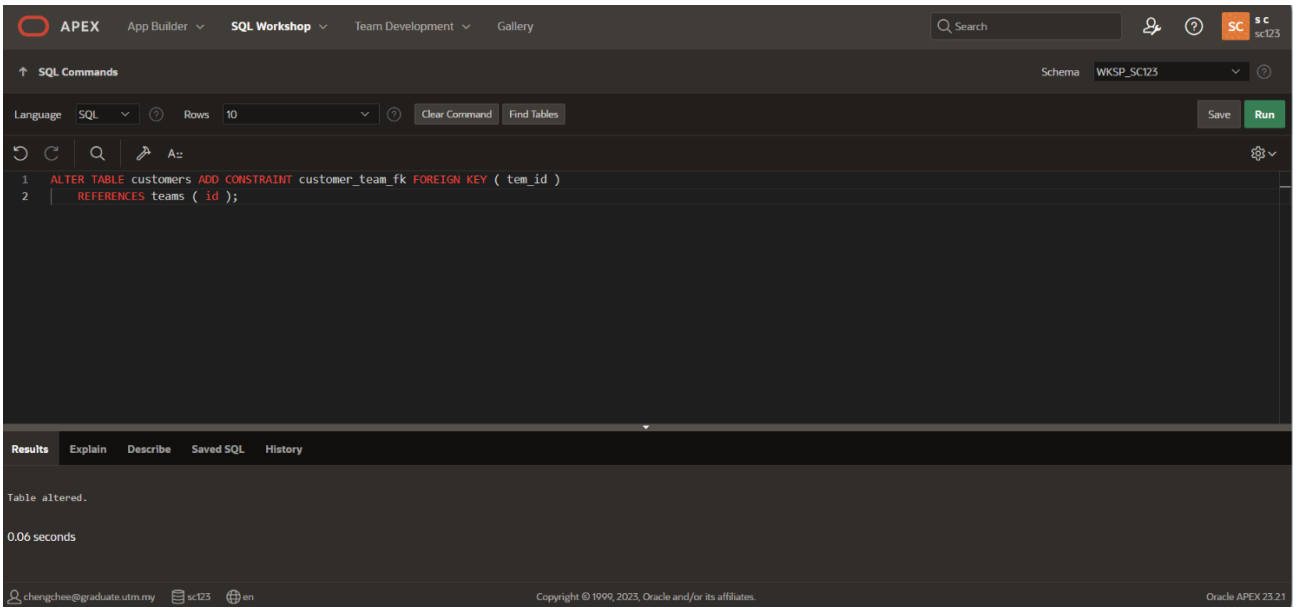
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SQL Commands
Schema
WKSP_SC123
Language
SQL
Rows
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Clear Command
Find Tables
Save
Run
1 ALTER TABLE customers ADD CONSTRAINT customer_team_fk FOREIGN KEY (tem_id)
2 REFERENCES teams (id);
Results
Explain
Describe
Saved SQL
History
Table altered.
0.06 seconds
chengchee@graduate.utm.my
sc123
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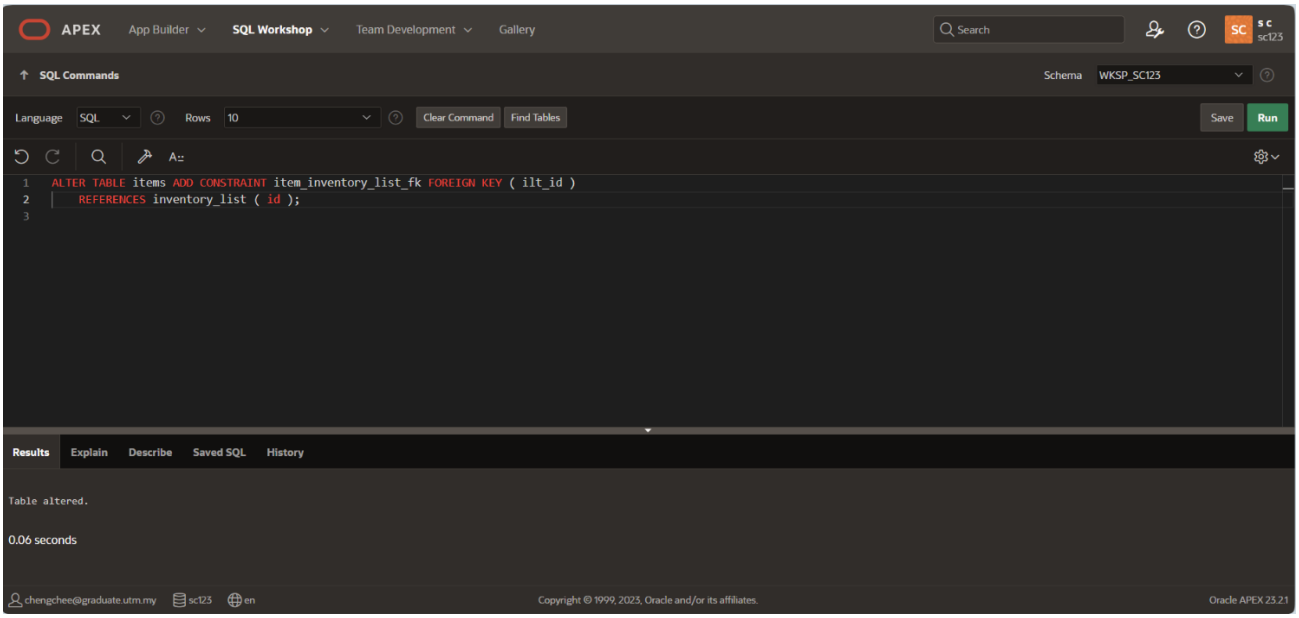
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SQL Commands
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Language
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Rows
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Clear Command
Find Tables
Save
Run
1 ALTER TABLE items ADD CONSTRAINT item_inventory_list_fk FOREIGN KEY (ilt_id)
2 REFERENCES inventory_list (id);
3
Results
Explain
Describe
Saved SQL
History
Table altered.
0.06 seconds
chengchee@graduate.utm.my
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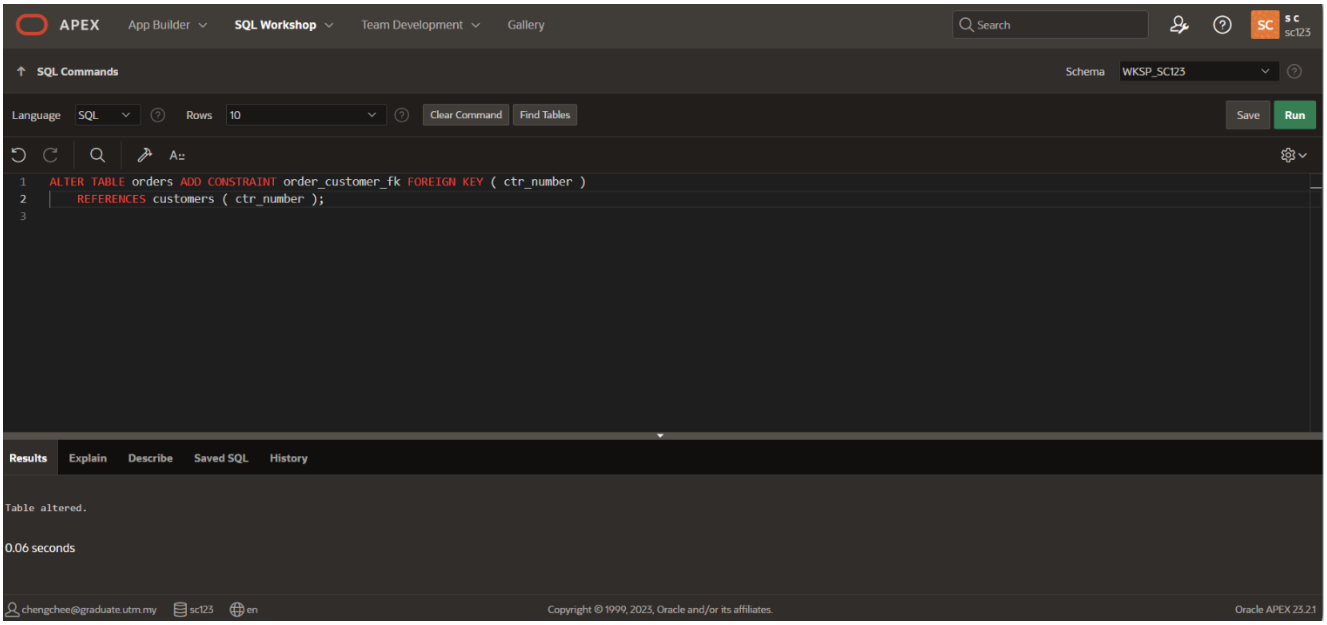
APEX
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SQL Commands
Schema
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Language
SQL
Rows
10
Clear Command
Find Tables
Save
Run
1 ALTER TABLE orders ADD CONSTRAINT order_customer_fk FOREIGN KEY (ctr_number)
2 REFERENCES customers (ctr_number);
3
Results
Explain
Describe
Saved SQL
History
Table altered.
0.06 seconds
chengchee@graduate.utm.my
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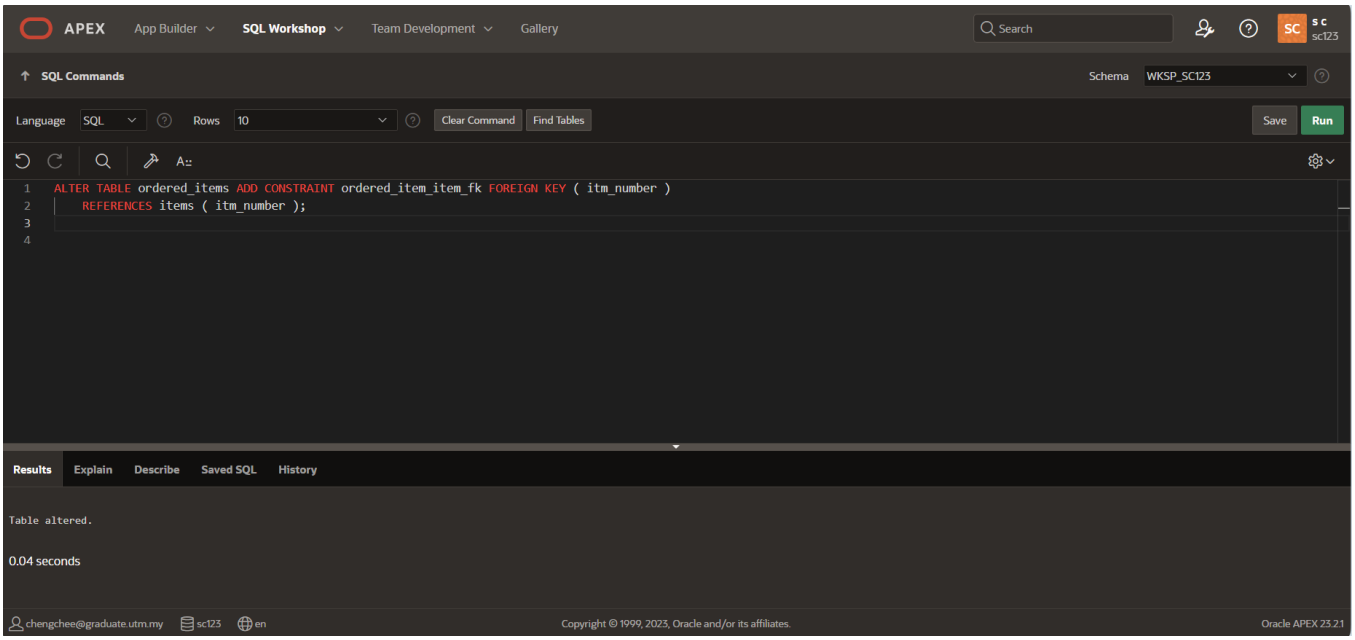
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SQL Commands
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Language
SQL
Rows
10
Clear Command
Find Tables
Save
Run
1 ALTER TABLE ordered_items ADD CONSTRAINT ordered_item_item_fk FOREIGN KEY (itm_number)
2 REFERENCES items (itm_number);
3
4
Results
Explain
Describe
Saved SQL
History
Table altered.
0.04 seconds
chengchee@graduate.utm.my
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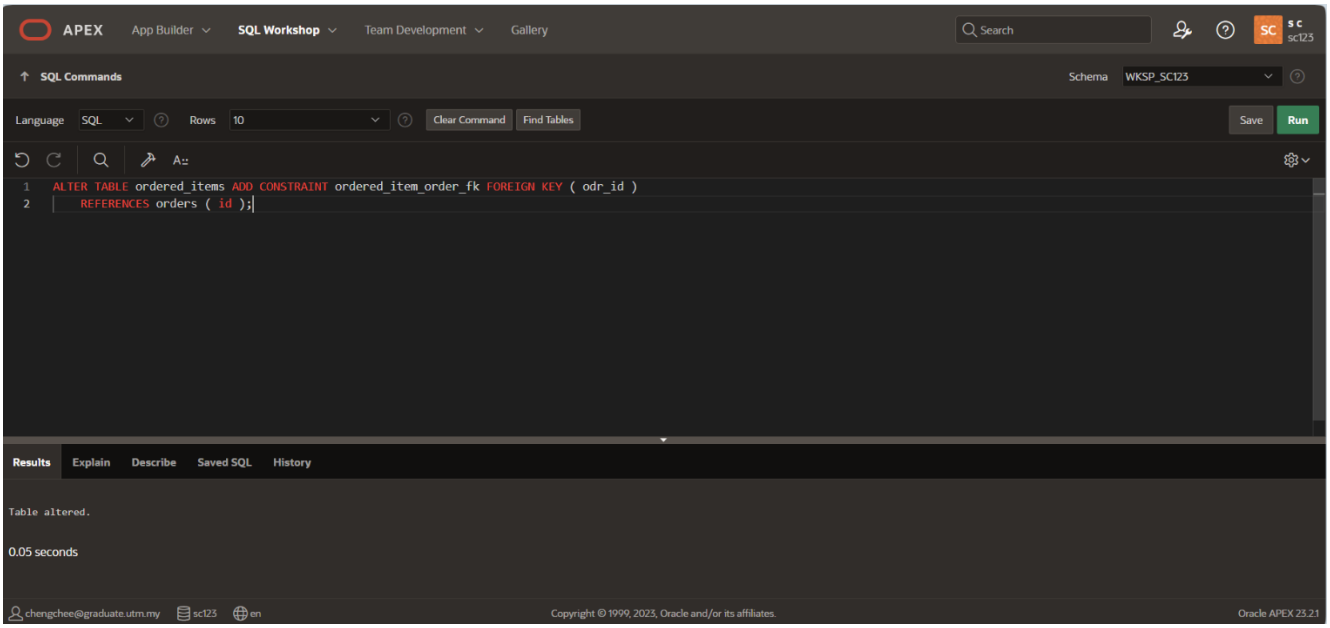
APEX
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SQL Commands
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Language
SQL
Rows
10
Clear Command
Find Tables
Save
Run
1 ALTER TABLE ordered_items ADD CONSTRAINT ordered_item_order_fk FOREIGN KEY (odr_id)
2 REFERENCES orders (id);
Results
Explain
Describe
Saved SQL
History
Table altered.
0.05 seconds
chengchee@graduate.utm.my
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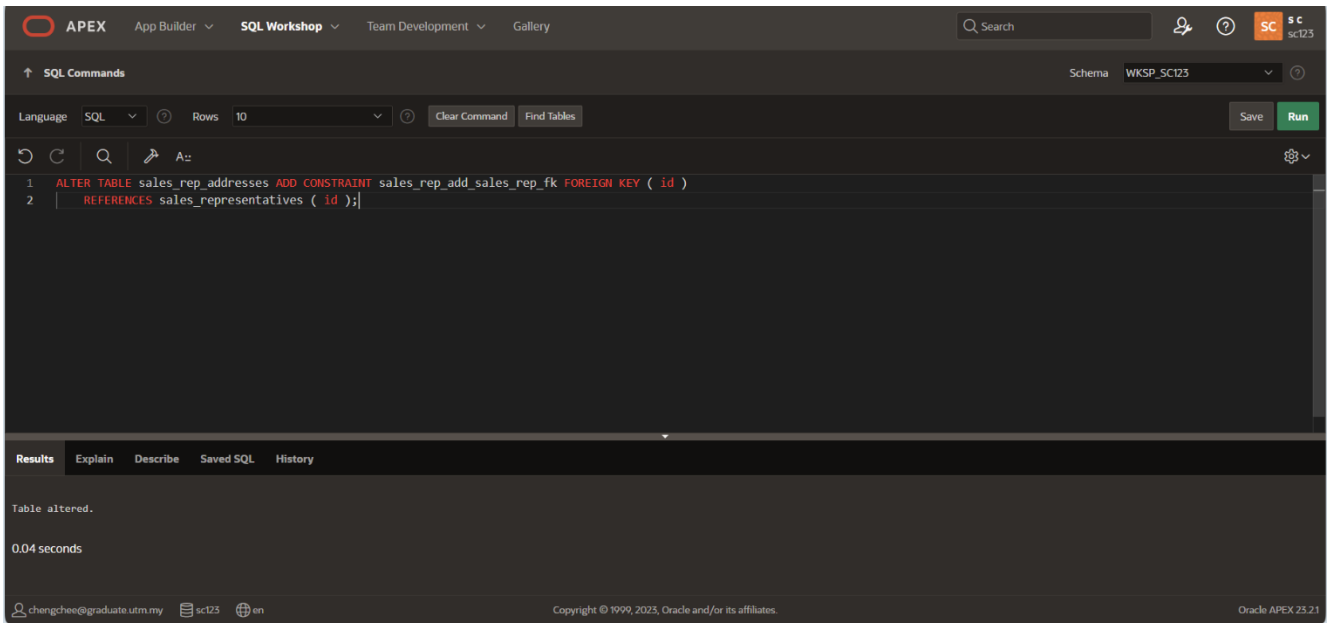
Oracle APEX 23.2.1


APEX
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Language
SQL
Rows
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Clear Command
Find Tables
Save
Run
1 ALTER TABLE sales_rep_addresses ADD CONSTRAINT sales_rep_add_sales_rep_fk FOREIGN KEY (id)
2 REFERENCES sales_representatives (id);
Results
Explain
Describe
Saved SQL
History
Table altered.
0.04 seconds
chengchee@graduate.utm.my
sc123
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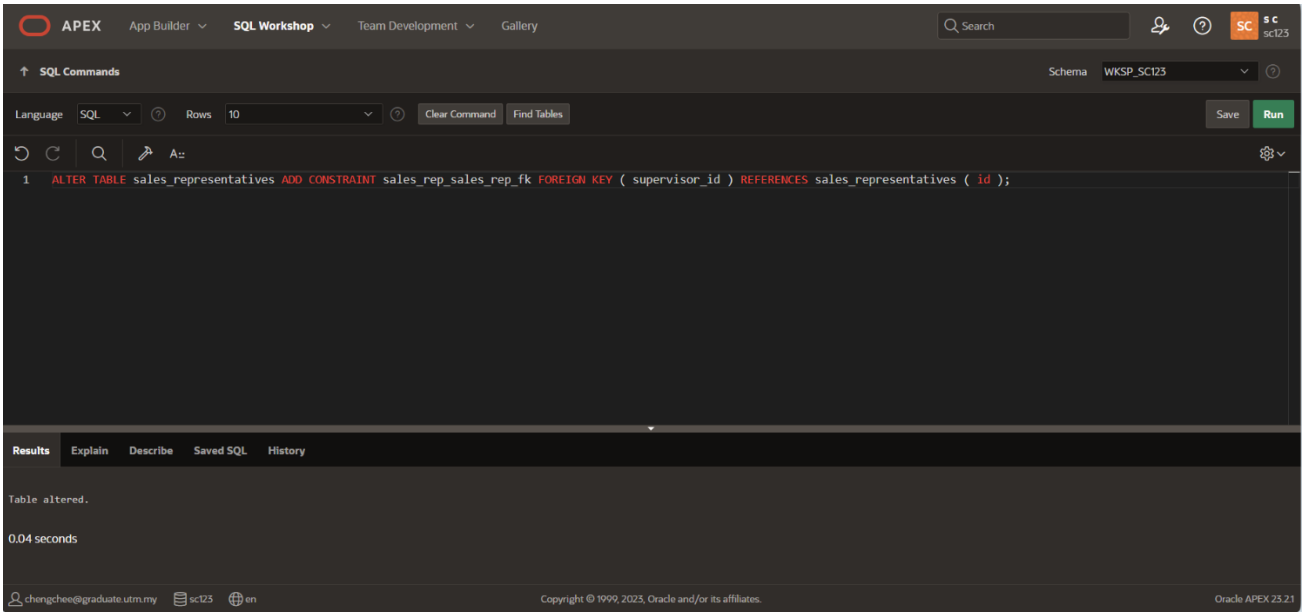
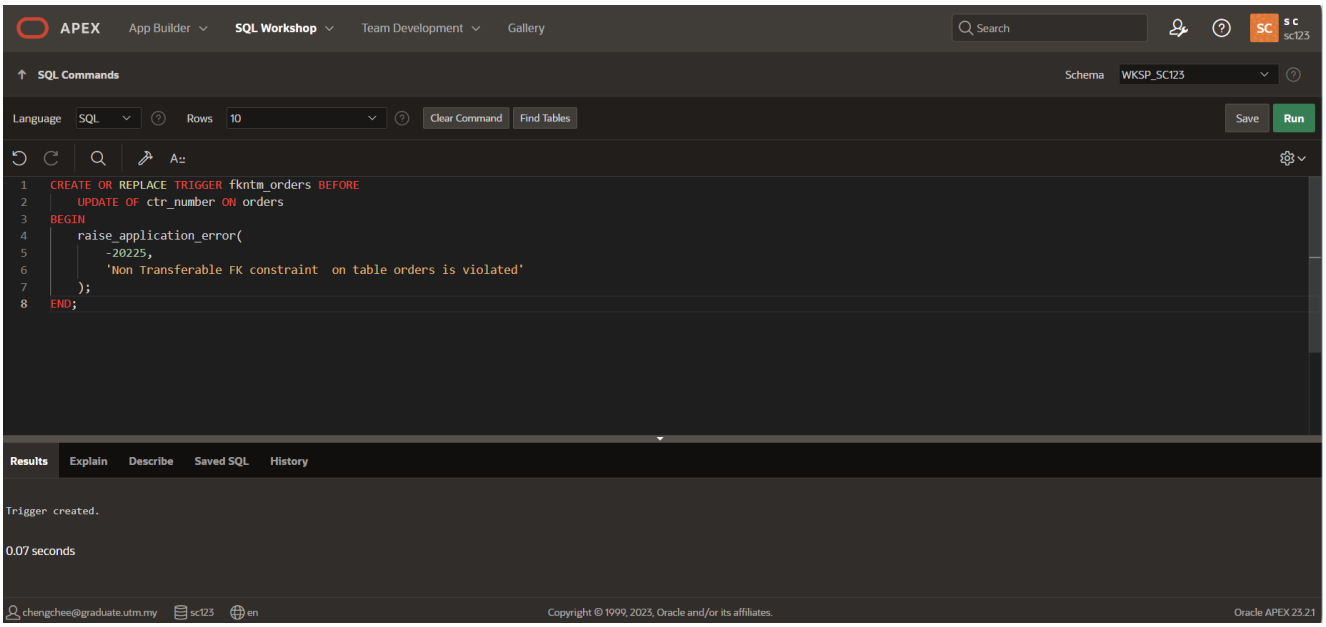
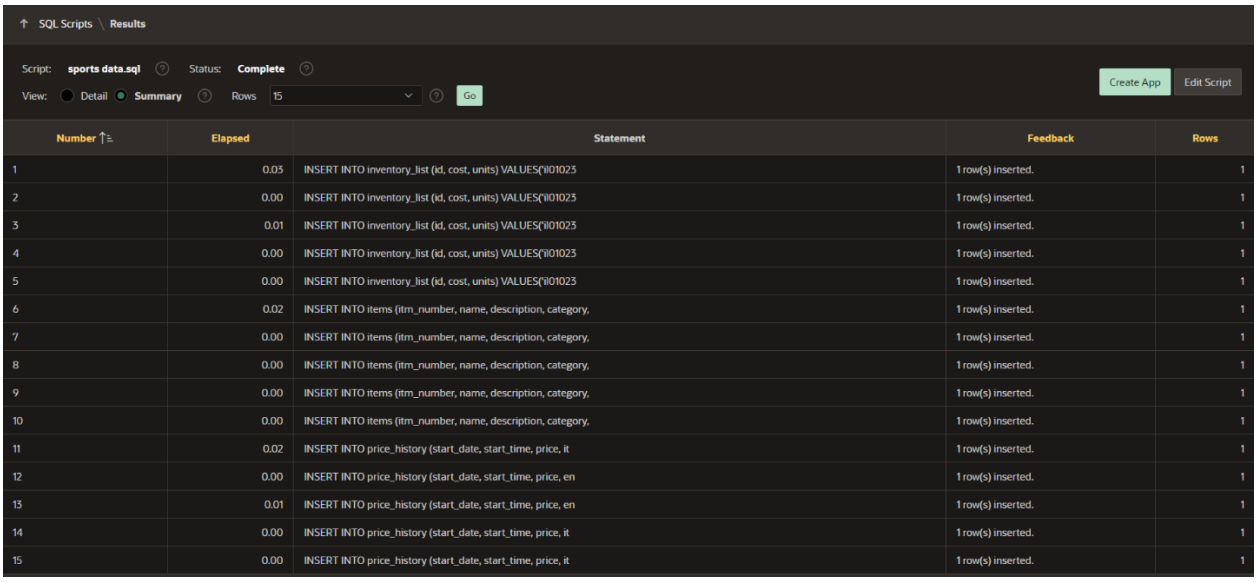




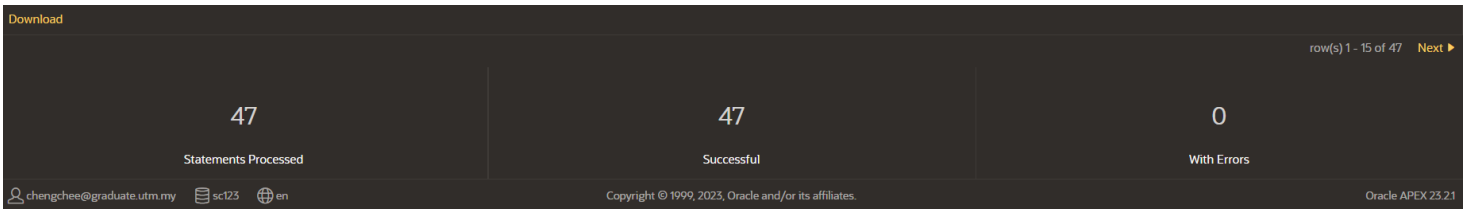
2. Open the “sports data.sql” and look at the order the data is being added there, does your list match? This file can be found in the Section 6 Lesson 4 interaction (sports data.zip) and must first be extracted.

   Yes, my list is matched.

3. Run the “sports data.sql” script in APEX to populate your tables
4. Check that no errors occurred when you ran the script.



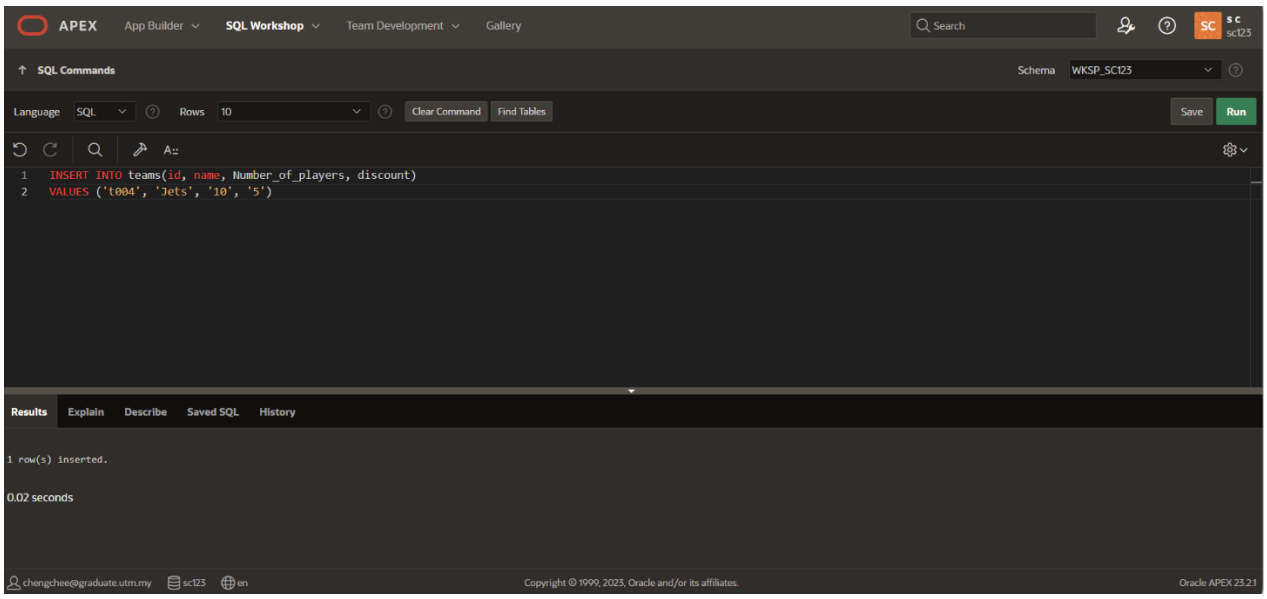
Number	Elapsed	Statement	Feedback	Rows
1	0.03	INSERT INTO inventory_list (id, cost, units) VALUES('il01023	1 row(s) inserted.	1
2	0.00	INSERT INTO inventory_list (id, cost, units) VALUES('il01023	1 row(s) inserted.	1
3	0.01	INSERT INTO inventory_list (id, cost, units) VALUES('il01023	1 row(s) inserted.	1
4	0.00	INSERT INTO inventory_list (id, cost, units) VALUES('il01023	1 row(s) inserted.	1
5	0.00	INSERT INTO inventory_list (id, cost, units) VALUES('il01023	1 row(s) inserted.	1
6	0.02	INSERT INTO items (itm_number, name, description, category,	1 row(s) inserted.	1
7	0.00	INSERT INTO items (itm_number, name, description, category,	1 row(s) inserted.	1
8	0.00	INSERT INTO items (itm_number, name, description, category,	1 row(s) inserted.	1
9	0.00	INSERT INTO items (itm_number, name, description, category,	1 row(s) inserted.	1
10	0.00	INSERT INTO items (itm_number, name, description, category,	1 row(s) inserted.	1
11	0.02	INSERT INTO price_history (start_date, start_time, price, it	1 row(s) inserted.	1
12	0.00	INSERT INTO price_history (start_date, start_time, price, en	1 row(s) inserted.	1
13	0.01	INSERT INTO price_history (start_date, start_time, price, en	1 row(s) inserted.	1
14	0.00	INSERT INTO price_history (start_date, start_time, price, it	1 row(s) inserted.	1
15	0.00	INSERT INTO price_history (start_date, start_time, price, it	1 row(s) inserted.	1

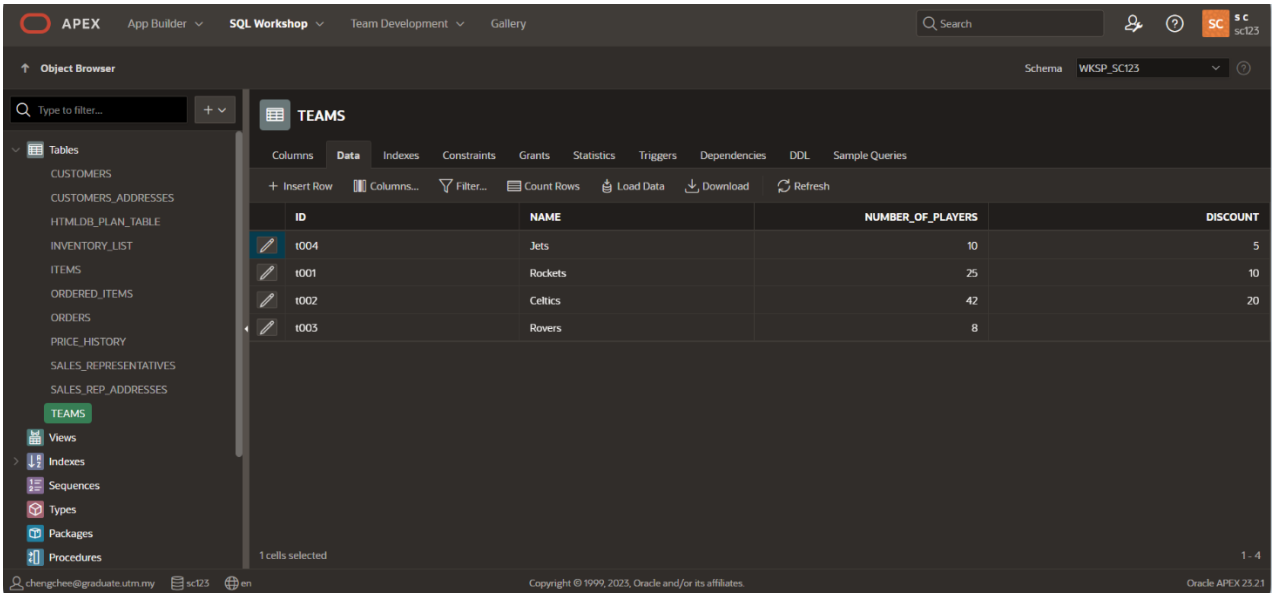


Part 2- Inserting rows to the system

1. Add a new team to the system

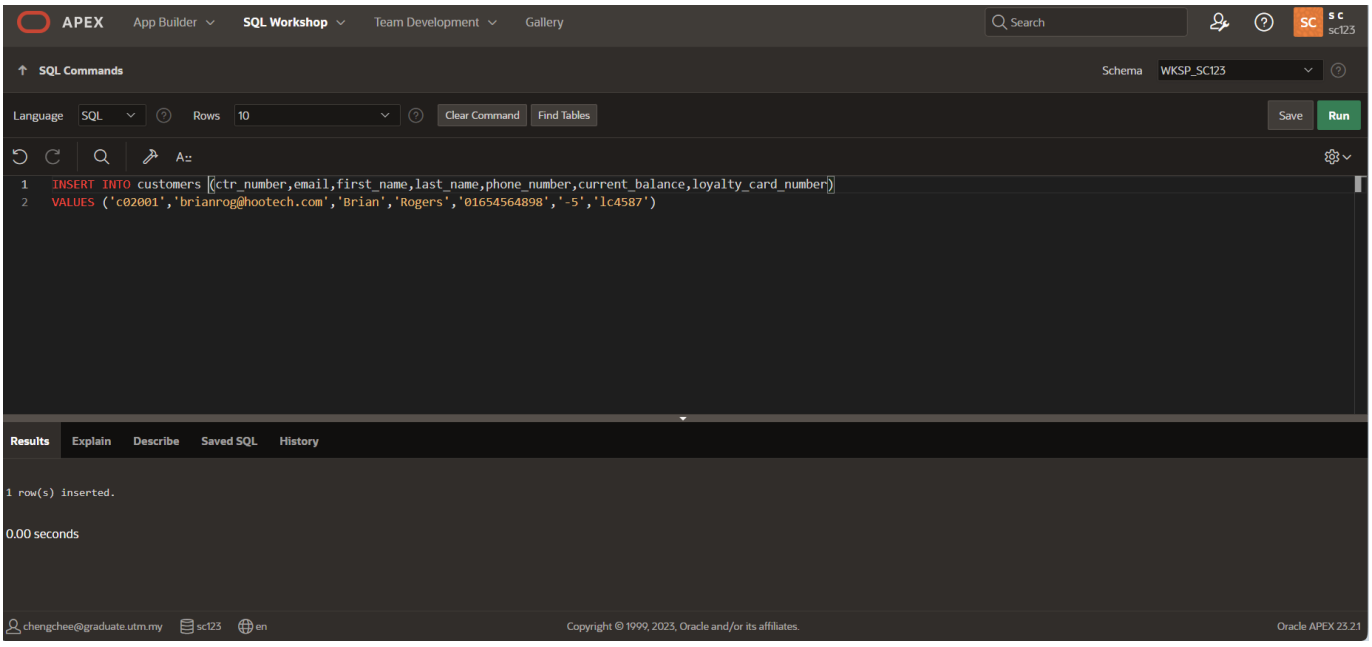
id	name	Number_of_players	discount
t004	Jets	10	5

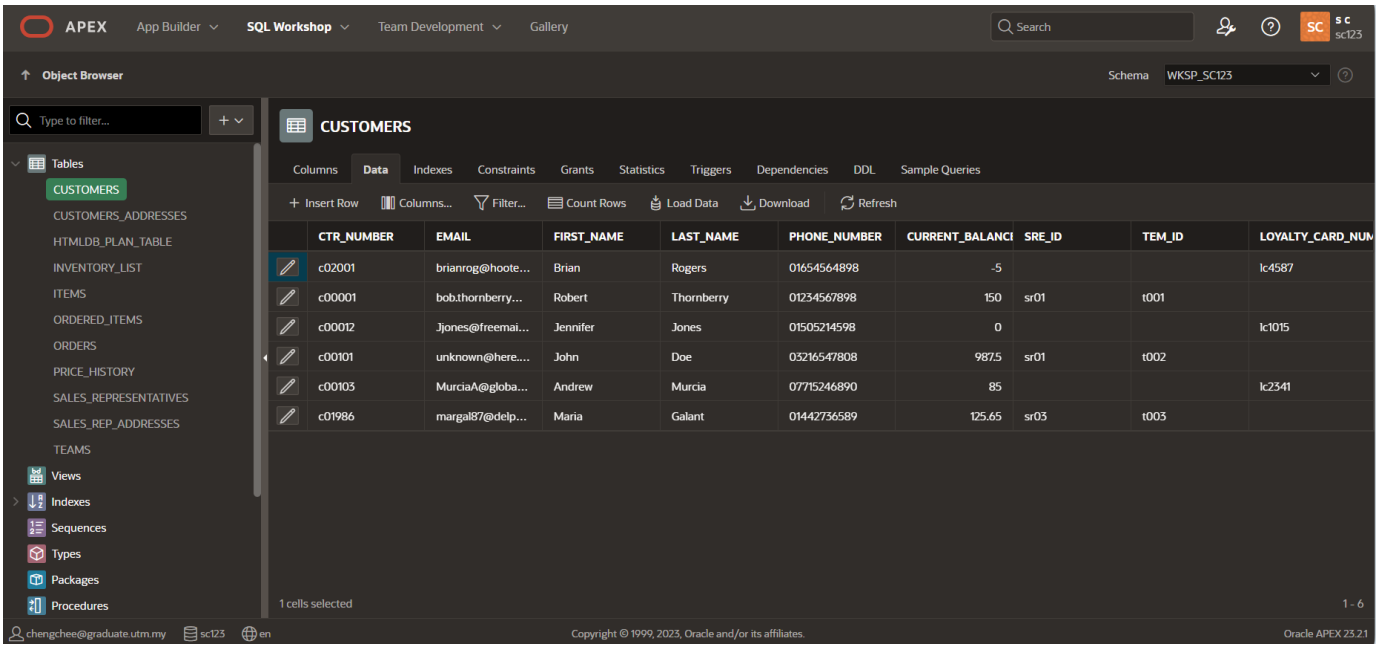




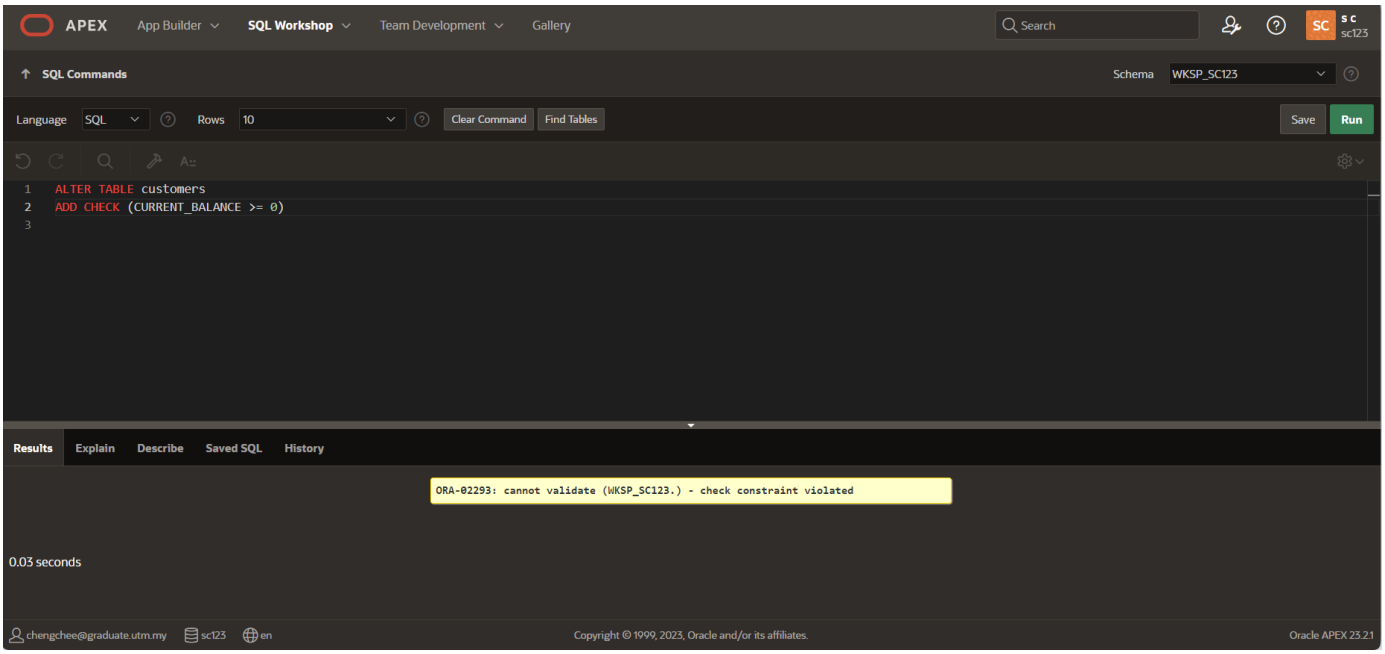
2. Add a new Customer with the following details to the system

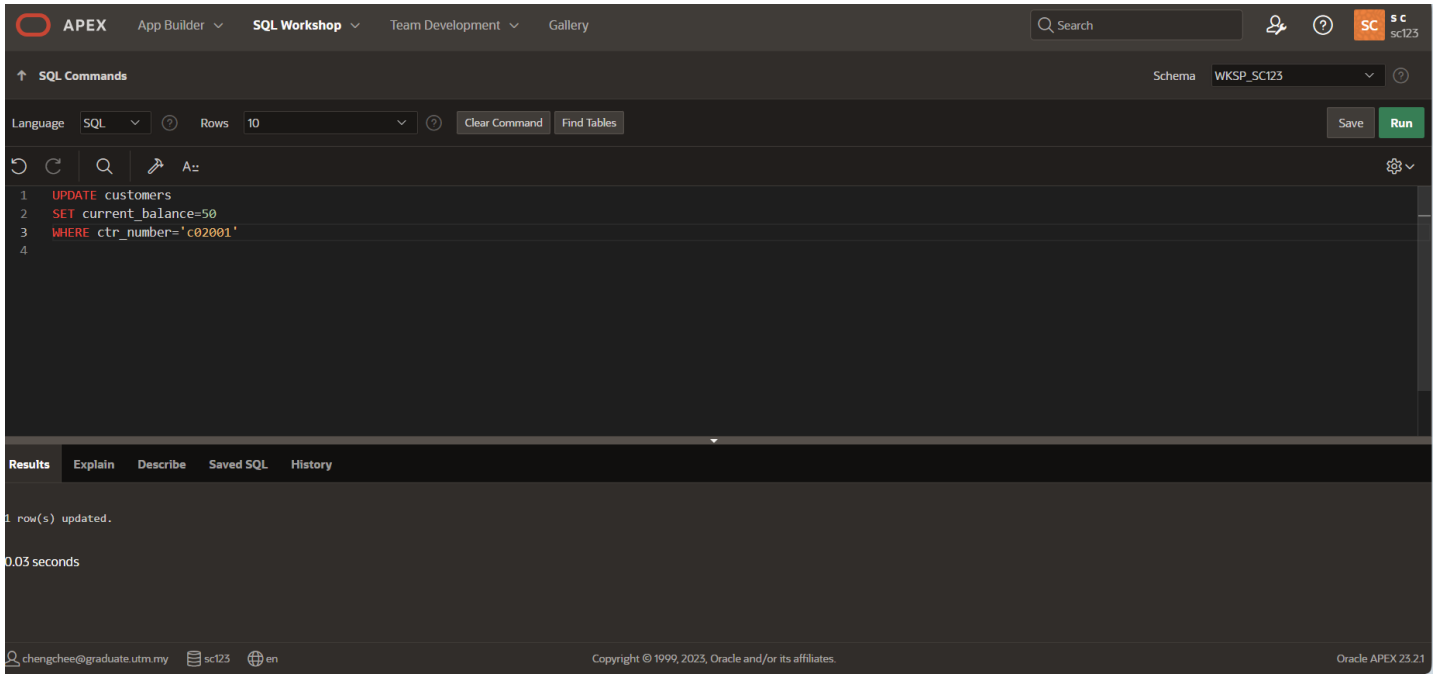
ctr number	email	First name	Last name	Phone number	Current balance	Loyalty card number	tem id	sre id
c02001	brianrog@hootech.com	Brian	Rogers	01654564898	-5	lc4587		

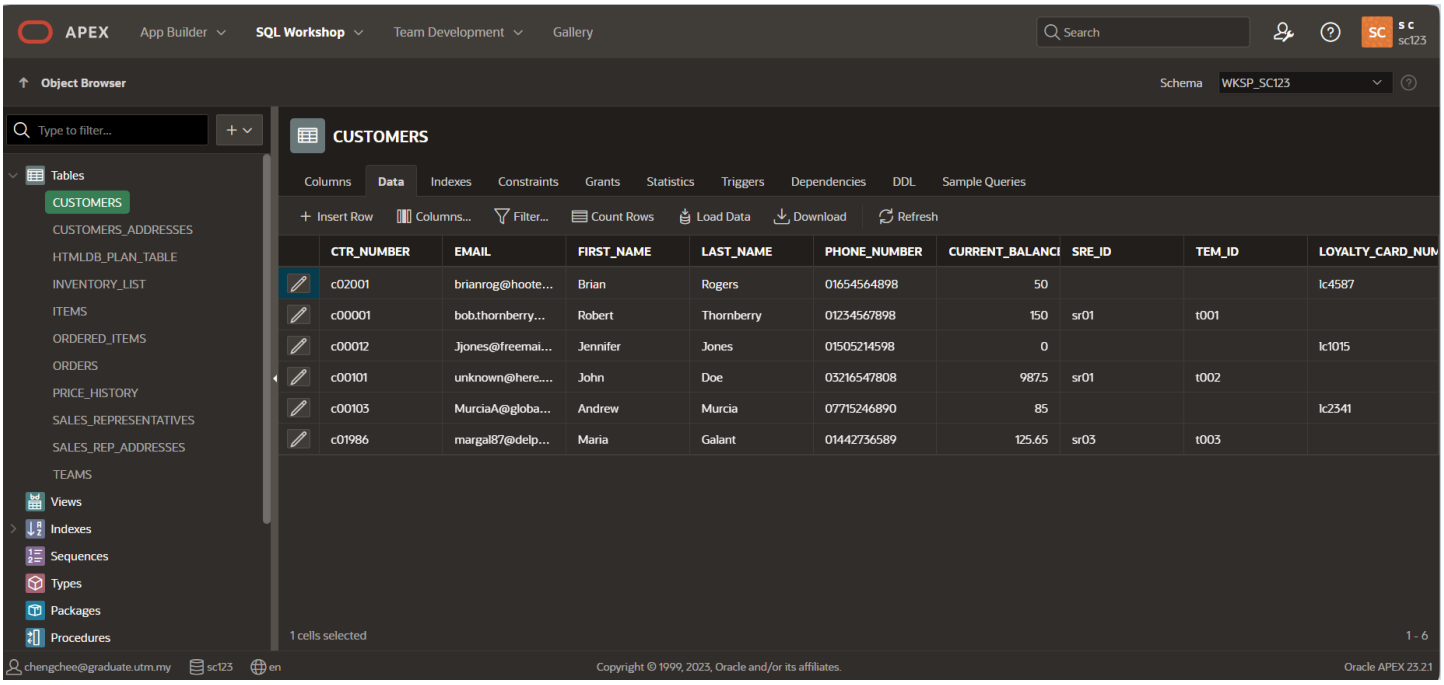




3. This information violates the check constraint that the current balance must not be less than zero. Change the current balance to 50 and rerun the query.







UTM UNIVERSITI TEKNOLOGI MALAYSIA RESEARCH UNIVERSITY	UTM DEGREE PROGRAMME UNIVERSITI TEKNOLOGI MALAYSIA

Database

(SECD 2523)

Lab 2:DML 1 -Part 2

Name of Lecturer: Dr Noor Hidayah binti Zakaria

Name: Cheng See Chee

Matric number: A22EC0043

Section: 08

Section 6 Lesson 4 Exercise 2: Data Manipulation Language

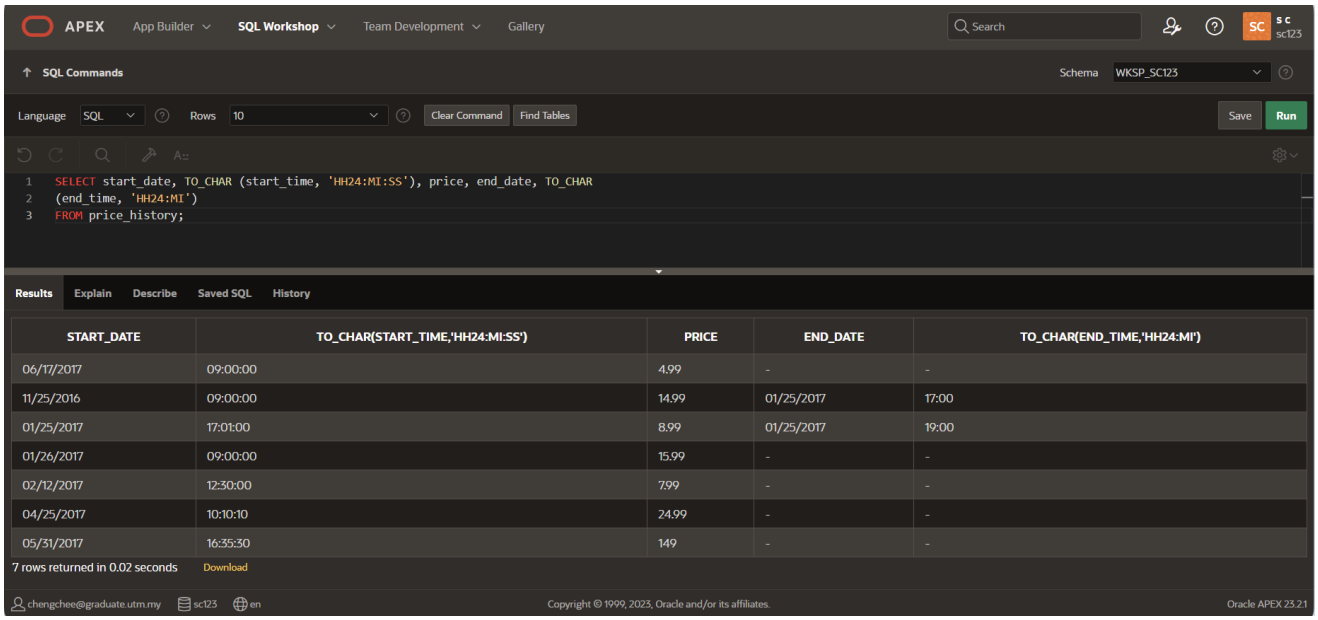
Use DML operations to manage database tables (S6L4 Objective 2)

In this exercise you will populate and work with the data that is stored in the database system.

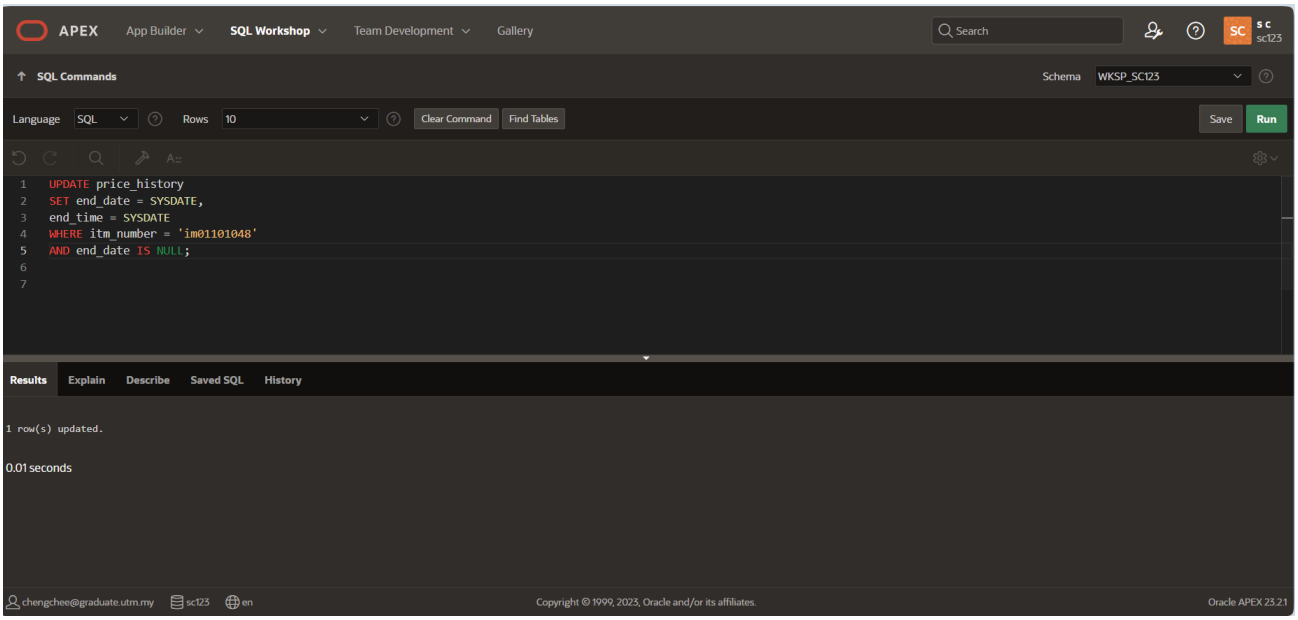
Part 1- Updating rows to the system

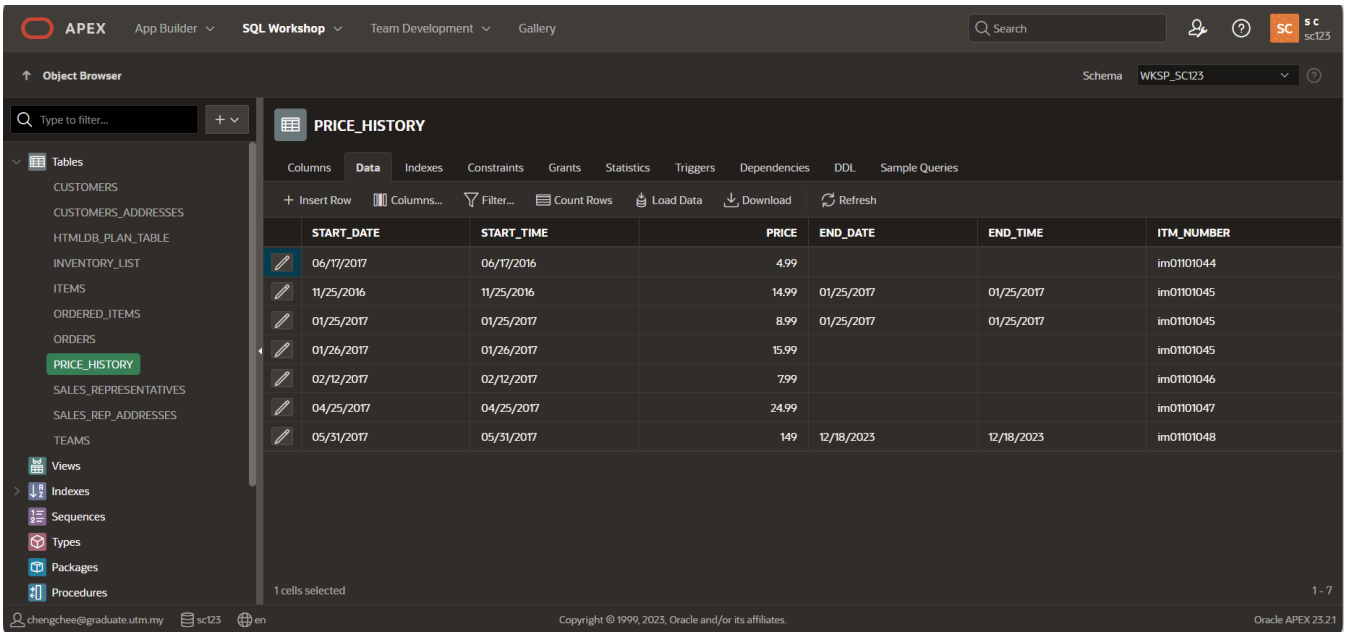
1. Run the following query to view the content of the price_history table:

```
SELECT start_date, TO_CHAR (start_time, 'HH24:MI:SS'), price, end_date, TO_CHAR
(end_time, 'HH24:MI')
FROM price_history;
```

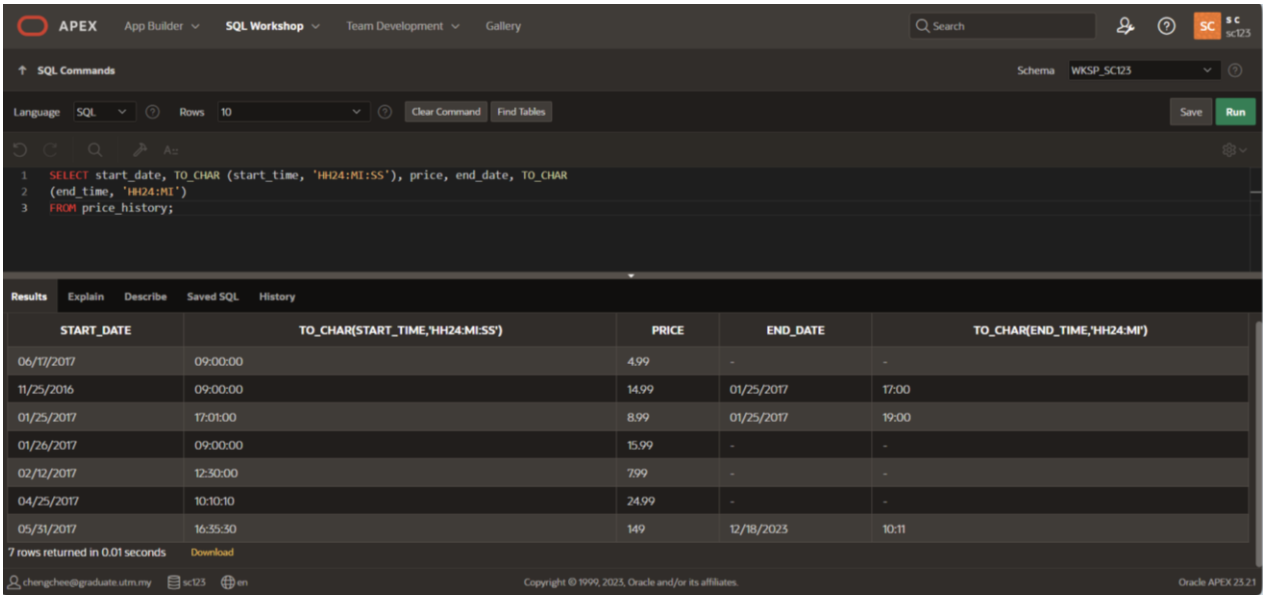


2. Obl is going to update the price of the premium bat so you will need to write a query that will close off the current price by adding the system date values to the end_date and end_time fields. To run this query you will need to both match the item number and identify that the end date is null. This ensures that you are updating the latest price.

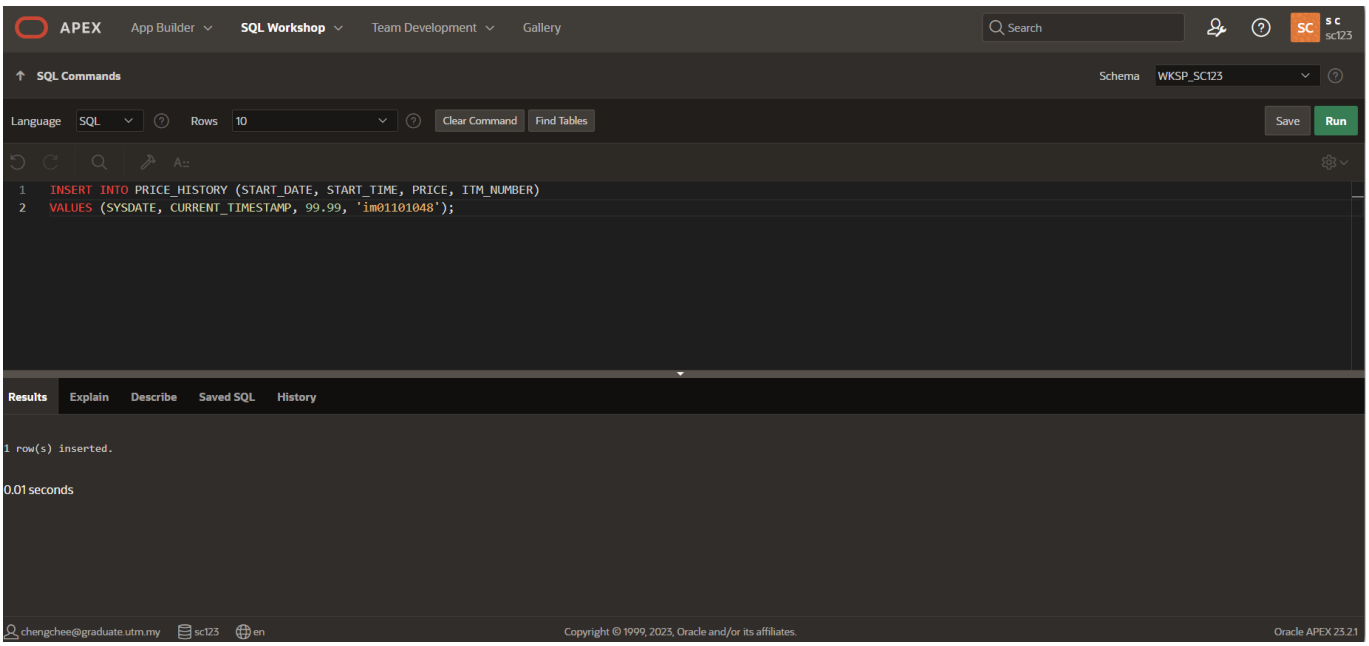




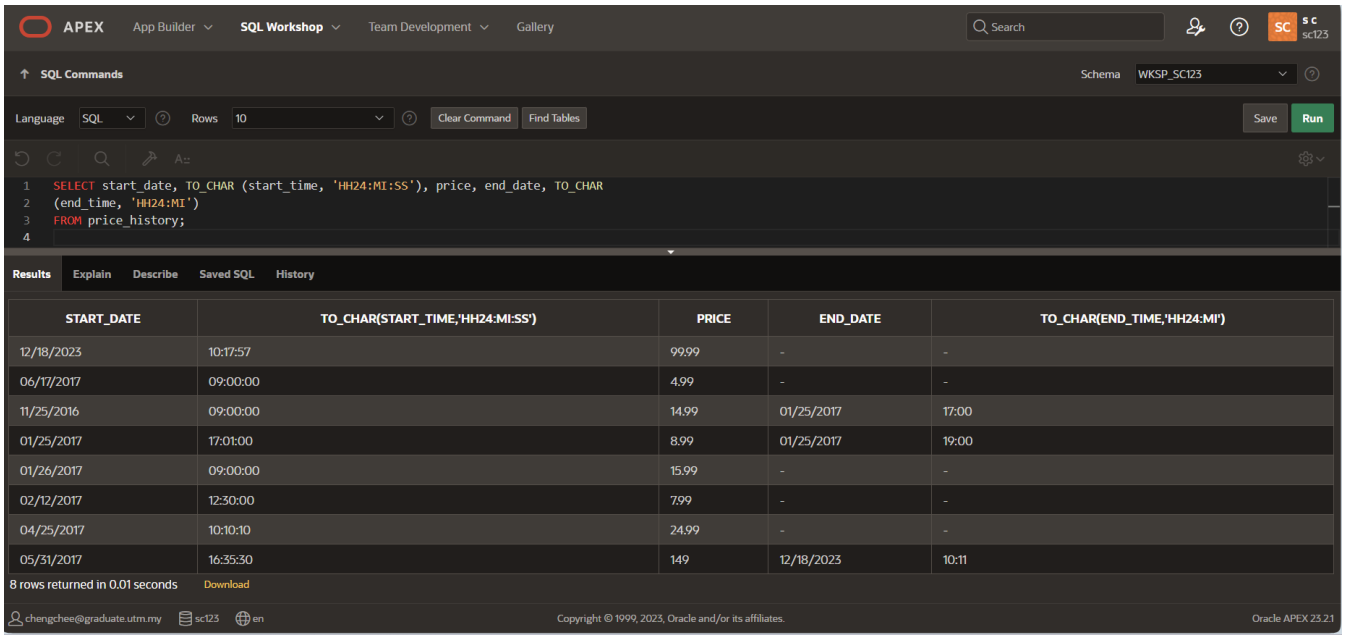
3. Rerun the select statement on the price_history table to ensure that the statement has been executed.



4. Insert a new row that will use the current date and time to set the new price of the premium bat to be 99.99.

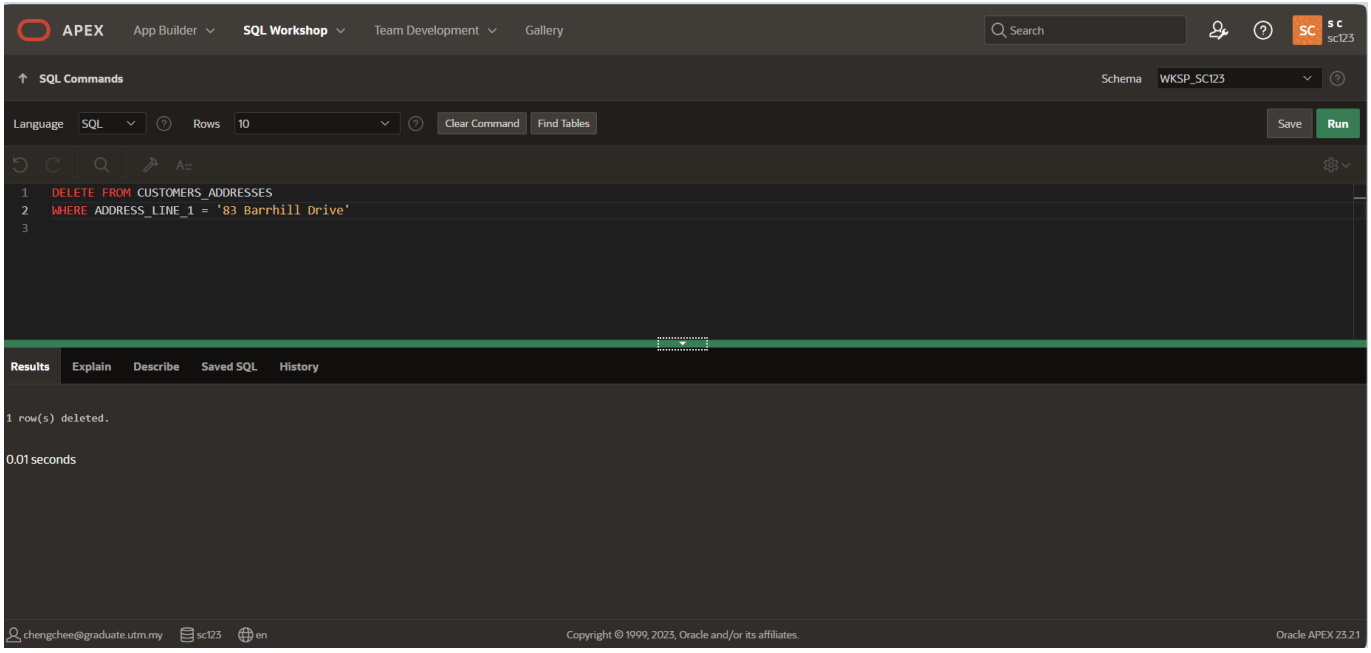


5. Rerun the select statement on the price_history table to ensure that the statement has been executed.



Part 2: Deleting rows from the system

1. Bob Thornberry has contacted Obl to ask that the 83 Barrhill Drive address be removed from the system as he can longer receive parcels at this address. Write a SQL statement that will remove this address from the system.



2. Run a select statement on the customers_addresses table to ensure that the statement has been executed.