Term: 2024S FSDM

Course: Database Programming

Practical Exercise #2

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Student Number: Shreejana Shrestha

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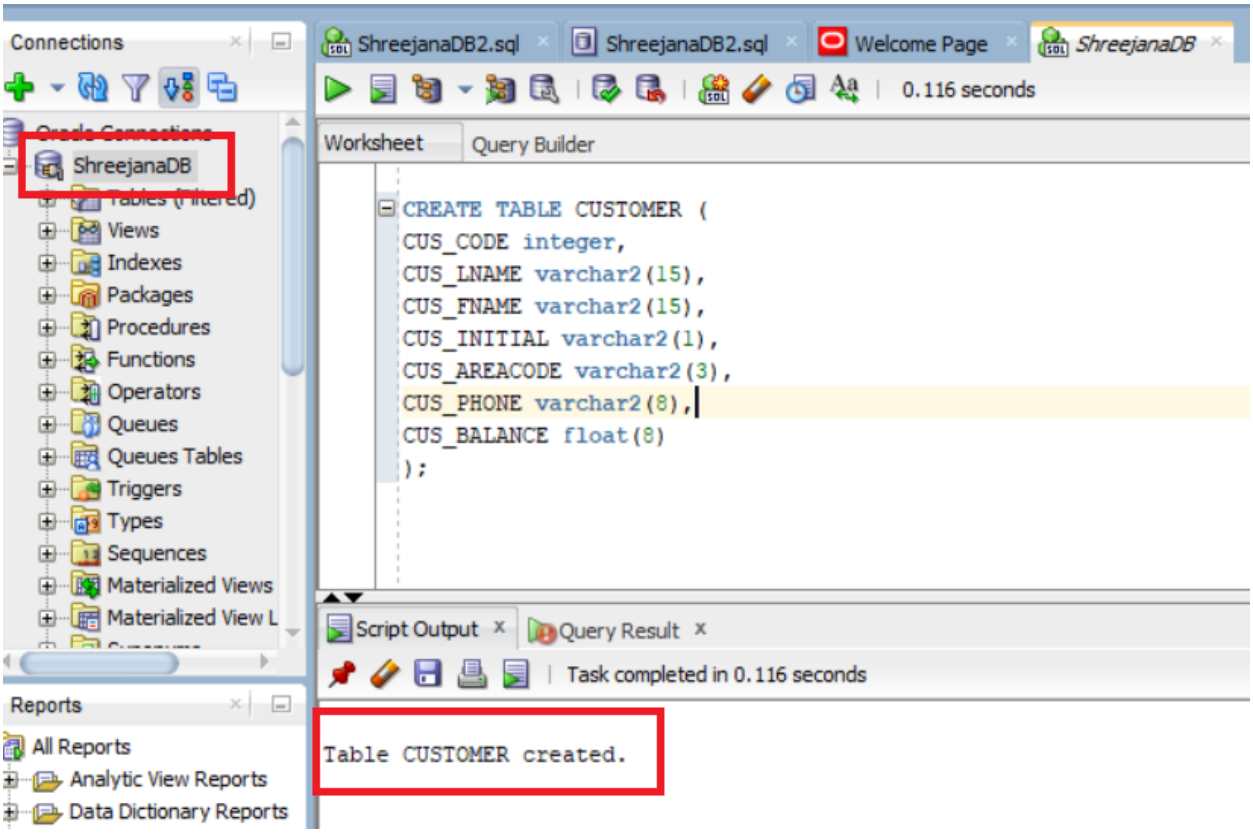
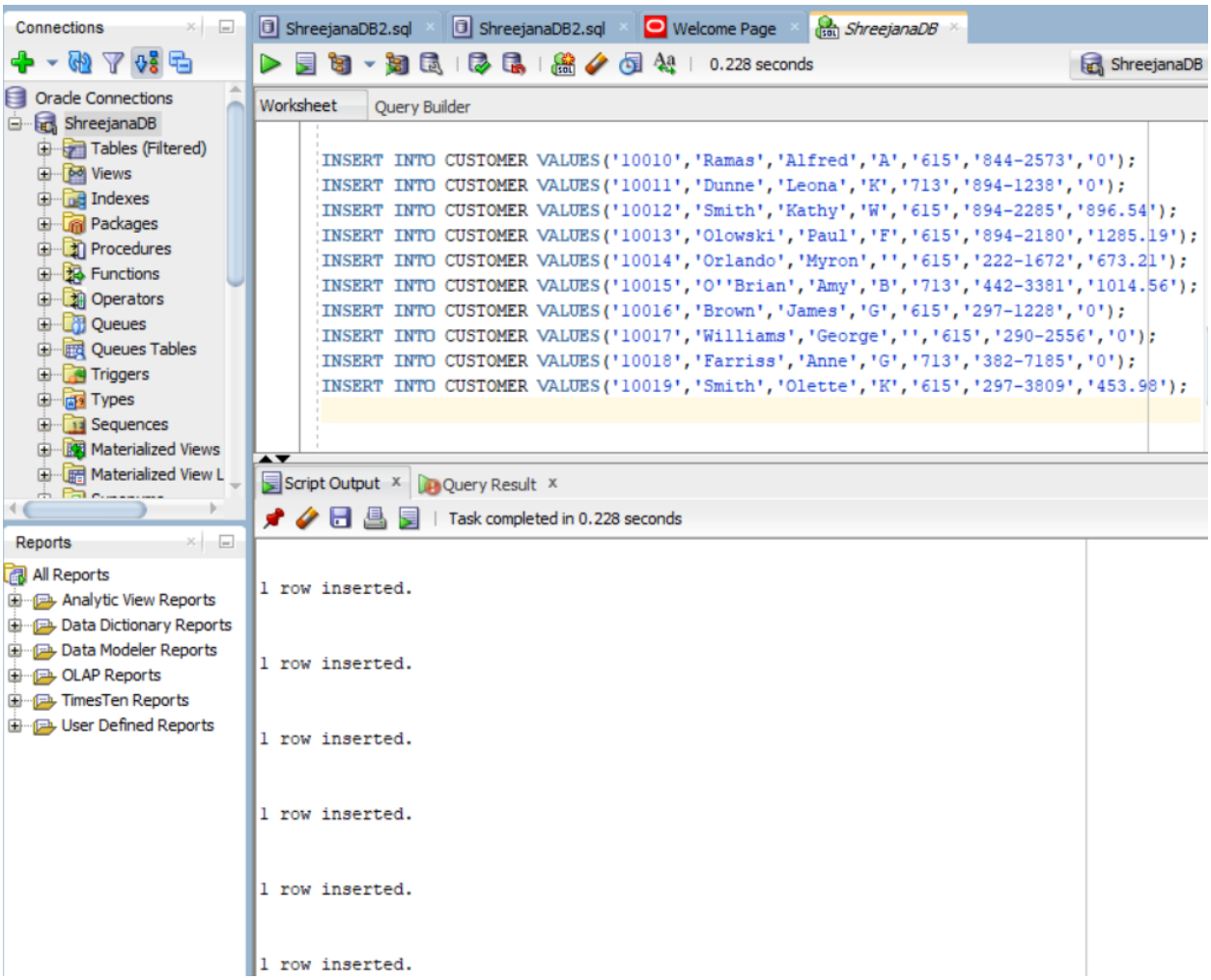
1. Customer Table creation



2. Table data insertion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0.228 seconds
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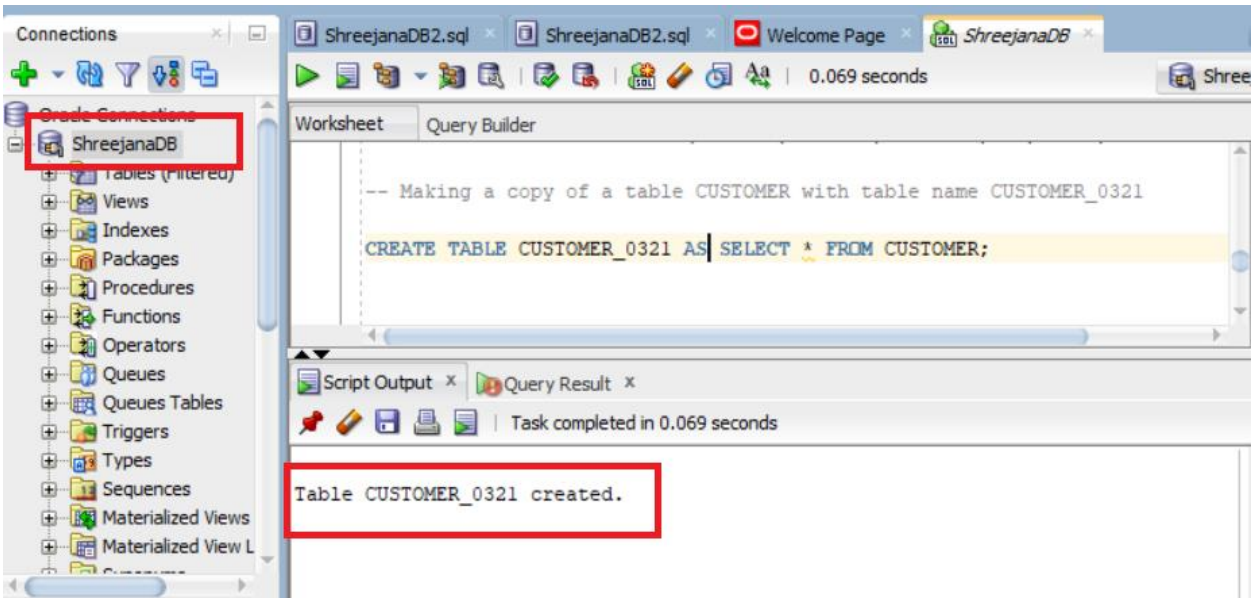
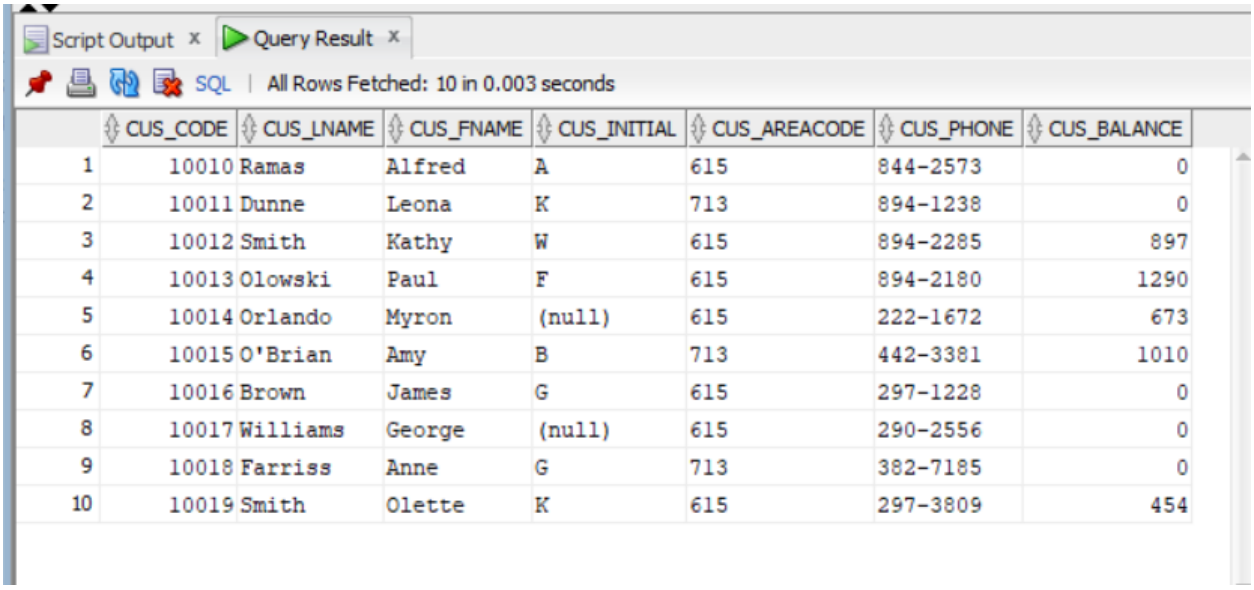
Worksheet
Query Builder
INSERT INTO CUSTOMER VALUES('10010','Ramas','Alfred','A','615','844-2573','0');
INSERT INTO CUSTOMER VALUES('10011','Dunne','Leona','K','713','894-1238','0');
INSERT INTO CUSTOMER VALUES('10012','Smith','Kathy','W','615','894-2285','896.54');
INSERT INTO CUSTOMER VALUES('10013','Olowski','Paul','F','615','894-2180','1285.19');
INSERT INTO CUSTOMER VALUES('10014','Orlando','Myron','','615','222-1672','673.21');
INSERT INTO CUSTOMER VALUES('10015','O''Brian','Amy','B','713','442-3381','1014.56');
INSERT INTO CUSTOMER VALUES('10016','Brown','James','G','615','297-1228','0');
INSERT INTO CUSTOMER VALUES('10017','Williams','George','','615','290-2556','0');
INSERT INTO CUSTOMER VALUES('10018','Farriss','Anne','G','713','382-7185','0');
INSERT INTO CUSTOMER VALUES('10019','Smith','Olette','K','615','297-3809','453.98');
Script Output
Query Result
Task completed in 0.228 seconds
1 row inserted.
1 row inserted.
1 row inserted.
1 row inserted.
1 row inserted.
1 row inserted.

3. Making copy of CUSTOMER table





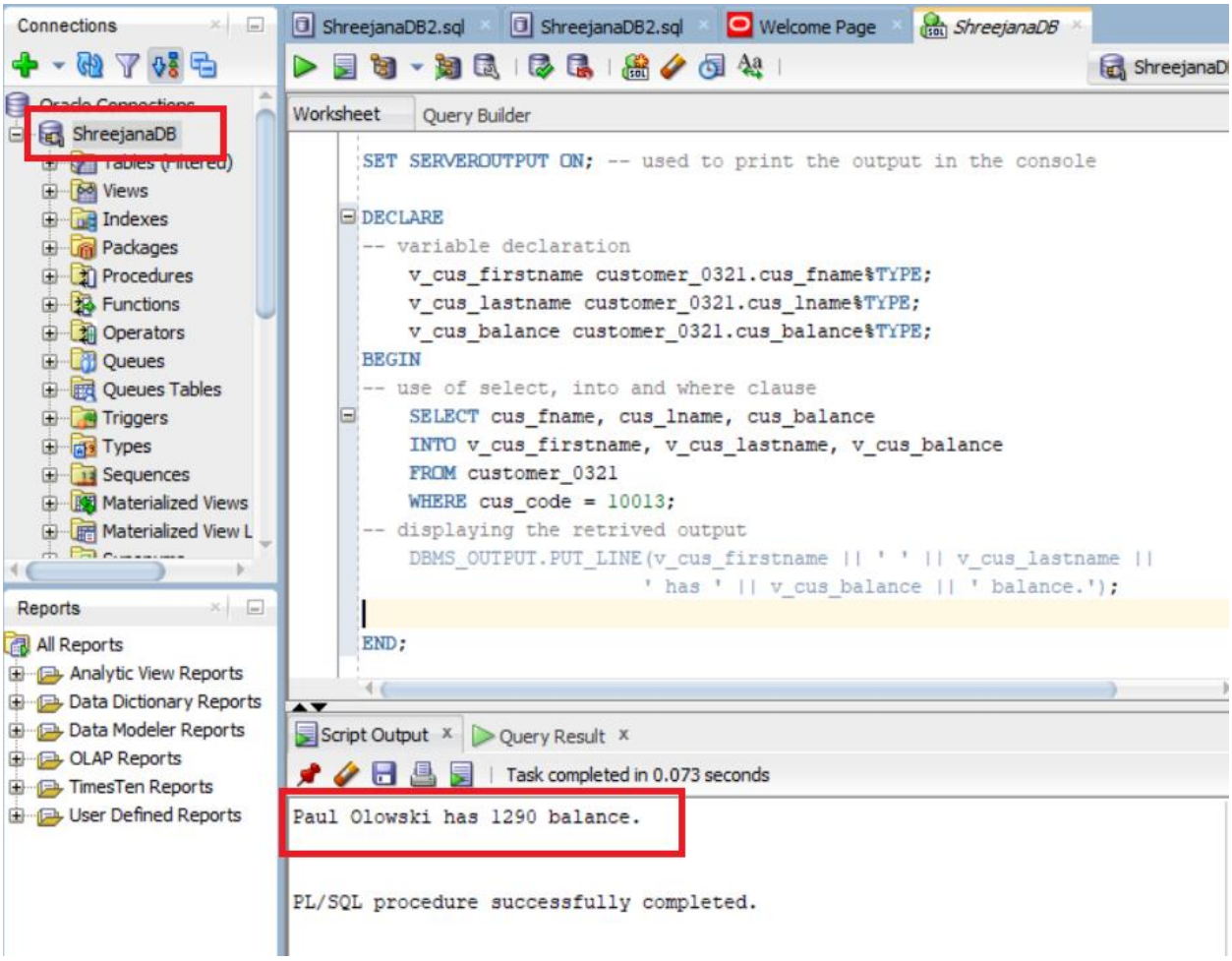
	CUS_CODE	CUS_LNAME	CUS_FNAME	CUS_INITIAL	CUS_AREACODE	CUS_PHONE	CUS_BALANCE
1	10010	Ramas	Alfred	A	615	844-2573	0
2	10011	Dunne	Leona	K	713	894-1238	0
3	10012	Smith	Kathy	W	615	894-2285	897
4	10013	Olowski	Paul	F	615	894-2180	1290
5	10014	Orlando	Myron	(null)	615	222-1672	673
6	10015	O'Brian	Amy	B	713	442-3381	1010
7	10016	Brown	James	G	615	297-1228	0
8	10017	Williams	George	(null)	615	290-2556	0
9	10018	Farriss	Anne	G	713	382-7185	0
10	10019	Smith	Olette	K	615	297-3809	454

4. Write a PL/SQL script to demonstrate the use of %TYPE, SELECT INTO using where clause, and display output.

Code block:

```
SET SERVEROUTPUT ON; -- used to print the output in the console


DECLARE
-- variable declaration
   v_cus_firstname customer_0321.cus_fname%TYPE;
   v_cus_lastname customer_0321.cus_lname%TYPE;
   v_cus_balance customer_0321.cus_balance%TYPE;
BEGIN
-- use of select, into and where clause
   SELECT cus_fname, cus_lname, cus_balance
   INTO v_cus_firstname, v_cus_lastname, v_cus_balance
   FROM customer_0321
   WHERE cus_= 10013;
-- displaying the retrived output
   DBMS_OUTPUT.PUT_LINE(v_cus_firstname || ' ' || v_cus_lastname ||
                  ' has ' || v_cus_balance || ' balance.');
END;
```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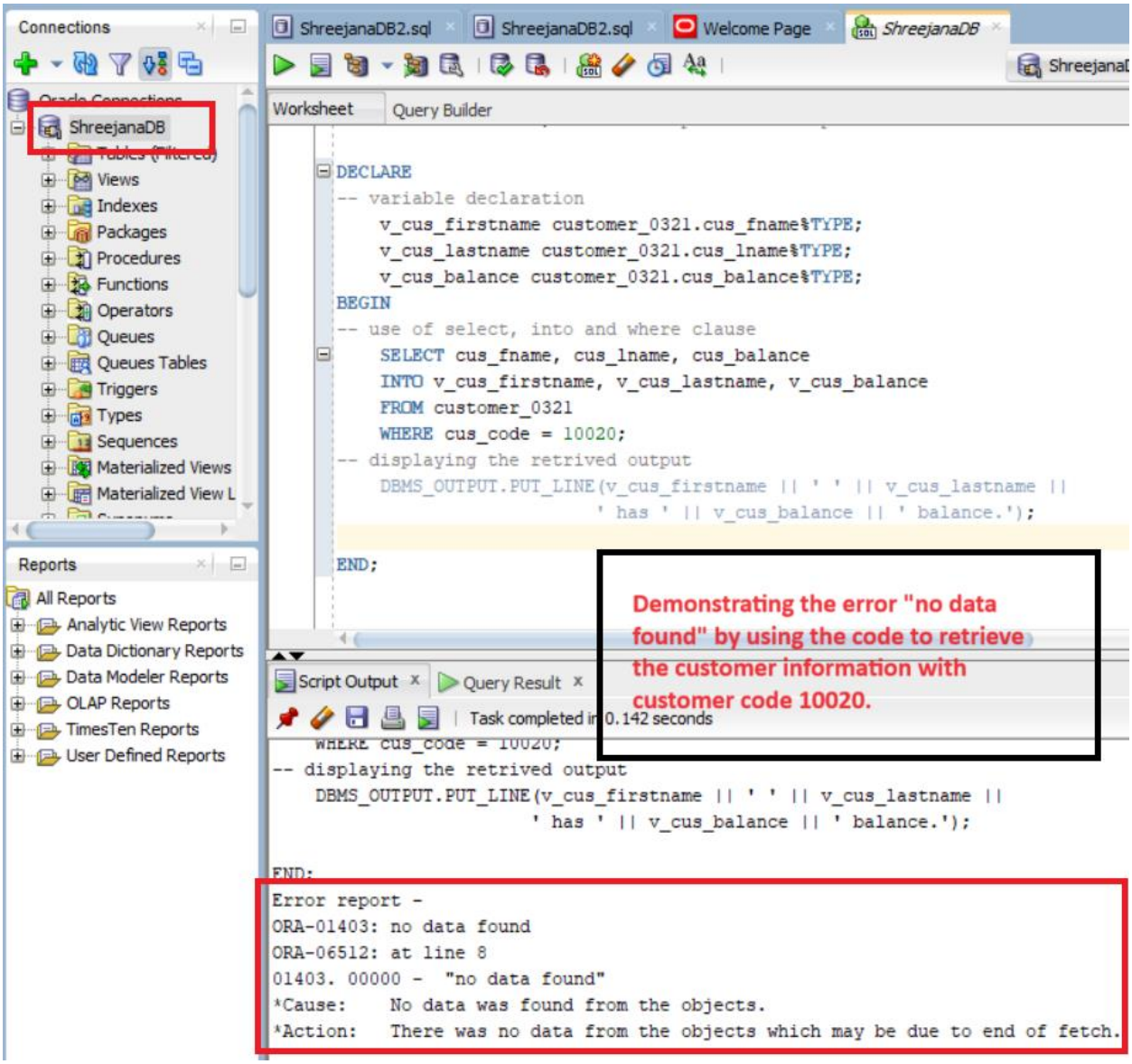
Query Builder
SET SERVEROUTPUT ON; -- used to print the output in the console
DECLARE
-- variable declaration
v_cus_firstname customer_0321.cus_fname%TYPE;
v_cus_lastname customer_0321.cus_lname%TYPE;
v_cus_balance customer_0321.cus_balance%TYPE;
BEGIN
-- use of select, into and where clause
SELECT cus_fname, cus_lname, cus_balance
INTO v_cus_firstname, v_cus_lastname, v_cus_balance
FROM customer_0321
WHERE cus_code = 10013;
-- displaying the retrived output
DBMS_OUTPUT.PUT_LINE(v_cus_firstname || ' ' || v_cus_lastname ||
' has ' || v_cus_balance || ' balance.');
END;
Script Output
Query Result
Task completed in 0.073 seconds
Paul Olowski has 1290 balance.
PL/SQL procedure successfully completed.

5. Write a PL/SQL script to demonstrate the error “ no data found”.

Code block:

```
DECLARE
-- variable declaration
   v_cus_firstname customer_0321.cus_fname%TYPE;
   v_cus_lastname customer_0321.cus_lname%TYPE;
   v_cus_balance customer_0321.cus_balance%TYPE;
BEGIN
-- use of select, into and where clause
   SELECT cus_fname, cus_lname, cus_balance
   INTO v_cus_firstname, v_cus_lastname, v_cus_balance
   FROM customer_0321
   WHERE cus_= 10020;
-- displaying the retrived output
   DBMS_OUTPUT.PUT_LINE(v_cus_firstname || ' ' || v_cus_lastname ||
                  ' has ' || v_cus_balance || ' balance.');
END;
```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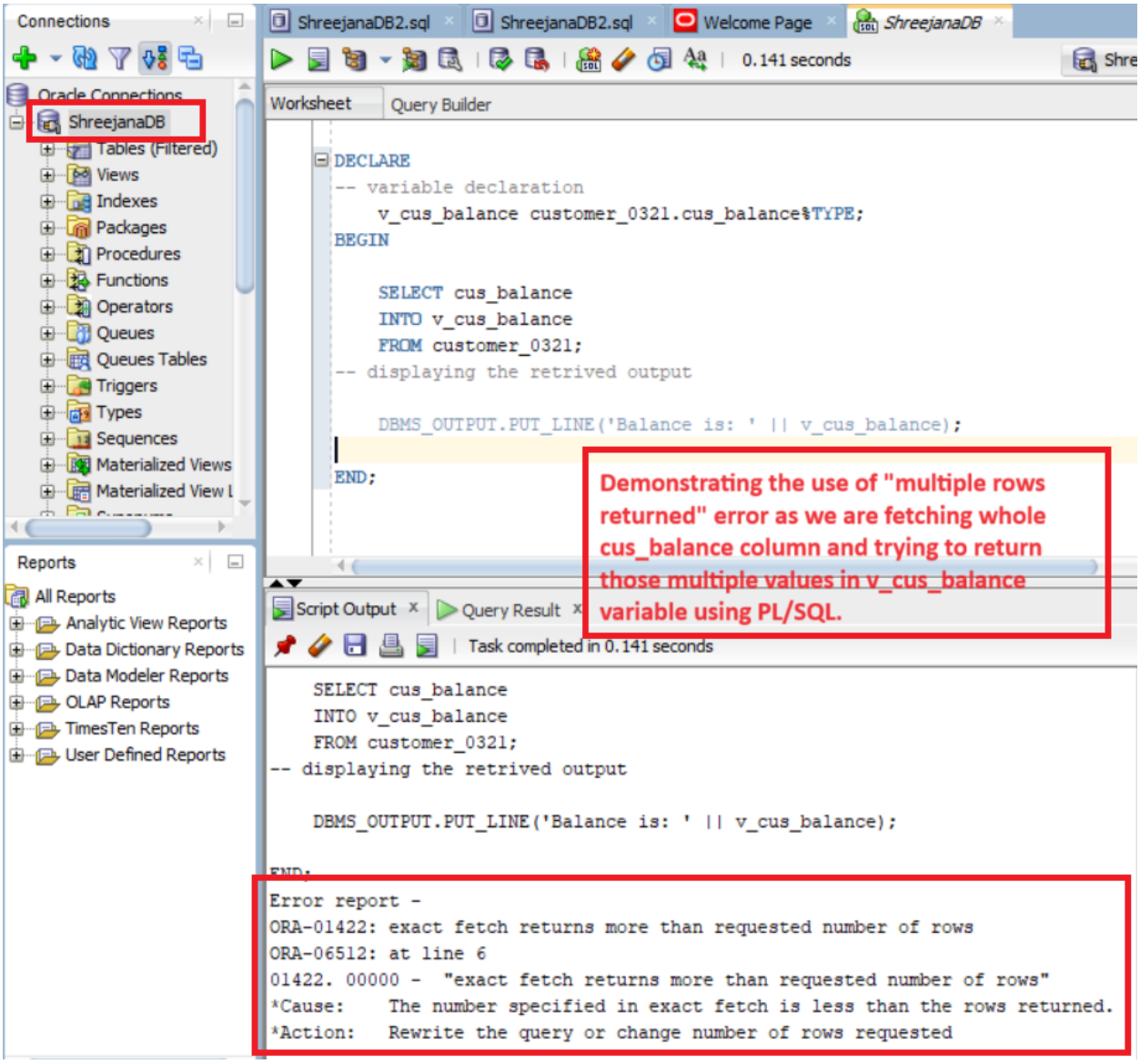
Query Builder
DECLARE
-- variable declaration
v_cus_firstname customer_0321.cus_fname%TYPE;
v_cus_lastname customer_0321.cus_lname%TYPE;
v_cus_balance customer_0321.cus_balance%TYPE;
BEGIN
-- use of select, into and where clause
SELECT cus_fname, cus_lname, cus_balance
INTO v_cus_firstname, v_cus_lastname, v_cus_balance
FROM customer_0321
WHERE cus_code = 10020;
-- displaying the retrived output
DBMS_OUTPUT.PUT_LINE(v_cus_firstname || ' ' || v_cus_lastname ||
' has ' || v_cus_balance || ' balance.');
END;
Demonstrating the error "no data found" by using the code to retrieve the customer information with customer code 10020.
Script Output
Query Result
Task completed in 0.142 seconds
WHERE cus_code = 10020;
-- displaying the retrived output
DBMS_OUTPUT.PUT_LINE(v_cus_firstname || ' ' || v_cus_lastname ||
' has ' || v_cus_balance || ' balance.');
END;
Error report -
ORA-01403: no data found
ORA-06512: at line 8
01403. 00000 - "no data found"
*Cause: No data was found from the objects.
*Action: There was no data from the objects which may be due to end of fetch.

6. Write a PL/SQL script to demonstrate the error “ multiple rows returned”.

Code block:

```
DECLARE
-- variable declaration
   v_cus_balance customer_0321.cus_balance%TYPE;
BEGIN

   SELECT cus_balance
   INTO v_cus_balance
   FROM customer_0321;
-- displaying the retrived output
   DBMS_OUTPUT.PUT_LINE('Balance is: ' || v_cus_balance);
END;
```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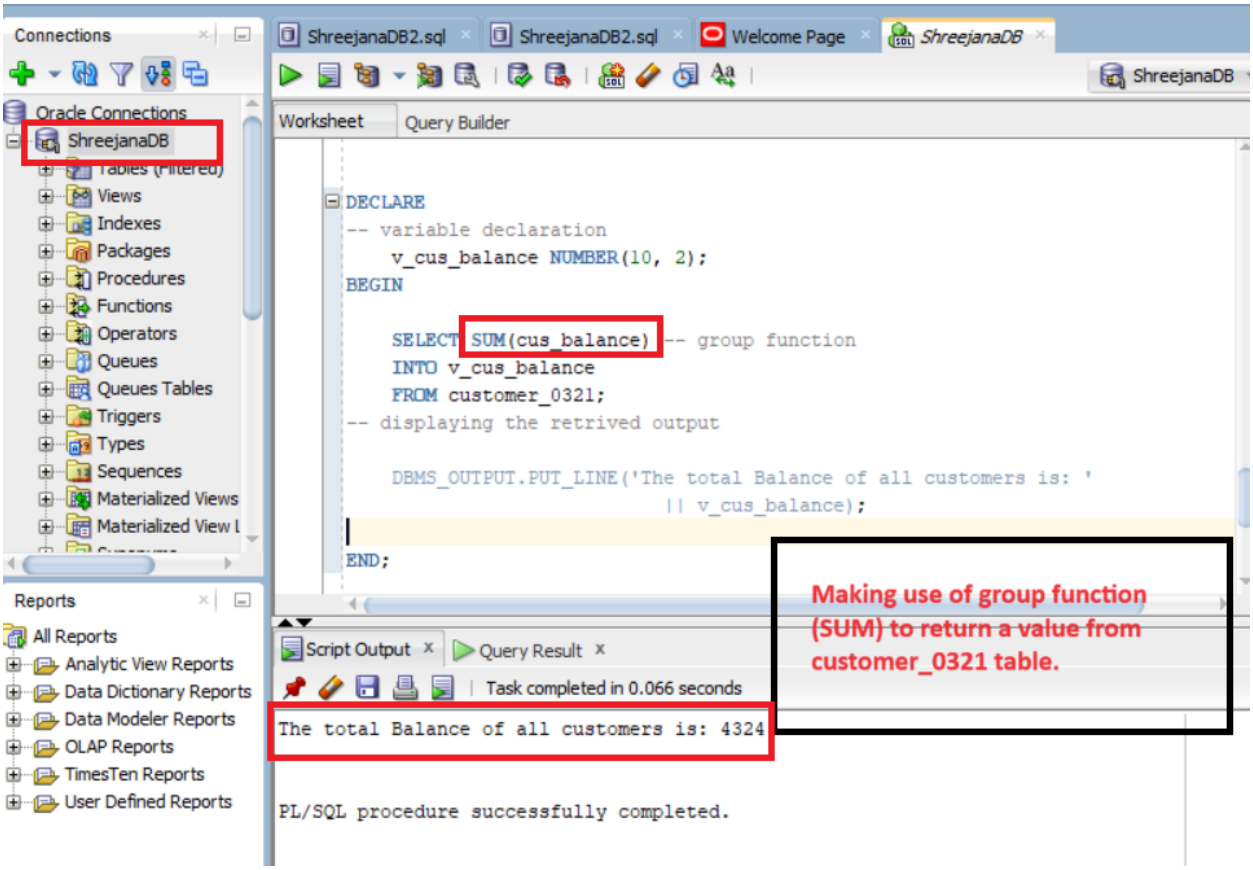
0.141 seconds
Worksheet
Query Builder
DECLARE
-- variable declaration
v_cus_balance customer_0321.cus_balance%TYPE;
BEGIN
SELECT cus_balance
INTO v_cus_balance
FROM customer_0321;
-- displaying the retrived output
DBMS_OUTPUT.PUT_LINE('Balance is: ' || v_cus_balance);
END;
Demonstrating the use of "multiple rows returned" error as we are fetching whole cus_balance column and trying to return those multiple values in v_cus_balance variable using PL/SQL.
Script Output
Query Result
Task completed in 0.141 seconds
SELECT cus_balance
INTO v_cus_balance
FROM customer_0321;
-- displaying the retrived output
DBMS_OUTPUT.PUT_LINE('Balance is: ' || v_cus_balance);
END;
Error report -
ORA-01422: exact fetch returns more than requested number of rows
ORA-06512: at line 6
01422. 00000 - "exact fetch returns more than requested number of rows"
*Cause: The number specified in exact fetch is less than the rows returned.
*Action: Rewrite the query or change number of rows requested

7. Write a PL/SQL script to demonstrate the use of group function.

Code block:

```
DECLARE
-- variable declaration
   v_cus_balance NUMBER(10, 2);
BEGIN
   SELECT SUM(cus_balance) -- group function
   INTO v_cus_balance
   FROM customer_0321;
-- displaying the retrived output

   DBMS_OUTPUT.PUT_LINE('The total Balance of all customers is: '
                        || v_cus_balance);
END;
```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Query Builder
DECLARE
-- variable declaration
v_cus_balance NUMBER(10, 2);
BEGIN
SELECT SUM(cus_balance) -- group function
INTO v_cus_balance
FROM customer_0321;
-- displaying the retrived output
DBMS_OUTPUT.PUT_LINE('The total Balance of all customers is: '
|| v_cus_balance);
END;
Script Output
Query Result
Task completed in 0.066 seconds
The total Balance of all customers is: 4324
PL/SQL procedure successfully completed.
Making use of group function (SUM) to return a value from customer_0321 table.