

Assignment #3 – Cursors, Procedures & Functions

Due Date: Midnight of March 11 (Friday)

Purpose: The purpose of this assignment is to help you:

- Become familiar with Cursors, Exceptions, Procedures and Functions

Instructions: Be sure to read the following general instructions carefully:

This assignment should be completed individually by all the students. Submit your solution **through the dropbox**. Your submission should include PL/SQL code and the screenshot of code execution result, the submission must be named according to the following rule: **studentID(yourlastname)_Assignment#number.doc**. e.g., 300123456(smith)_Assignment#3.doc

Questions [14 marks]

1. **[3 marks]** Create a function to calculate a shopper's total spending, excluding shipping and tax amount, with Brewbean's site in a particular year. Exception handling is needed.

Use an anonymous block to call the function and output the result.

```
CREATE OR REPLACE FUNCTION SHOP_TOT_SF(p_id IN NUMBER)
RETURN NUMBER
AS
lv_tot_num NUMBER(8,2);
BEGIN
SELECT SUM(subtotal)
INTO lv_tot_num
FROM bb_basket
WHERE idShopper = p_id;
RETURN lv_tot_num;
END SHOP_TOT_SF;
```

```
SELECT idShopper, dtcreated, shop_tot_sf(idShopper)"TOTSPENDING"
FROM bb_basket;
```

The screenshot shows a database management tool interface. On the left is a 'Connections' pane with a tree view of the database schema, including tables, views, indexes, packages, procedures, functions, operators, queues, queues tables, and triggers. The 'Reports' pane is also visible. The main window displays a 'Query Builder' with the following SQL query:

```
1 SELECT idShopper, dtcreated, shop_tot_sf(idShopper) "TOTSPENDING"
2 FROM bb_basket;
```

The 'Script Output' pane shows the execution time: 'Task completed in 0.648 seconds'. Below this, the query results are displayed in a table:

IDSHOPPER	DTCREATED	TOTSPENDING
21	23-JAN-12 00:00:00	55.1
21	12-FEB-12 00:00:00	55.1

The 'Dbms Output' pane at the bottom shows 'Buffer Size: 20000' and 'Messages - Log' with the status 'Compiled'.

2. [3 marks] Create a procedure to allow an employee in the shipping department to update an order status to add **shipping information**. The BB_BASKETSTATUS table lists events for each order so that a shopper can see the **current status, date, and comments as each stage** of the order process are finished.

Use an anonymous block to test your procedure.

```
CREATE OR REPLACE PROCEDURE STAT_SHIP_SP
(p_basketid IN bb_basketstatus.idbasket%TYPE,
p_date IN DATE,
p_note IN bb_basketstatus.notes%TYPE,
p_shipper IN bb_basketstatus.shipper%TYPE,
p_shippingnum IN bb_basketstatus.shippingnum%TYPE)
AS
BEGIN
    INSERT INTO bb_basketstatus (idstatus, idbasket, idstage, dtstage, Notes,
    shipper, shippingnum)
    VALUES (bb_status_seq.NEXTVAL, p_basketid, 3, p_date, p_note, p_shipper,
    p_shippingnum);
    COMMIT;
END STAT_SHIP_SP;

BEGIN
    stat_ship_sp(4,'01MAR12','Shipped order','UPS','ZW9031OQG2977H24');
END;

SELECT *
FROM bb_basketstatus;
```

The screenshot shows the SQL Developer interface with a query executed in the 'Query Builder' worksheet. The query is:

```

1 BEGIN
2   stat_ship_sp(4,'01MAR12','Shipped order','UPS','ZW90310Q62977H24');
3 END;
4 SELECT *
5   FROM bb_basketstatus;

```

The 'Script Output' pane shows 'Task completed in 0.066 seconds' and 'PL/SQL procedure successfully completed.' The 'Results' pane displays the following data:

IDSTATUS	IDBASKET	IDSTAGE	DTSTAGE	NOTES	SHIPP	SHIPPINGNUM
1	3	1	24-JAN-12 00:00:00			
2	3	5	25-JAN-12 00:00:00	Customer called to confirm shipment	UPS	ZW845584GD89H569
3	4	1	13-FEB-12 00:00:00			
4	4	5	13-FEB-12 00:00:00			
15	12	3				
39	4	3	01-MAR-12 00:00:00	Shipped order	UPS	ZW90310Q62977H24

6 rows selected.

3. **[3 marks]** Create a function to insert a new product into an existing order, include the product id, unit price, quantity. The output of the function is the message to notify the calling program whether the update succeeded or not.

Use an anonymous block to call the function and output the result.

4. **[3 marks]** Create a function to determine the total pledge amount for a project. Use the function in an SQL statement to list all projects, displaying project ID, project name, and project pledge total amount. Format the pledge total amount to show a dollar sign.

Add at least two rows in dd_pledge for the project "Covid-19 relief fund" which you created in assignment#2.

```

CREATE OR REPLACE FUNCTION DD_PROTPL_SF(p_id IN dd_project.idproj
%TYPE)
RETURN NUMBER
AS
lv_amt_num NUMBER(9,2);
BEGIN
SELECT SUM(pledgeamt)
INTO lv_amt_num
FROM dd_pledge
WHERE idproj = p_id;
RETURN lv_amt_num;
END DD_PROTPL_SF;

```

```

INSERT INTO dd_pledge
VALUES (113,301,'12-OCT-2012',31,600,20,NULL,0,738,'N');
INSERT INTO dd_pledge
VALUES (114,302,'15-OCT-2012',20,600,10,NULL,24,749,'Y');
INSERT INTO dd_pledge

```

```
VALUES (115,308,'20-JAN-2013',190,600,10,NULL,24,790,'N');
```

```
SELECT idproj, projname,
TO_CHAR(NVL(dd_protpl_sf(idproj),0),'$99,999.00') "PROYTOTAMT"
FROM dd_project;
```

The screenshot shows the Oracle SQL Developer interface. The 'Connections' pane on the left lists various database objects. The 'Script Output' pane at the bottom shows the execution of a query, indicating '1 row inserted.' and '6 rows selected.' The 'Messages - Log' pane shows 'Compiled'.

IDPROJ	PROJNAME	PROYTOTAMT
500	Elders Assistance League	\$190.00
501	Community food pantry #21 freezer equipment	\$4,060.00
502	Lang Scholarship Fund	\$0.00
503	Animal shelter Vet Connect Program	\$840.00
504	Shelter Share Project 2013	\$2,040.00
600	Covid-19 relief fund	\$241.00

5. [2 marks] Create a procedure to allow company employee to add new product to the database. This procedure needs only IN parameters.

Use an anonymous block to test your procedure.

```
CREATE OR REPLACE PROCEDURE ADD_NPR_SP
(p_name IN bb_product.productname%TYPE,
p_descrip IN bb_product.description%TYPE,
p_image IN bb_product.productimage%TYPE,
p_price IN bb_product.price%TYPE,
p_active IN bb_product.active%TYPE,
p_type IN bb_product.type%TYPE,
P_iddep IN bb_product.iddepartment%TYPE)
AS
BEGIN
INSERT INTO bb_product (idproduct, productname, description,
productimage, price, active, type, iddepartment)
VALUES (bb_prodid_seq.NEXTVAL, p_name, p_descrip, p_image, p_price,
p_active, p_type, p_iddep);
COMMIT;
END ADD_NPR_SP;
```

```

BEGIN
add_npr_sp('Titanium Iron 50X','Innovative night energy saving device',
          'ironsuper.jpg',9.50,1,'C',2);
END;
SELECT *
FROM bb_product

```

The screenshot shows a database management tool interface. On the left is a 'Connections' pane with a tree view of database objects including Tables, Views, Indexes, Packages, Procedures, Functions, Operators, Queues, and Queue Tables. The 'Reports' pane on the right shows a list of reports. The main window displays a SQL script in the 'Worksheet' tab, which has been executed. The 'Script Output' tab shows the results of the execution, including a table of product data and a confirmation message.

Script Output

Task completed in 0.082 seconds

IDPRODUCT	PRODUCTNAME	DESCRIPTION	PROD
1	CapressoBar Model #351	A fully programmable pump espresso machine and 10-cup coffee maker complete with GoldTone filter	capr
2	Capresso Ultima	Coffee and Espresso and Cappuccino Machine. Brews from one espresso to two six ounce cups of coffee	capr
3	Eileen 4-cup French Press	A unique coffeemaker from those proud craftsmen in windy Normandy.	frep
4	Coffee Grinder	Avoid blade grinders! This mill grinder allows you to choose a fine grind to a coarse grind.	grin
5	Sumatra	Spicy and intense with herbal aroma.	suma
6	Guatemala	heavy body, spicy twist, aromatic and smokey flavor.	Guat
7	Columbia	dry, nutty flavor and smoothness	colu
8	Brazil	well-balanced mellow flavor, a medium body with hints of cocoa and a mild, nut-like aftertaste	braz
9	Ethiopia	distinctive berry-like flavor and aroma, reminds many of a fruity, memorable wine.	ethi
10	Espresso	dense, caramel-like sweetness with a soft acidity. Roasted somewhat darker than traditional Italian.	espr
35	Titanium Iron 50X	Innovative night energy saving device	iron