--create package

CREATE OR REPLACE PACKAGE pkg\_natural\_join

AS

PROCEDURE sp\_natural\_join;

END;

/

--create package body

CREATE OR REPLACE PACKAGE BODY pkg\_natural\_join

AS

PROCEDURE sp\_natural\_join

AS

CURSOR a\_cursor IS

SELECT \* FROM tbl\_customer\_address

ORDER BY customer\_id;

r\_a a\_cursor%ROWTYPE;

CURSOR b\_cursor IS

SELECT \* FROM tbl\_customers

WHERE customer\_id = r\_a.customer\_id

ORDER BY customer\_id;

r\_b b\_cursor%ROWTYPE;

BEGIN

OPEN a\_cursor;

LOOP

FETCH a\_cursor INTO r\_a;

EXIT WHEN a\_cursor%NOTFOUND;

IF b\_cursor%ISOPEN THEN

CLOSE b\_cursor;

END IF;

OPEN b\_cursor;

LOOP

FETCH b\_cursor INTO r\_b;

EXIT WHEN b\_cursor%NOTFOUND;

END LOOP;

IF r\_a.customer\_id = r\_b.customer\_id THEN

DBMS\_OUTPUT.put\_line ('customer\_id: ' ||r\_b.customer\_id ||' first\_name: ' || r\_b. first\_name ||

' last\_name: '||r\_b.last\_name ||' email: '||r\_b.email ||

' phone\_number: '||r\_b.phone\_number ||' fax: '||r\_b.fax ||

' address\_id: '||r\_a.address\_id ||' street\_address: '||r\_a.street\_address ||

' postal\_code: '||r\_a.postal\_code ||' city: '||r\_a.city ||

' state: '||r\_a.state ||' address\_type: '||r\_a.address\_type);

END IF;

CLOSE b\_cursor;

END LOOP;

CLOSE a\_cursor;

EXCEPTION

WHEN OTHERS THEN raise\_application\_error(-20001,'An error was encountered - '||SQLCODE||' -ERROR- '||SQLERRM);

END sp\_natural\_join;

END pkg\_natural\_join;

--create package

CREATE OR REPLACE PACKAGE pkg\_left\_join

AS

PROCEDURE sp\_left\_join;

END;

/

--create package body

CREATE OR REPLACE PACKAGE BODY pkg\_left\_join

AS

PROCEDURE sp\_left\_join

AS

CURSOR a\_cursor IS

SELECT \* FROM tbl\_customer\_address

ORDER BY customer\_id;

r\_a a\_cursor%ROWTYPE;

CURSOR b\_cursor IS

SELECT \* FROM tbl\_customers

WHERE customer\_id = r\_a.customer\_id

ORDER BY customer\_id;

r\_b b\_cursor%ROWTYPE;

BEGIN

OPEN a\_cursor;

LOOP

FETCH a\_cursor INTO r\_a;

EXIT WHEN a\_cursor%NOTFOUND;

IF b\_cursor%ISOPEN THEN

CLOSE b\_cursor;

END IF;

OPEN b\_cursor;

LOOP

FETCH b\_cursor INTO r\_b;

EXIT WHEN b\_cursor%NOTFOUND;

END LOOP;

IF r\_a.customer\_id = r\_b.customer\_id THEN

DBMS\_OUTPUT.put\_line ('customer\_id: ' ||r\_b.customer\_id ||' first\_name: ' || r\_b. first\_name ||

' last\_name: '||r\_b.last\_name ||' email: '||r\_b.email ||

' phone\_number: '||r\_b.phone\_number ||' fax: '||r\_b.fax ||

' address\_id: '||r\_a.address\_id ||'customer\_id: ' ||r\_b.customer\_id ||

' street\_address: '||r\_a.street\_address ||

' postal\_code: '||r\_a.postal\_code ||' city: '||r\_a.city ||

' state: '||r\_a.state ||' address\_type: '||r\_a.address\_type);

ELSE

DBMS\_OUTPUT.put\_line ('customer\_id: ' ||r\_b.customer\_id ||' first\_name: ' || r\_b. first\_name ||

' last\_name: '||r\_b.last\_name ||' email: '||r\_b.email ||

' phone\_number: '||r\_b.phone\_number ||' fax: '||r\_b.fax );

END IF;

CLOSE b\_cursor;

END LOOP;

CLOSE a\_cursor;

EXCEPTION

WHEN OTHERS THEN raise\_application\_error(-20001,'An error was encountered - '||SQLCODE||' -ERROR- '||SQLERRM);

END sp\_left\_join;

END pkg\_left\_join;