1.Create an associative array and populate it with the instructor’s full name. In other words, each row of the associative array should contain the first name, middle initial, and last name. Display this information on the screen.

**SOLUTION:**

SET SERVEROUTPUT ON

DECLARE

CURSOR instructor\_name IS

SELECT first\_name||' '||last\_name AS full\_name

FROM instructor;

TYPE full\_name\_type IS TABLE OF instructor.first\_name%TYPE

INDEX BY BINARY\_INTEGER;

full\_name\_tab full\_name\_type;

v\_counter INTEGER := 0;

BEGIN

FOR full\_name\_rec IN instructor\_name LOOP

v\_counter := v\_counter + 1;

full\_name\_tab(v\_counter) := full\_name\_rec.full\_name;

DBMS\_OUTPUT.PUT\_LINE('full\_name('||v\_counter||'): '||full\_name\_tab(v\_counter));

END LOOP;

END;

**OUTPUT:**

full\_name(1): Anca Pup

full\_name(2): Alexa Iuga

full\_name(3): Ema Pop

full\_name(4): Andrei Opra

full\_name(5): Maria Costa

2. Modify the script you just created. Instead of using an associative array, use a varray.

**SOLUTION:**

SET SERVEROUTPUT ON

DECLARE

CURSOR instructor\_name IS

SELECT first\_name||' '||last\_name AS full\_name

FROM instructor;

TYPE full\_name\_type IS VARRAY(50) OF instructor.first\_name%TYPE;

full\_name\_varray full\_name\_type := full\_name\_type();

v\_counter INTEGER := 0;

BEGIN

FOR full\_name\_rec IN instructor\_name LOOP

v\_counter := v\_counter + 1;

full\_name\_varray.EXTEND;

full\_name\_varray(v\_counter) := full\_name\_rec.full\_name;

DBMS\_OUTPUT.PUT\_LINE('full\_name('||v\_counter||'): '||full\_name\_varray(v\_counter));

END LOOP;

END;

**OUTPUT:**

full\_name(1): Anca Pup

full\_name(2): Alexa Iuga

full\_name(3): Ema Pop

full\_name(4): Andrei Opra

full\_name(5): Maria Costa

3. Modify the script you just created. Create an additional varray, and populate it with unique course numbers for the courses that each instructor teaches. Display the instructor’s name and the list of courses he or she teaches.

**SOLUTION:**

SET SERVEROUTPUT ON

DECLARE

CURSOR instructor\_name IS

SELECT instructor\_id, first\_name||' '||last\_name AS full\_name

FROM instructor;

CURSOR course\_no\_cursor(instructor\_id\_param NUMBER) IS

SELECT UNIQUE course\_no course\_identifier

FROM section

WHERE instructor\_id = instructor\_id\_param;

TYPE full\_name\_type IS VARRAY(50) OF instructor.first\_name%TYPE;

full\_name\_varray full\_name\_type := full\_name\_type();

TYPE course\_no\_type IS VARRAY(50) OF course.course\_no%TYPE;

course\_no\_varray course\_no\_type := course\_no\_type();

v\_counter\_1 INTEGER := 0;

v\_counter\_2 INTEGER := 0;

BEGIN

FOR full\_name\_rec IN instructor\_name LOOP

v\_counter\_1 := v\_counter\_1 + 1;

full\_name\_varray.EXTEND;

full\_name\_varray(v\_counter\_1) := full\_name\_rec.full\_name;

DBMS\_OUTPUT.PUT\_LINE('instructor: '||full\_name\_varray(v\_counter\_1)||' teaches: ');

v\_counter\_2 := 0;

course\_no\_varray := course\_no\_type();

FOR course\_no\_rec IN course\_no\_cursor(full\_name\_rec.instructor\_id) LOOP

v\_counter\_2 := v\_counter\_2 + 1;

course\_no\_varray.EXTEND;

course\_no\_varray(v\_counter\_2) := course\_no\_rec.course\_identifier;

DBMS\_OUTPUT.PUT\_LINE(' '||course\_no\_varray(v\_counter\_2));

END LOOP;

END LOOP;

END;

**OUTPUT:**

instructor: Anca Pup teaches:

11010

11030

instructor: Alexa Iuga teaches:

11020

11090

11030

instructor: Ema Pop teaches:

instructor: Andrei Opra teaches:

11090

11080

instructor: Maria Costa teaches:

4. Find and explain the errors in the following script:

DECLARE

TYPE varray\_type1 IS VARRAY(7) OF INTEGER;

TYPE table\_type2 IS TABLE OF varray\_type1 INDEX BY

BINARY\_INTEGER;

varray1 varray\_type1 := varray\_type1(1, 2, 3);

table2 table\_type2 := table\_type2(varray1,

varray\_type1(8, 9, 0));

BEGIN

DBMS\_OUTPUT.PUT\_LINE ('table2(1)(2): '||table2(1)(2));

FOR i IN 1..10 LOOP

varray1.EXTEND;

varray1(i) := i;

DBMS\_OUTPUT.PUT\_LINE ('varray1('||i||'): '||varray1(i));

END LOOP;

END;

SOLUTION:

Error report -

ORA-06550: line 6, column 35:

PLS-00681: named association syntax is required

ORA-06550: line 6, column 8:

PL/SQL: Item ignored

ORA-06550: line 9, column 43:

PLS-00320: the declaration of the type of this expression is incomplete or malformed

ORA-06550: line 9, column 1:

PL/SQL: Statement ignored

06550. 00000 - "line %s, column %s:\n%s"

\*Cause: Usually a PL/SQL compilation error.

ORA-01403: no data found

ORA-06512: at line 9

01403. 00000 - "no data found"

Error report -

ORA-06532: Subscript outside of limit

**SOLUTION:**

DECLARE

TYPE varray\_type1 IS VARRAY(7) OF INTEGER;

TYPE table\_type2 IS TABLE OF varray\_type1

INDEX BY BINARY\_INTEGER;

varray1 varray\_type1 := varray\_type1(1, 2, 3);

table2 table\_type2;

BEGIN

table2(1) := varray1;

table2(2) := varray\_type1(8, 9, 0);

DBMS\_OUTPUT.PUT\_LINE ('table2(1)(2): '||table2(1)(2));

FOR i IN 1..4 LOOP

varray1.EXTEND;

varray1(i) := i;

DBMS\_OUTPUT.PUT\_LINE ('varray1('||i||'): '||varray1(i));

END LOOP;

END;

**OUTPUT:**

table2(1)(2): 2

varray1(1): 1

varray1(2): 2

varray1(3): 3

varray1(4): 4