



SQL> @q1;  
Enter value for country: **IT**  
This country has MORE THAN ONE City without province listed.

PL/SQL procedure successfully completed.

no rows selected

Rollback complete.

SQL> @q1;  
Enter value for country: **RS**  
This country has NO cities listed.

PL/SQL procedure successfully completed.

no rows selected

2. Firstly, modify your table COUNTRIES by adding a new column called FLAG of fixed character length (7 characters).

Write the PL/SQL block so that will as input accept Region Id (check table REGIONS for valid values) and then it will find all Countries with empty Location information (without City listed in that country). Then it will modify blank value in the column Flag for all such countries to become **EMPTY\_n** (where **n** is **their** Region Id) .

Next, it will populate INDEX TABLE with all country names (without cities) in the alphabetical order, so that their key values increase by 5 (starting from 1). Also, display all their elements, count total number of elements in the INDEX TABLE and finally display SECOND and BEFORE THE LAST element in the table (without using literal key value).

Then, it will display message about all countries with NO city listed for the provided Region Id in the alphabetical order including their total count. Show also all modified rows from Countries table sorted by Region Id and then by country name and finally Undo your change.

You need also to code for the case: the provided Region does NOT exist.

Hint: Use Cursor For Loops where necessary and do NOT use Exception handler.

Here are the possible scenarios:

SQL> @q2;  
Enter value for region: **5**  
This region ID does NOT exist: 5

PL/SQL procedure successfully completed.

no rows selected

Rollback complete.

SQL> @q2;  
Enter value for region: **1**  
Index Table Key: 1 has a value of Argentina

Index Table Key: 6 has a value of Belgium  
 Index Table Key: 11 has a value of Denmark  
 Index Table Key: 16 has a value of Egypt  
 Index Table Key: 21 has a value of France  
 Index Table Key: 26 has a value of HongKong  
 Index Table Key: 31 has a value of Israel  
 Index Table Key: 36 has a value of Kuwait  
 Index Table Key: 41 has a value of Nigeria  
 Index Table Key: 46 has a value of Zambia  
 Index Table Key: 51 has a value of Zimbabwe

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Total number of elements in the Index Table or Number of countries with NO cities listed is: 11

Second element (Country) in the Index Table is: Belgium  
 Before the last element (Country) in the Index Table is: Zambia

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In the region 1 there is country Belgium with NO city.  
 In the region 1 there is country Denmark with NO city.  
 In the region 1 there is country France with NO city.

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Total Number of countries with NO cities listed in the Region 1 is: 3

PL/SQL procedure successfully completed.

CO	COUNTRY_NAME	REGION_ID	FLAG
BE	Belgium	1	Empty_1
DK	Denmark	1	Empty_1
FR	France	1	Empty_1
AR	Argentina	2	Empty_2
HK	HongKong	3	Empty_3
EG	Egypt	4	Empty_4
IL	Israel	4	Empty_4
KW	Kuwait	4	Empty_4
NG	Nigeria	4	Empty_4
ZM	Zambia	4	Empty_4
ZW	Zimbabwe	4	Empty_4

11 rows selected.

Rollback complete.

SQL> @q2;  
 Enter value for region: **2**  
 Index Table Key: 1 has a value of Argentina  
 Index Table Key: 6 has a value of Belgium  
 Index Table Key: 11 has a value of Denmark

Index Table Key: 16 has a value of Egypt  
Index Table Key: 21 has a value of France  
Index Table Key: 26 has a value of HongKong  
Index Table Key: 31 has a value of Israel  
Index Table Key: 36 has a value of Kuwait  
Index Table Key: 41 has a value of Nigeria  
Index Table Key: 46 has a value of Zambia  
Index Table Key: 51 has a value of Zimbabwe

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Total number of elements in the Index Table or Number of countries with NO cities listed is: 11

Second element (Country) in the Index Table is: Belgium

Before the last element (Country) in the Index Table is: Zambia

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In the region 2 there is country Argentina with NO city.

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Total Number of countries with NO cities listed in the Region 2 is: 1

PL/SQL procedure successfully completed.

CO COUNTRY_NAME	REGION_ID FLAG
BE Belgium	1 Empty_1
DK Denmark	1 Empty_1
FR France	1 Empty_1
AR Argentina	2 Empty_2
HK HongKong	3 Empty_3
EG Egypt	4 Empty_4
IL Israel	4 Empty_4
KW Kuwait	4 Empty_4
NG Nigeria	4 Empty_4
ZM Zambia	4 Empty_4
ZW Zimbabwe	4 Empty_4

11 rows selected.

Rollback complete.

PL/SQL procedure successfully completed.