

U1M6.LW.Star Schema Basics Part 1

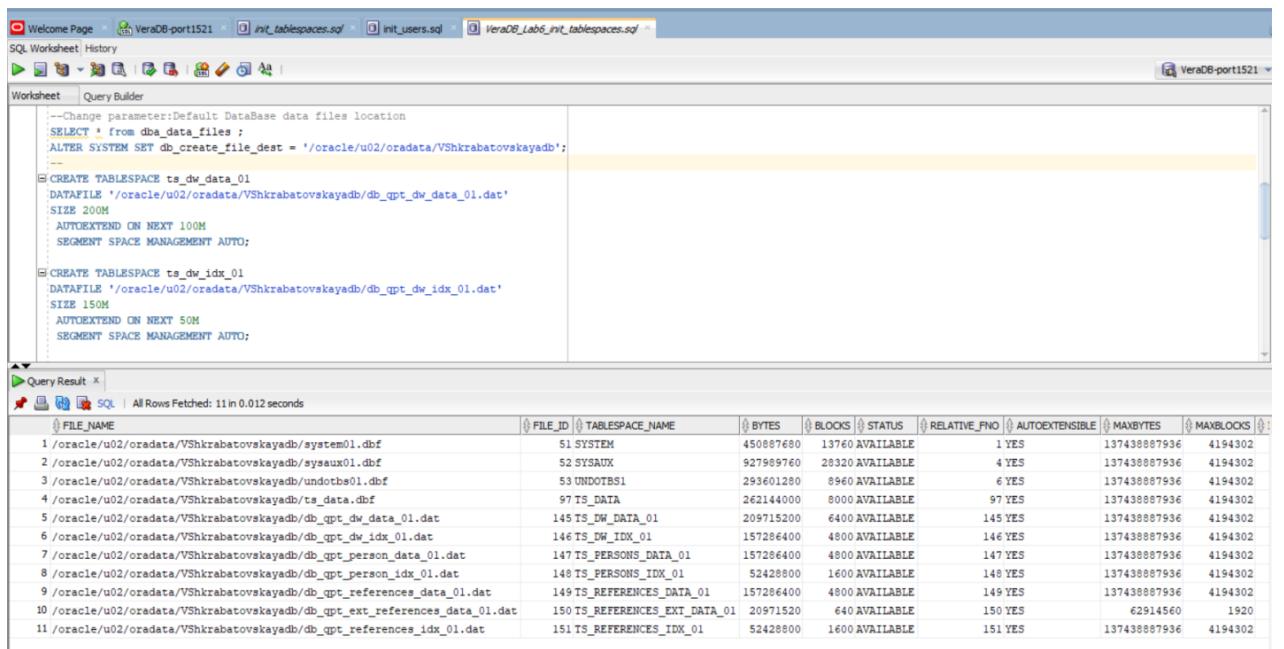
Shkrabatouskaya Vera

https://github.com/VeraShkrabatouskaya/DataMola_Data-Camping-2022

2. OLTP – Load External References – Normalization of Data

2.1. Task 01 – Install and expand load of external references T_Languages

Step1: Create TABLESPACE



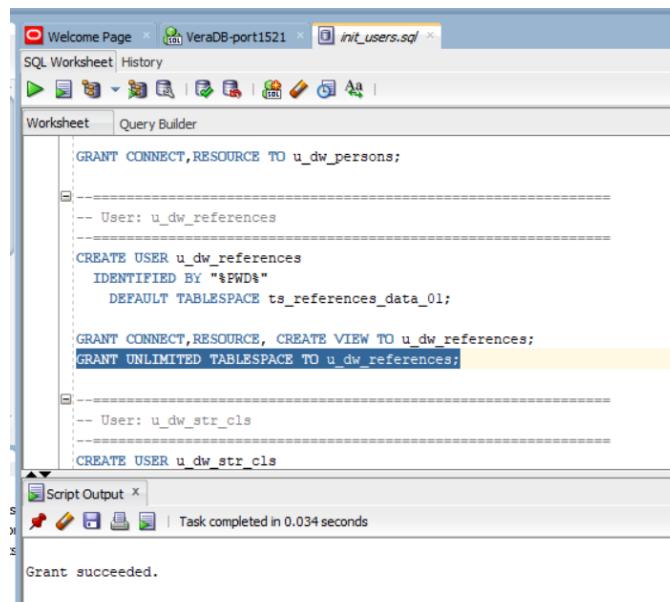
```
--Change parameter:Default DataBase data files location
SELECT * from dba_data_files;
ALTER SYSTEM SET db_create_file_dest = '/oracle/u02/oradata/VShkrabatovskayadb';
-- 
CREATE TABLESPACE ts_dw_data_01
DATAFILE '/oracle/u02/oradata/VShkrabatovskayadb/db_gpt_dw_data_01.dat'
SIZE 200M
AUTOEXTEND ON NEXT 100M
SEGMENT SPACE MANAGEMENT AUTO;

CREATE TABLESPACE ts_dw_idx_01
DATAFILE '/oracle/u02/oradata/VShkrabatovskayadb/db_gpt_dw_idx_01.dat'
SIZE 150M
AUTOEXTEND ON NEXT 50M
SEGMENT SPACE MANAGEMENT AUTO;
```

Query Result

FILE_NAME	FILE_ID	TABLESPACE_NAME	BYTES	BLOCKS	STATUS	RELATIVE_FNO	AUTOEXTENSIBLE	MAXBYTES	MAXBLOCKS
1 /oracle/u02/oradata/VShkrabatovskayadb/system01.dbf	51	SYSTEM	450887680	13760	AVAILABLE	1	YES	137438887936	4194302
2 /oracle/u02/oradata/VShkrabatovskayadb/sysaux01.dbf	52	SYSAUX	927989760	28320	AVAILABLE	4	YES	137438887936	4194302
3 /oracle/u02/oradata/VShkrabatovskayadb/undotbs01.dbf	53	UNDOTBS1	293601280	8960	AVAILABLE	6	YES	137438887936	4194302
4 /oracle/u02/oradata/VShkrabatovskayadb/ts_data.dbf	97	TS_DATA	262144000	8000	AVAILABLE	97	YES	137438887936	4194302
5 /oracle/u02/oradata/VShkrabatovskayadb/db_gpt_dw_data_01.dat	145	TS_DW_DATA_01	209715200	6400	AVAILABLE	145	YES	137438887936	4194302
6 /oracle/u02/oradata/VShkrabatovskayadb/db_gpt_dw_idx_01.dat	146	TS_DW_IDX_01	157286400	4800	AVAILABLE	146	YES	137438887936	4194302
7 /oracle/u02/oradata/VShkrabatovskayadb/db_gpt_person_data_01.dat	147	TS_PERSONS_DATA_01	157286400	4800	AVAILABLE	147	YES	137438887936	4194302
8 /oracle/u02/oradata/VShkrabatovskayadb/db_gpt_person_idx_01.dat	148	TS_PERSONS_IDX_01	52428800	1600	AVAILABLE	148	YES	137438887936	4194302
9 /oracle/u02/oradata/VShkrabatovskayadb/db_gpt_references_data_01.dat	149	TS_REFERENCES_DATA_01	157286400	4800	AVAILABLE	149	YES	137438887936	4194302
10 /oracle/u02/oradata/VShkrabatovskayadb/db_gpt_ext_references_data_01.dat	150	TS_REFERENCES_EXT_DATA_01	20971520	640	AVAILABLE	150	YES	62914560	1920
11 /oracle/u02/oradata/VShkrabatovskayadb/db_gpt_references_idx_01.dat	151	TS_REFERENCES_IDX_01	52428800	1600	AVAILABLE	151	YES	137438887936	4194302

Step2: Create USERS and provide grant unlimited tablespace



```
GRANT CONNECT,RESOURCE TO u_dw_persons;

-- User: u_dw_references
CREATE USER u_dw_references
IDENTIFIED BY "%FWD%" 
DEFAULT TABLESPACE ts_references_data_01;

GRANT CONNECT,RESOURCE, CREATE VIEW TO u_dw_references;
GRANT UNLIMITED TABLESPACE TO u_dw_references;

-- User: u_dw_str_cls
CREATE USER u_dw_str_cls
```

Script Output

Grant succeeded.

Step3: Change DIRECTORY

The screenshot shows a SQL Worksheet interface with several tabs at the top: Welcome Page, VeraDB-port1521, cu_Ing_scopes.sql, pkg_session_params - Syn.sql, and init_directories.sql. The init_directories.sql tab is active. The code in the worksheet is:

```
--Create Directory with path to External References files storage
/*=====
/* Directories: ext_references
=====
CREATE OR REPLACE DIRECTORY ext_references
AS
  '/oracle/u02/ext_references/';

GRANT READ ON DIRECTORY ext_references TO u_dw_ext_references;
GRANT WRITE ON DIRECTORY ext_references TO u_dw_ext_references;
```

Below the worksheet, a Script Output window shows the results of the execution:

```
Directory EXT_REFERENCES created.

Grant succeeded.

Grant succeeded.
```

Step4: Installing scripts

/u_dw_ext_references	Cleansing store for External References
/u_dw_references	Store of DB references objects
/u_dw_common	Store common used objects

Task Results:

Let's look at all the objects created

```
select * from all_objects where owner = UPPER('U_DW_EXT_REFERENCES')
order by OBJECT_TYPE, OBJECT_NAME;
```

The screenshot shows a Query Result window with a SQL query in the top pane:

```
select * from all_objects where owner = UPPER('U_DW_EXT_REFERENCES')
order by OBJECT_TYPE, OBJECT_NAME;
```

Below the query, the results are displayed in a table:

OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_ID	DATA_OBJECT_ID	OBJECT_TYPE	CREATED	LAST_DDL_TIME	TIMESTAMP	STATUS	TEMP
1 U_DW_EXT_REFERENCES	PKG_LOAD_EXT_REF_LANGUAGES	(null)	67642	(null)	PACKAGE	20-JUL-22 20-JUL-22	2022-07-20:15:22:33	VALID	N	
2 U_DW_EXT_REFERENCES	PKG_LOAD_EXT_REF_LANGUAGES	(null)	67641	(null)	PACKAGE BODY	20-JUL-22 20-JUL-22	2022-07-20:15:23:09	VALID	N	
3 U_DW_EXT_REFERENCES	CLS_LANGUAGES_ISO693	(null)	67636	67636	TABLE	20-JUL-22 20-JUL-22	2022-07-20:14:47:09	VALID	N	
4 U_DW_EXT_REFERENCES	CLS_LNG_MACRO2IND_ISO693	(null)	67637	67637	TABLE	20-JUL-22 20-JUL-22	2022-07-20:14:47:21	VALID	N	
5 U_DW_EXT_REFERENCES	T_EXT_LANGUAGES_ISO693	(null)	67635	67635	TABLE	20-JUL-22 20-JUL-22	2022-07-20:14:46:49	VALID	N	
6 U_DW_EXT_REFERENCES	T_EXT_LNG_MACRO2IND_ISO693	(null)	67638	67638	TABLE	20-JUL-22 20-JUL-22	2022-07-20:14:47:35	VALID	N	

```
select * from all_objects where owner = UPPER('U_DW_REFERENCES')
order by OBJECT_TYPE, OBJECT_NAME;
```

Query Result | All Rows Fetched: 38 in 0.046 seconds

OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_ID	DATA_OBJECT_ID	OBJECT_TYPE	CREATED	LAST_DDL_TIME	TIMESTAMP	STATUS	TEMPORARY
1_U_DW_REFERENCES	IDX_LNG_3C_CODE	(null)	67515	(null) INDEX	19-JUL-22 19-JUL-22	2022-07-19:13:56:48	VALID	N		
2_U_DW_REFERENCES	PK_LC_LNG_SCOPES	(null)	67527	67527 INDEX	19-JUL-22 19-JUL-22	2022-07-19:14:02:25	VALID	N		
3_U_DW_REFERENCES	PK_LC_LNG_TYPES	(null)	67531	67531 INDEX	19-JUL-22 19-JUL-22	2022-07-19:14:03:52	VALID	N		
4_U_DW_REFERENCES	PK_T_LANGUAGES	(null)	67512	67512 INDEX	19-JUL-22 19-JUL-22	2022-07-19:13:48:06	VALID	N		
5_U_DW_REFERENCES	PK_T_LNG_LINKS	(null)	67524	(null) INDEX	19-JUL-22 19-JUL-22	2022-07-19:14:01:00	VALID	N		
6_U_DW_REFERENCES	PK_T_LNG_SCOPES	(null)	67514	67514 INDEX	19-JUL-22 19-JUL-22	2022-07-19:13:54:14	VALID	N		
7_U_DW_REFERENCES	PK_T_LNG_TYPES	(null)	67521	67521 INDEX	19-JUL-22 19-JUL-22	2022-07-19:13:57:21	VALID	N		
8_U_DW_REFERENCES	PK_T_LOCALIZATIONS	(null)	67529	67529 INDEX	19-JUL-22 19-JUL-22	2022-07-19:14:03:08	VALID	N		
9_U_DW_REFERENCES	IDX_LNG_3C_CODE	P_MACROLANGUAGE	67517	67517 INDEX PARTITION	19-JUL-22 19-JUL-22	2022-07-19:13:56:48	VALID	N		
10_U_DW_REFERENCES	IDX_LNG_3C_CODE	P_SPECIAL	67518	67518 INDEX PARTITION	19-JUL-22 19-JUL-22	2022-07-19:13:56:48	VALID	N		
11_U_DW_REFERENCES	IDX_LNG_3C_CODE	P_OTHERS	67519	67519 INDEX PARTITION	19-JUL-22 19-JUL-22	2022-07-19:13:56:48	VALID	N		
12_U_DW_REFERENCES	IDX_LNG_3C_CODE	P_INDIVIDUAL	67516	67516 INDEX PARTITION	19-JUL-22 19-JUL-22	2022-07-19:13:56:48	VALID	N		
13_U_DW_REFERENCES	PK_T_LNG_LINKS	P_MACRO2INDIVID	67525	67525 INDEX PARTITION	19-JUL-22 19-JUL-22	2022-07-19:14:01:00	VALID	N		
14_U_DW_REFERENCES	SQ_LANGUAGES_T_ID	(null)	67534	(null) SEQUENCE	19-JUL-22 19-JUL-22	2022-07-19:14:05:37	VALID	N		
15_U_DW_REFERENCES	SQ_LNG_SCOPES_T_ID	(null)	67540	(null) SEQUENCE	19-JUL-22 19-JUL-22	2022-07-19:14:16:17	VALID	N		
16_U_DW_REFERENCES	SQ_LNG_TYPES_T_ID	(null)	67541	(null) SEQUENCE	19-JUL-22 19-JUL-22	2022-07-19:14:18:07	VALID	N		
17_U_DW_REFERENCES	LC_LNG_SCOPES	(null)	67526	67526 TABLE	19-JUL-22 19-JUL-22	2022-07-19:14:02:25	VALID	N		
18_U_DW_REFERENCES	LC_LNG_TYPES	(null)	67530	67530 TABLE	19-JUL-22 19-JUL-22	2022-07-19:14:03:52	VALID	N		
19_U_DW_REFERENCES	T_LANGUAGES	(null)	67507	(null) TABLE	19-JUL-22 19-JUL-22	2022-07-19:13:48:06	VALID	N		
20_U_DW_REFERENCES	T_LNG_LINKS	(null)	67522	(null) TABLE	19-JUL-22 19-JUL-22	2022-07-19:14:01:00	VALID	N		
21_U_DW_REFERENCES	T_LNG_SCOPES	(null)	67513	(null) TABLE	19-JUL-22 19-JUL-22	2022-07-19:13:54:14	VALID	N		
22_U_DW_REFERENCES	T_LNG_TYPES	(null)	67520	(null) TABLE	19-JUL-22 19-JUL-22	2022-07-19:13:57:21	VALID	N		
23_U_DW_REFERENCES	T_LOCALIZATIONS	(null)	67528	67528 TABLE	19-JUL-22 19-JUL-22	2022-07-19:14:03:08	VALID	N		

```
select * from all_objects where owner = UPPER('U_DW_COMMON')
order by OBJECT_TYPE, OBJECT_NAME;
```

Query Result | All Rows Fetched: 2 in 0.105 seconds

SELECT TABLE_NAME, OWNER
1_U_DW_COMMON PKG_SESSION_PARAMS (null)
2_U_DW_COMMON PKG_SESSION_PARAMS (null)

The following Tables and Views were created.

```
SELECT TABLE_NAME, OWNER
FROM SYS.ALL_TABLES
WHERE OWNER IN ('U_DW_EXT_REFERENCES', 'U_DW_REFERENCES', 'U_DW_COMMON')
UNION ALL
SELECT VIEW_NAME, OWNER
FROM SYS.ALL_VIEWS
WHERE OWNER IN ('U_DW_EXT_REFERENCES', 'U_DW_REFERENCES', 'U_DW_COMMON')
ORDER BY 2;
```

```
SELECT TABLE_NAME, OWNER
FROM SYS.ALL_TABLES
WHERE OWNER IN ('U_DW_EXT_REFERENCES', 'U_DW_REFERENCES', 'U_DW_COMMON')
UNION ALL
SELECT VIEW_NAME, OWNER
FROM SYS.ALL_VIEWS
WHERE OWNER IN ('U_DW_EXT_REFERENCES', 'U_DW_REFERENCES', 'U_DW_COMMON')
ORDER BY 2;
```

Query Result | All Rows Fetched: 21 in 0.611 seconds

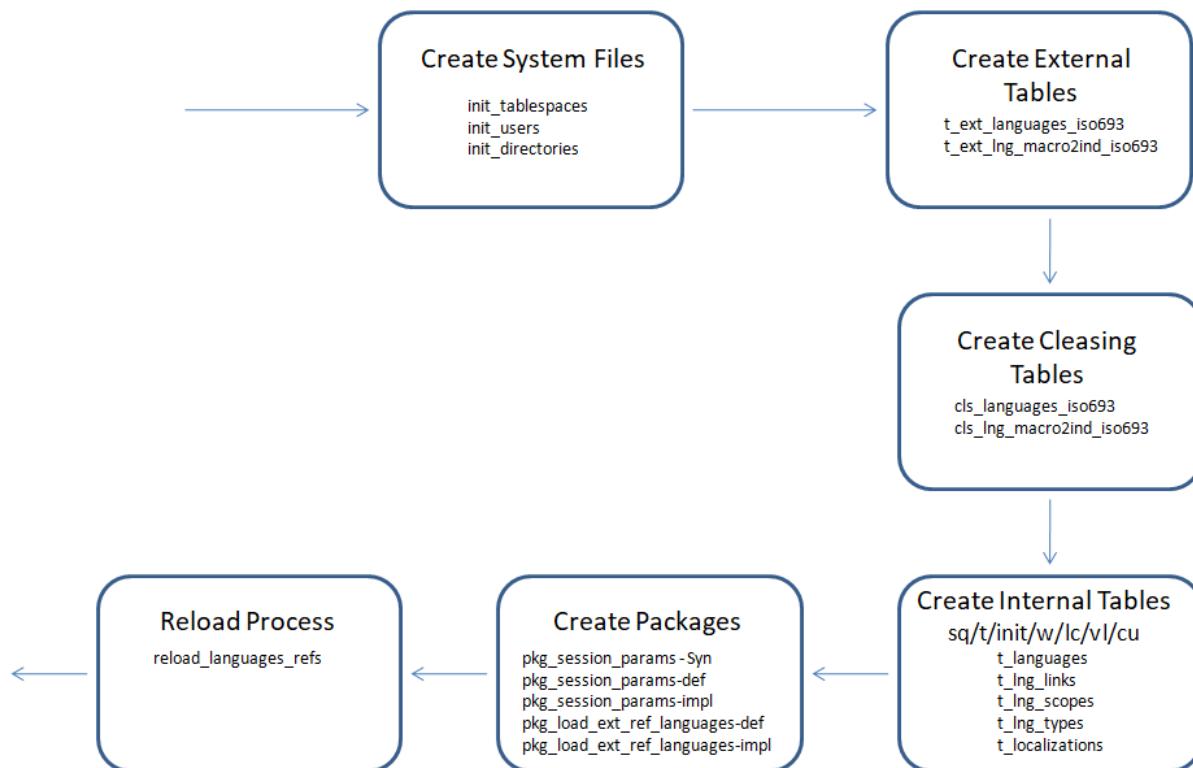
TABLE_NAME	OWNER
1_T_EXT_LANGUAGES_ISO693	U_DW_EXT_REFERENCES
2_T_EXT_LNG_MACRO2IND_ISO693	U_DW_EXT_REFERENCES
3_CLS_LNG_MACRO2IND_ISO693	U_DW_EXT_REFERENCES
4_CLS_LANGUAGES_ISO693	U_DW_EXT_REFERENCES
5_T_LNG_TYPES	U_DW_REFERENCES
6 CU LNG TYPES	U DW REFERENCES

Query Result x

All Rows Fetched: 21 in 0.611 seconds

TABLE_NAME	OWNER
1 T_EXT_LANGUAGES_ISO693	U_DW_EXT_REFERENCES
2 T_EXT_LNG_MACRO2IND_ISO693	U_DW_EXT_REFERENCES
3 CLS_LNG_MACRO2IND_ISO693	U_DW_EXT_REFERENCES
4 CLS_LANGUAGES_ISO693	U_DW_EXT_REFERENCES
5 T_LNG_TYPES	U_DW_REFERENCES
6 CU_LNG_TYPES	U_DW_REFERENCES
7 LC_LNG_SCOPES	U_DW_REFERENCES
8 T_LOCALIZATIONS	U_DW_REFERENCES
9 LC_LNG_TYPES	U_DW_REFERENCES
10 W_LOCALIZATIONS	U_DW_REFERENCES
11 CU_LNG_SCOPES	U_DW_REFERENCES
12 CU_LANGUAGES	U_DW_REFERENCES
13 W_LANGUAGES	U_DW_REFERENCES
14 W_LNG_LINKS	U_DW_REFERENCES
15 W_LNG_SCOPES	U_DW_REFERENCES
16 VL_LNG_SCOPES	U_DW_REFERENCES
17 W_LNG_TYPES	U_DW_REFERENCES
18 VL_LNG_TYPES	U_DW_REFERENCES
19 T_LNG_SCOPES	U_DW_REFERENCES
20 T_LANGUAGES	U_DW_REFERENCES
21 T_LNG_LINKS	U_DW_REFERENCES

DataFlow: Sketch Diagram of loading external References



Showing result of data on next objects:

- cu_languages

The screenshot shows a SQL worksheet interface with multiple tabs at the top: Welcome Page, VeraDB-port1521, reload_languages_refs.sql, and cu_languages.sql. The cu_languages.sql tab is active. Below the tabs is a toolbar with icons for file operations, search, and help. The main area has two tabs: Worksheet and Query Builder. The Worksheet tab is selected, displaying the following SQL code:

```
select * from U_DW_REFERENCES.cu_lng_scopes;
select * from U_DW_REFERENCES.cu_lng_types;
select * from U_DW_REFERENCES.cu_languages;
```

Below the code, it says "Fetched 150 rows in 0.052 seconds". A table is displayed with the following columns: LNG_ID, LNG_3C_CODE, LNG_2B_CODE, LNG_2T_CODE, LNG_1C_CODE, LNG_SCOPE_ID, LNG_TYPE_ID, and LNG_DESC. The data consists of 21 rows, each containing a unique ID and a language name. The LNG_DESC column includes names like "Ghotuo", "Alumu-Tesu", "Ari", "Amal", "Arbëreshë Albanian", etc.

- cu_lng_scopes

The screenshot shows a SQL worksheet interface with multiple tabs at the top: Welcome Page, VeraDB-port1521, reload_languages_refs.sql, and cu_languages.sql. The cu_languages.sql tab is active. Below the tabs is a toolbar with icons for file operations, search, and help. The main area has two tabs: Script Output and Query Result. The Query Result tab is selected, displaying the following SQL code:

```
select * from U_DW_REFERENCES.cu_lng_scopes;
select * from U_DW_REFERENCES.cu_lng_types;
select * from U_DW_REFERENCES.cu_languages;
```

Below the code, it says "All Rows Fetched: 3 in 0.032 seconds". A table is displayed with the following columns: LNG_SCOPE_ID, SRC_SCOPE_CODE, LNG_SCOPE_CODE, LNG_SCOPE_DESC, and LOCALIZATION_ID. The data consists of 3 rows, each representing a scope type: Individual, Macrolanguage, and Special.

- cu_lng_types

```
select * from U_DW_REFERENCES.cu_lng_scopes;
select * from U_DW_REFERENCES.cu_lng_types;
select * from U_DW_REFERENCES.cu_languages;
```

Script Output | Query Result | Query Result 1 | Query Result 2

SQL | All Rows Fetched: 6 in 0.018 seconds

LNG_TYPE_ID	SRC_TYPE_CODE	LNG_TYPE_CODE	LNG_TYPE_DESC	LOCALIZATION_ID
1	1 A	A	Ancient	1
2	2 C	C	Constructed	1
3	3 E	E	Extinct	1
4	4 H	H	Historical	1
5	5 L	L	Living	1
6	6 S	S	Special	1

- w_lng_links

```
select * from u_dw_references.w_lng_links;
```

Query Result

SQL | All Rows Fetched: 0 in 0.015 seconds

PARENT_LN...	CHILD_LN...	LINK_TYP...
--------------	-------------	-------------

- t_localizations

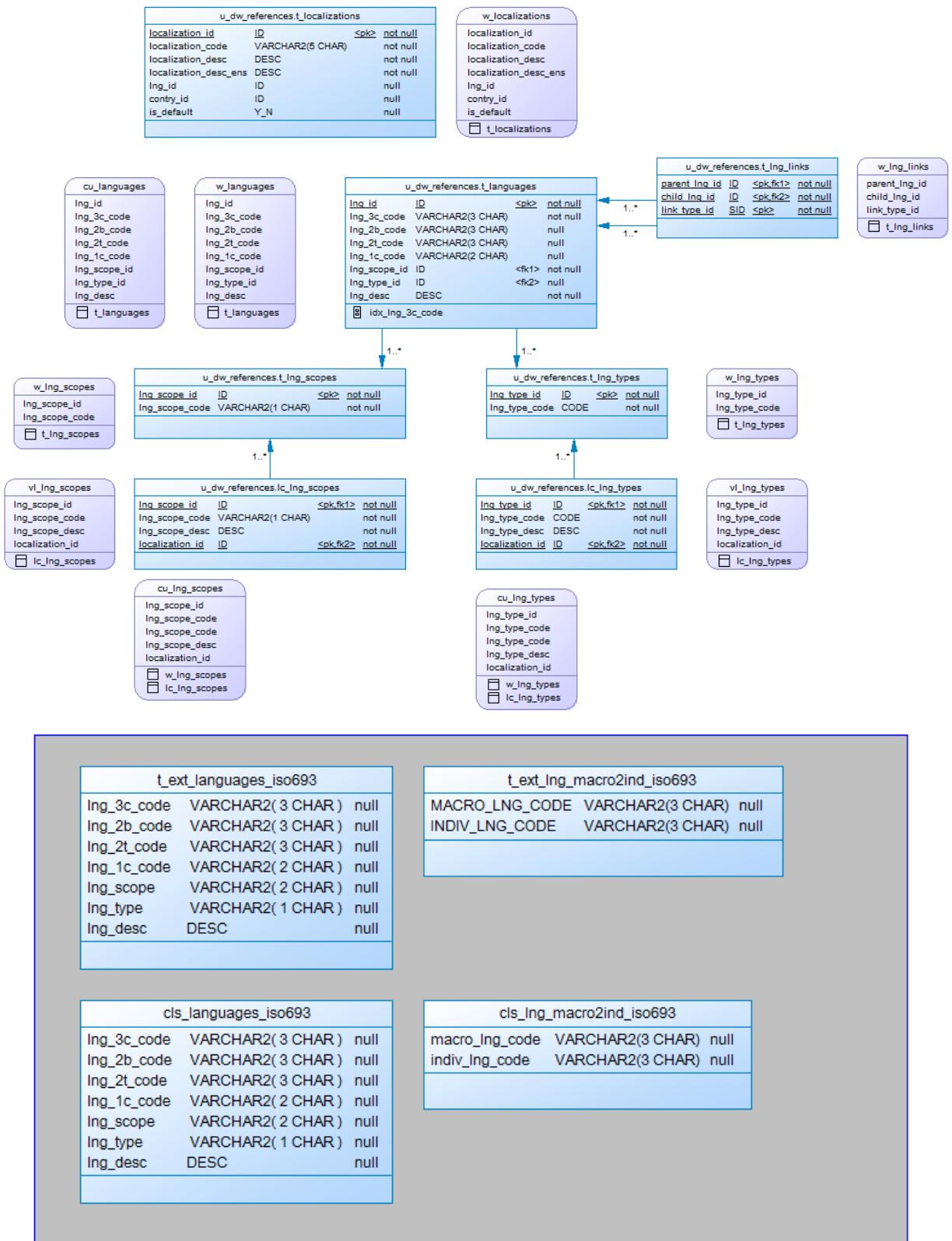
```
select * from u_dw_references.t_localizations;
```

Query Result

SQL | All Rows Fetched: 5 in 0.004 seconds

LOCALIZATION_ID	LOCALIZATION_CODE	LOCALIZATION_DESC	LOCALIZATION_DESC_ENS	LNG_ID	CONTRY_ID	IS_DEFAULT
1	-1n.a.	Not Available	Not Available	(null)	(null)	(null)
2	-2n.d.	Not Defined	Not Defined	(null)	(null)	(null)
3	1en-US	English	English	(null)	(null)	1
4	2ru-RU	Russian	Русский	(null)	(null)	(null)
5	3be-BY	Belarusian	Беларускі	(null)	(null)	(null)

The Physical Diagram of T_Languages below:



2.2. Task 02 – Create load process for External references T_Countries

Task Results:

Running file scripts from u_dw_ext_references to create external tables

The screenshot shows a SQL worksheet interface with multiple tabs at the top. The active tab is 't_ext_geo_countries2_iso3166'. The query results are displayed in a table with two columns: COUNTRY_DESC and COUNTRY_CODE. The data consists of 200 rows, each representing a country with its name and ISO code.

COUNTRY_DESC	COUNTRY_CODE
1 AFGHANISTAN	AF
2 AND ISLANDS	AX
3 ALBANIA	AL
4 ALGERIA	DZ
5 AMERICAN SAMOA	AS
6 ANDORRA	AD
7 ANGOLA	AO
8 ANGUILLA	AI
9 ANTARCTICA	AQ
10 ANTIQUA AND BARBUDA	AG
11 ARGENTINA	AR
12 ARMENIA	AM
13 ARUBA	AW
14 AUSTRALIA	AU
15 AUSTRIA	AT
16 AZERBAIJAN	AZ
17 BAHAMAS	BS
18 BAHRAIN	BH
19 BANGLADESH	BD
20 BARBADOS	BB
21 BELARUS	BY
22 BELGIUM	BE
23 BELIZE	BZ
24 BENIN	BJ

The screenshot shows a SQL worksheet interface with multiple tabs at the top. The active tab is 't_ext_geo_countries_iso3166'. The query results are displayed in a table with three columns: COUNTRY_ID, COUNTRY_DESC, and COUNTRY_CODE. The data consists of 50 rows, each representing a country with its ID, name, and ISO code.

COUNTRY_ID	COUNTRY_DESC	COUNTRY_CODE
1	4 Afghanistan	AFG
2	248 Åland Islands	ALA
3	8 Albania	ALB
4	12 Algeria	DZA
5	16 American Samoa	ASM
6	20 Andorra	AND
7	24 Angola	AGO
8	660 Anguilla	AIA
9	28 Antigua and Barbuda	ATG
10	32 Argentina	ARG
11	51 Armenia	ARM
12	533 Aruba	ABW
13	36 Australia	AUS
14	40 Austria	AUT
15	31 Azerbaijan	AZE
16	44 Bahamas	BHS
17	48 Bahrain	BHR
18	50 Bangladesh	BGD
19	52 Barbados	BRB
20	112 Belarus	BLR
21	56 Belgium	BEL
22	84 Belize	BLZ
23	204 Benin	BEN

Running file scripts from u_dw_references to create internal tables

```
Select * from u_dw_references.w_geo_types;
```

Script Output | Query Result | All Rows Fetched: 7 in 0.008 seconds

GEO_TYPE_ID	GEO_TYPE_CODE	GEO_TYPE_DESC
1	2 GEO SYSTEM	System of Specification
2	10 CONTINENT	Referene: List of All Continets
3	11 REGIONS	Referene: List of All Continets - Regions
4	12 COUNTRY	Referene: List of All Countries
5	50 GROUP SYSTEM	Grouping system of specification countries
6	51 COUNTRY GROUP	Referene: List of All Countries Groups
7	52 COUNTRY SUB GROUP	Referene: List of All Countries Sub Groups

Let's look at all the objects created

```
select * from all_objects where owner = UPPER('U_DW_EXT_REFERENCES')
order by OBJECT_TYPE, OBJECT_NAME;
```

```
select * from all_objects where owner = UPPER('U_DW_EXT_REFERENCES')
order by OBJECT_TYPE, OBJECT_NAME;
```

Script Output | Query Result | All Rows Fetched: 20 in 0.107 seconds

OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_ID	DATA_OBJECT_ID	OBJECT_TYPE	CREATED	LAST_DDL_TIME	TIMESTAMP	STATUS	TEMPORAR
1 U_DW_EXT_REFERENCES	PKG_LOAD_EXT_REF_GEOGRAPHY	(null)	67826	(null)	PACKAGE	21-JUL-22 21-JUL-22	2022-07-21:15:27:07	VALID	N	
2 U_DW_EXT_REFERENCES	PKG_LOAD_EXT_REF_LANGUAGES	(null)	67642	(null)	PACKAGE	20-JUL-22 20-JUL-22	2022-07-20:15:22:33	VALID	N	
3 U_DW_EXT_REFERENCES	PKG_LOAD_EXT_REF_GEOLOGY	(null)	67827	(null)	PACKAGE BODY	21-JUL-22 21-JUL-22	2022-07-21:15:27:48	VALID	N	
4 U_DW_EXT_REFERENCES	PKG_LOAD_EXT_REF_LANGUAGES	(null)	67641	(null)	PACKAGE BODY	20-JUL-22 20-JUL-22	2022-07-20:15:23:09	VALID	N	
5 U_DW_EXT_REFERENCES	CLS_CNTR2GROUPING_ISO3166	(null)	67733	67839	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:49:13	VALID	N	
6 U_DW_EXT_REFERENCES	CLS_CNTR2STRUCTURE_ISO3166	(null)	67734	67837	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:50:11	VALID	N	
7 U_DW_EXT_REFERENCES	CLS_CNTR_GROUPING_ISO3166	(null)	67735	67838	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:50:42	VALID	N	
8 U_DW_EXT_REFERENCES	CLS_GEO_COUNTRIES2_ISO3166	(null)	67736	67835	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:51:13	VALID	N	
9 U_DW_EXT_REFERENCES	CLS_GEO_COUNTRIES_ISO3166	(null)	67737	67834	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:52:03	VALID	N	
10 U_DW_EXT_REFERENCES	CLS_GEO_STRUCTURE_ISO3166	(null)	67738	67836	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:52:38	VALID	N	
11 U_DW_EXT_REFERENCES	CLS_LANGUAGES_ISO693	(null)	67636	67636	TABLE	20-JUL-22 20-JUL-22	2022-07-20:14:47:09	VALID	N	
12 U_DW_EXT_REFERENCES	CLS_LNG_MACRO2IND_ISO693	(null)	67637	67637	TABLE	20-JUL-22 20-JUL-22	2022-07-20:14:47:21	VALID	N	
13 U_DW_EXT_REFERENCES	T_EXT_CNTR2GROUPING_ISO3166	(null)	67727	67727	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:38:14	VALID	N	
14 U_DW_EXT_REFERENCES	T_EXT_CNTR2STRUCTURE_ISO3166	(null)	67729	67729	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:42:50	VALID	N	
15 U_DW_EXT_REFERENCES	T_EXT_CNTR_GROUPING_ISO3166	(null)	67730	67730	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:43:18	VALID	N	
16 U_DW_EXT_REFERENCES	T_EXT_GEO_COUNTRIES2_ISO3166	(null)	67731	67731	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:43:38	VALID	N	
17 U_DW_EXT_REFERENCES	T_EXT_GEO_COUNTRIES_ISO3166	(null)	67732	67732	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:46:38	VALID	N	
18 U_DW_EXT_REFERENCES	T_EXT_GEO_STRUCTURE_ISO3166	(null)	67728	67728	TABLE	21-JUL-22 21-JUL-22	2022-07-21:13:40:27	VALID	N	
19 U_DW_EXT_REFERENCES	T_EXT_LANGUAGES_ISO693	(null)	67635	67635	TABLE	20-JUL-22 20-JUL-22	2022-07-20:14:46:49	VALID	N	
20 U_DW_EXT_REFERENCES	T_EXT_LNG_MACRO2IND_ISO693	(null)	67638	67638	TABLE	20-JUL-22 20-JUL-22	2022-07-20:14:47:35	VALID	N	

```
select * from all_objects where owner = UPPER('U_DW_REFERENCES')
order by OBJECT_TYPE, OBJECT_NAME;
```

The screenshot shows a SQL worksheet interface with the following details:

- Tab Bar:** Welcome Page, VeraDB-Port1521, Lab6_task2_results.sql
- Toolbar:** Standard database management tools.
- Worksheet Tab:** Selected.
- Query:**

```
select * from all_objects where owner = UPPER('U_DW_REFERENCES')
order by OBJECT_TYPE, OBJECT_NAME;
```
- Output:**
 - Script Output: Fetched 100 rows in 0.111 seconds
 - Query Result: Shows a table with 23 rows of data.

OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_ID	DATA_OBJECT_ID	OBJECT_TYPE	CREATED	LAST_DDL_TIME	TIMESTAMP	STATUS	TEMP
1 U_DW_REFERENCES	IDX_LNG_3C_CODE	(null)	67515	(null)	INDEX	19-JUL-22 19-JUL-22	2022-07-19:13:56:48	VALID	N	
2 U_DW_REFERENCES	PK_LC_CNTN_GROUPS	(null)	67777	67777	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:46:22	VALID	N	
3 U_DW_REFERENCES	PK_LC_CNTN_GROUP_SYSTEMS	(null)	67769	67769	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:43:08	VALID	N	
4 U_DW_REFERENCES	PK_LC_CNTN_SUB_GROUPS	(null)	67785	67785	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:48:27	VALID	N	
5 U_DW_REFERENCES	PK_LC_COUNTRIES	(null)	67817	67817	INDEX	21-JUL-22 21-JUL-22	2022-07-21:15:09:29	VALID	N	
6 U_DW_REFERENCES	PK_LC_GEO_PARTS	(null)	67801	67801	INDEX	21-JUL-22 21-JUL-22	2022-07-21:15:05:43	VALID	N	
7 U_DW_REFERENCES	PK_LC_GEO_REGIONS	(null)	67809	67809	INDEX	21-JUL-22 21-JUL-22	2022-07-21:15:07:43	VALID	N	
8 U_DW_REFERENCES	PK_LC_GEO_SYSTEMS	(null)	67793	67793	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:58:59	VALID	N	
9 U_DW_REFERENCES	PK_LC_LNG_SCOPES	(null)	67527	67527	INDEX	19-JUL-22 19-JUL-22	2022-07-19:14:02:25	VALID	N	
10 U_DW_REFERENCES	PK_LC_LNG_TYPES	(null)	67531	67531	INDEX	19-JUL-22 19-JUL-22	2022-07-19:14:03:52	VALID	N	
11 U_DW_REFERENCES	PK_T_ADDRESSES	(null)	67823	67823	INDEX	21-JUL-22 21-JUL-22	2022-07-21:15:23:59	VALID	N	
12 U_DW_REFERENCES	PK_T_ADDRESS_TYPES	(null)	67821	67821	INDEX	21-JUL-22 21-JUL-22	2022-07-21:15:19:45	VALID	N	
13 U_DW_REFERENCES	PK_T_CNTN_GROUPS	(null)	67773	67773	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:45:34	VALID	N	
14 U_DW_REFERENCES	PK_T_CNTN_GROUP_SYSTEMS	(null)	67765	67765	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:41:34	VALID	N	
15 U_DW_REFERENCES	PK_T_CNTN_SUB_GROUPS	(null)	67781	67781	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:47:56	VALID	N	
16 U_DW_REFERENCES	PK_T_COUNTRIES	(null)	67813	67813	INDEX	21-JUL-22 21-JUL-22	2022-07-21:15:08:50	VALID	N	
17 U_DW_REFERENCES	PK_T_GEO_OBJECTS	(null)	67760	67760	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:35:33	VALID	N	
18 U_DW_REFERENCES	PK_T_GEO_OBJECT_LINKS	(null)	67748	(null)	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:06:41	VALID	N	
19 U_DW_REFERENCES	PK_T_GEO_PARTS	(null)	67797	67797	INDEX	21-JUL-22 21-JUL-22	2022-07-21:15:05:04	VALID	N	
20 U_DW_REFERENCES	PK_T_GEO_REGIONS	(null)	67805	67805	INDEX	21-JUL-22 21-JUL-22	2022-07-21:15:07:11	VALID	N	
21 U_DW_REFERENCES	PK_T_GEO_SYSTEMS	(null)	67789	67789	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:56:36	VALID	N	
22 U_DW_REFERENCES	PK_T_GEO_TYPES	(null)	67757	67757	INDEX	21-JUL-22 21-JUL-22	2022-07-21:14:28:18	VALID	N	
23 U_DW_REFERENCES	PK_T_LANGUAGES	(null)	67512	67512	INDEX	19-JUL-22 19-JUL-22	2022-07-19:13:48:06	VALID	N	

```
select * from all_objects where owner = UPPER('U_DW_COMMON')
order by OBJECT_TYPE, OBJECT_NAME;
```

The screenshot shows a SQL worksheet interface with the following details:

- Tab Bar:** Welcome Page, VeraDB-Port1521, Lab6_task2_results.sql
- Toolbar:** Standard database management tools.
- Worksheet Tab:** Selected.
- Query:**

```
select * from all_objects where owner = UPPER('U_DW_COMMON')
order by OBJECT_TYPE, OBJECT_NAME;
```
- Output:**
 - Script Output: All Rows Fetched: 2 in 0.099 seconds
 - Query Result: Shows a table with 2 rows of data.

OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_ID	DATA_OBJECT_ID	OBJECT_TYPE	CREATED	LAST_DDL_TIME	TIMESTAMP	STATUS	TEMPORARY	GENERATED	SEC
1 U_DW_COMMON	PKG_SESSION_PARAMS	(null)	67544	(null)	PACKAGE	19-JUL-22 21-JUL-22	2022-07-21:00:18:54	VALID	N	N	N	
2 U_DW_COMMON	PKG_SESSION_PARAMS	(null)	67545	(null)	PACKAGE BODY	19-JUL-22 21-JUL-22	2022-07-21:01:29:56	VALID	N	N	N	

The following Tables and Views were created.

```
SELECT TABLE_NAME, OWNER
FROM SYS.ALL_TABLES
WHERE OWNER IN ('U_DW_EXT_REFERENCES', 'U_DW_REFERENCES', 'U_DW_COMMON')
UNION ALL
SELECT VIEW_NAME, OWNER
FROM SYS.ALL_VIEWS
WHERE OWNER IN ('U_DW_EXT_REFERENCES', 'U_DW_REFERENCES', 'U_DW_COMMON')
ORDER BY 2;
```

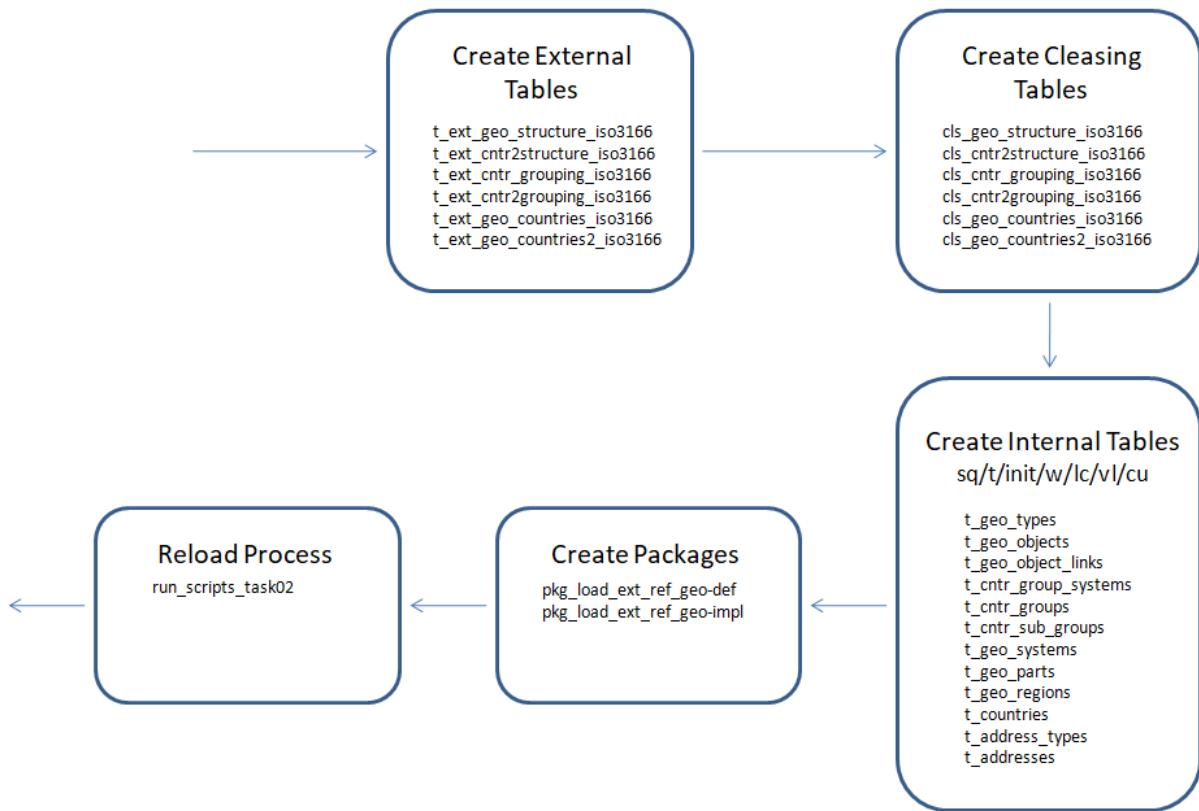
The screenshot shows a SQL worksheet interface with the following details:

- Tab Bar:** Welcome Page, VeraDB-port1521, Lab6_task2_results.sql
- Toolbar:** Includes icons for Run, Save, Undo, Redo, Find, Copy, Paste, and others.
- Worksheet Tab:** Selected, showing the executed SQL script.
- Script Content:**

```
SELECT TABLE_NAME, OWNER
FROM SYS.ALL_TABLES
WHERE OWNER IN ('U_DW_EXT_REFERENCES', 'U_DW_REFERENCES', 'U_DW_COMMON')
UNION ALL
SELECT VIEW_NAME, OWNER
FROM SYS.ALL_VIEWS
WHERE OWNER IN ('U_DW_EXT_REFERENCES', 'U_DW_REFERENCES', 'U_DW_COMMON')
ORDER BY 2;
```
- Query Result Tab:** Selected, showing the results of the executed query.
- Results:** A table with two columns: TABLE_NAME and OWNER. The data is as follows:

TABLE_NAME	OWNER
T_EXT_LANGUAGES_ISO693	U_DW_EXT_REFERENCES
T_EXT_LNG_MACRO2IND_ISO693	U_DW_EXT_REFERENCES
T_EXT_CNTR2GROUPING_ISO3166	U_DW_EXT_REFERENCES
T_EXT_GEO_STRUCTURE_ISO3166	U_DW_EXT_REFERENCES
T_EXT_CNTR2STRUCTURE_ISO3166	U_DW_EXT_REFERENCES
T_EXT_CNTR_GROUPING_ISO3166	U_DW_EXT_REFERENCES
T_EXT_GEO_COUNTRIES2_ISO3166	U_DW_EXT_REFERENCES
T_EXT_GEO_COUNTRIES_ISO3166	U_DW_EXT_REFERENCES
CLS_LANGUAGES_ISO693	U_DW_EXT_REFERENCES
CLS_LNG_MACRO2IND_ISO693	U_DW_EXT_REFERENCES
CLS_CNTR2GROUPING_ISO3166	U_DW_EXT_REFERENCES
CLS_CNTR2STRUCTURE_ISO3166	U_DW_EXT_REFERENCES
CLS_CNTR_GROUPING_ISO3166	U_DW_EXT_REFERENCES
CLS_GEO_COUNTRIES2_ISO3166	U_DW_EXT_REFERENCES
CLS_GEO_STRUCTURE_ISO3166	U_DW_EXT_REFERENCES
T_LANGUAGES	U_DW_REFERENCES
CU_COUNTRIES	U_DW_REFERENCES

DataFlow: Sketch Diagram of loading external References



Showing result of data on main objects:

- t_addresses

- t_address_types

```
select * from t_address_types;
```

- t_cntr_group_systems

GEO_ID	GRP_SYSTEM_ID
1	271

- lc_cntr_group_systems

Query Result 3 x Query Result 4 x Query Result 5 x Query Result 6 x Query Result 7 x Query Result 8 x					
SQL All Rows Fetched: 1 in 0.007 seconds					
GEO_ID	GRP_SYSTEM_ID	GRP_SYSTEM_CODE	GRP_SYSTEM_DESC	LOCALIZATION_ID	
1	271	1	MAIN	Selected Economic and other groupings	1

- t_cntr_groups

```
select * from t_cntr_groups;
```

- Ic cntr groups

Query Result 5 x Query Result 6 x Query Result 7 x Query Result 8 x Query R				
   SQL All Rows Fetched: 2 in 0.005 seconds				
GEO_ID	GROUP_ID	GROUP_CODE	GROUP_DESC	LOCALIZATION_ID
1	273	3 (null)	Unions groupings	1
2	272	2 (null)	Economic groupings	1

- t cntr sub groups

select * from t_cntr_sub_groups;

	GEO_ID	SUB_GROUP_ID
1	274	204
2	275	203
3	276	302
4	277	303
5	278	202
6	279	301
7	280	201
8	281	205

- lc_cntr_sub_groups

select * from lc_cntr_sub_groups;					
	GEO_ID	SUB_GROUP_ID	SUB_GROUP_CODE	SUB_GROUP_DESC	LOCALIZATION_ID
1	275	203 (null)	Small island developing states		1
2	274	204 (null)	Transition countries		1
3	278	202 (null)	Landlocked developing countries		1
4	281	205 (null)	Developed countries		1
5	280	201 (null)	Least developed countries		1
6	279	301 (null)	Commonwealth of Independent States		1
7	276	302 (null)	Transition countries of South-Eastern Europe		1
8	277	303 (null)	European Union		1

- t_countries

select * from t_countries;		
	GEO_ID	COUNTRY_ID
1	282	328
2	283	512
3	284	535
4	285	578
5	286	124
6	287	534
7	288	706
8	289	226
9	290	762
10	291	418
11	292	591
12	293	832
13	294	348
14	295	400
15	296	232
16	297	410
17	298	414
18	299	496
19	300	659
20	301	52
21	302	64
22	303	108
23	304	792
24	305	50

- lc_countries

select * from lc_countries;

GEO_ID	COUNTRY_ID	COUNTRY_CODE_A2	COUNTRY_CODE_A3	COUNTRY_DESC	LOCALIZATION_ID
1	453	152 CL	CHL	Chile	1
2	369	450 MG	MDG	Madagascar	1
3	520	830 (null)	(null)	Channel Islands	1
4	382	408 (null)	PRK	Democratic People's Republic of Korea	1
5	284	535 BQ	BES	Bonaire, Saint Eustatius and Saba	1
6	401	188 CR	CRI	Costa Rica	1
7	337	768 TG	TGO	Togo	1
8	432	156 CN	CHN	China	1
9	370	203 CZ	CZE	Czech Republic	1
10	296	232 ER	ERI	Eritrea	1
11	429	364 IR	IRN	Iran (Islamic Republic of)	1
12	344	430 LR	LBR	Liberia	1
13	512	484 MX	MEX	Mexico	1
14	357	642 RO	ROU	Romania	1
15	426	222 SV	SLV	El Salvador	1
16	474	233 EE	EST	Estonia	1
17	319	528 NL	NLD	Netherlands	1
18	395	76 BR	BRA	Brazil	1
19	374	104 MM	MMR	Myanmar	1
20	456	630 PR	PRI	Puerto Rico	1
21	403	288 GH	GHA	Ghana	1
22	358	442 LU	LUX	Luxembourg	1
23	497	175 YT	MYT	Mayotte	1

- t_geo_object_links

select * from t_geo_object_links;

PARENT_GEO_ID	CHILD_GEO_ID	LINK_TYPE_ID
1	242	243
2	242	244
3	242	245
4	242	246
5	242	247
6	242	248
7	243	261
8	243	266
9	243	267
10	244	250
11	244	251
12	244	254
13	244	259
14	244	262
15	245	260
16	246	252
17	246	253
18	246	255
19	246	257
20	246	263
21	247	249
22	247	256

- t_geo_objects

select * from t_geo_objects;

Query Result 11 x | Query Result 12 x | Query Result 13 x |

SQL | Fetched 50 rows in 0.007 seconds

	GEO_ID	GEO_TYPE_ID	GEO_CODE_ID
1	242	2	1
2	243	10	419
3	244	10	2
4	245	10	21
5	246	10	142
6	247	10	9
7	248	10	150
8	249	11	57
9	250	11	14
10	251	11	15
11	252	11	143
12	253	11	34
13	254	11	11
14	255	11	30
15	256	11	54
16	257	11	145
17	258	11	155
18	259	11	17
19	260	11	21
20	261	11	5

- t_geo_parts

select * from t_geo_parts;

Query Result 12 x | Query Result 13 x |

SQL | All Rows Fetched: 6 in 0.007 seconds

	GEO_ID	PART_ID
1	243	419
2	244	2
3	245	21
4	246	142
5	247	9
6	248	150

- lc_geo_parts

select * from lc_geo_parts;

Query Result 13 x | Query Result 14 x | Query Result 15 x | Query Result 16 x | Query Result 17 x

SQL | All Rows Fetched: 6 in 0.003 seconds

GEO_ID	PART_ID	PART_CODE	PART_DESC	LOCALIZATION_ID
1	247	9 (null)	Oceania	1
2	245	21 (null)	Northern America	1
3	244	2 (null)	Africa	1
4	248	150 (null)	Europe	1
5	246	142 (null)	Asia	1
6	243	419 (null)	Latin America and the Caribbean	1

- t_geo_regions

select * from t_geo_regions;

Query Result 14 x | Query Result 15 x | Query Result 16 x | Query Result 17 x

SQL | All Rows Fetched: 22 in 0.004

GEO_ID	REGION_ID
1	249
2	250
3	251
4	252
5	253
6	254
7	255
8	256
9	257
10	258
11	259
12	260
13	261
14	262
15	263
16	264
17	265

- lc_geo_regions

select * from lc_geo_regions;

Query Result 15 x | Query Result 16 x | Query Result 17 x | Query Result 18 x

SQL | All Rows Fetched: 22 in 0.004 seconds

	GEO_ID	REGION_ID	REGION_CODE	REGION_DESC	LOCALIZATION_ID
1	250	14 (null)	Eastern Africa	1	
2	262	18 (null)	Southern Africa	1	
3	264	151 (null)	Eastern Europe	1	
4	256	54 (null)	Melanesia	1	
5	254	11 (null)	Western Africa	1	
6	261	5 (null)	South America	1	
7	260	21 (null)	Northern America	1	
8	253	34 (null)	Southern Asia	1	
9	249	57 (null)	Micronesia	1	
10	259	17 (null)	Middle Africa	1	
11	268	39 (null)	Southern Europe	1	
12	270	61 (null)	Polynesia	1	
13	269	154 (null)	Northern Europe	1	
14	257	145 (null)	Western Asia	1	
15	266	29 (null)	Caribbean	1	
16	267	13 (null)	Central America	1	
17	255	30 (null)	Eastern Asia	1	
18	263	35 (null)	South-Eastern Asia	1	
19	258	155 (null)	Western Europe	1	
20	265	53 (null)	Australia and New Zealand	1	
21	251	15 (null)	Northern Africa	1	
22	252	143 (null)	Central Asia	1	

- t_geo_systems

select * from t_geo_systems;

Query Result 16 x | Query Result 17 x | Query Result 18 x

SQL | All Rows Fetched: 1 in 0.003s

	GEO_ID	GEO_SYSTEM_ID
1	242	1

- lc_geo_systems

select * from lc_geo_systems;

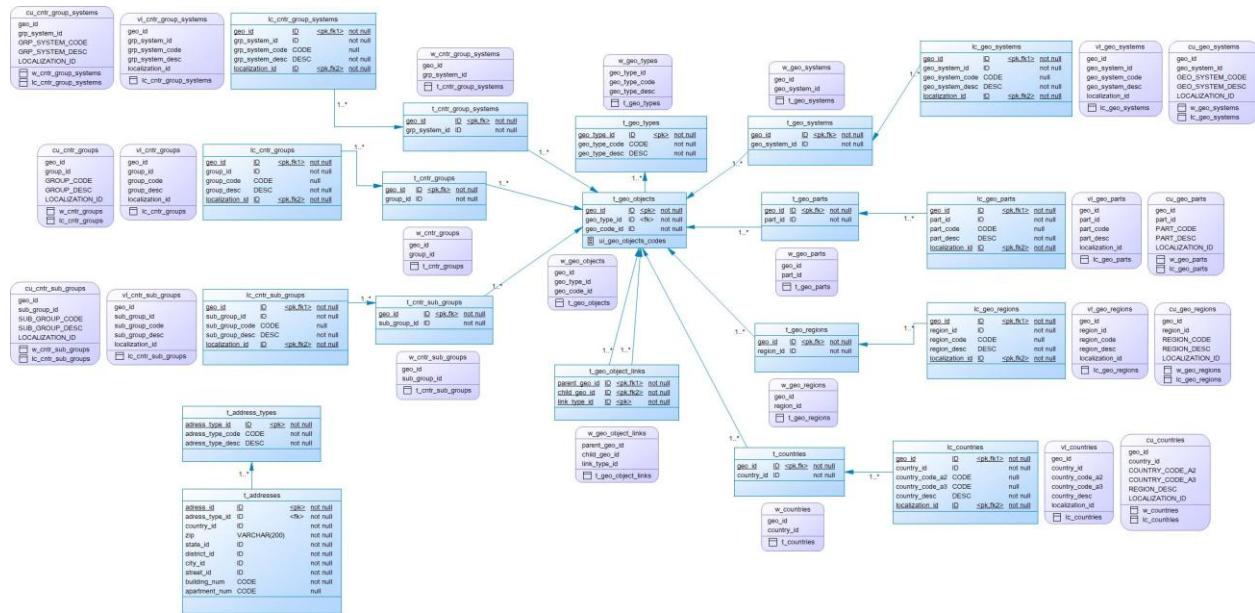
GEO_ID	GEO_SYSTEM_ID	GEO_SYSTEM_CODE	LOCALIZATION_ID
1	242	WORLD	The UN World structure

- t_geo_types

select * from t_geo_types;

GEO_TYPE_ID	GEO_TYPE_CODE	GEO_TYPE_DESC
1	2 GEO SYSTEM	System of Specification
2	10 CONTINENT	Referene: List of All Continets
3	11 REGIONS	Referene: List of All Continets - Regions
4	12 COUNTRY	Referene: List of All Countries
5	50 GROUP SYSTEM	Grouping system of specification countries
6	51 COUNTRY GROUP	Referene: List of All Countries Groups
7	52 COUNTRY SUB GROUP	Referene: List of All Countries Sub Groups

The Physical Diagram of T_Countries



t_ext_geo_countries_iso3166		
country_id	NUMBER(10,0)	null
county_desc	DESC	null
country_code	VARCHAR2(30 CHAR)	null

t_ext_geo_structure_iso3166		
child_code	NUMBER(10,0)	null
parent_code	NUMBER(10,0)	null
structure_desc	DESC	null
structure_level	DESC	null

t_ext_cntr_grouping_iso3166		
child_code	NUMBER(10,0)	null
parent_code	NUMBER(10,0)	null
group_desc	DESC	null
group_level	DESC	null

cls_geo_countries_iso3166		
country_id	NUMBER(10,0)	null
country_desc	DESC	null
country_code	CODE	null

cls_geo_structure_iso3166		
child_code	NUMBER(10,0)	null
parent_code	NUMBER(10,0)	null
structure_desc	DESC	null
structure_level	DESC	null

cls_cntr_grouping_iso3166		
child_code	NUMBER(10,0)	null
parent_code	NUMBER(10,0)	null
group_desc	DESC	null
group_level	DESC	null

```
t_ext_geo_countries2_iso3166
country_desc DESC          null
country_code VARCHAR2(30 CHAR) null
```

```
t_ext_cntr2structure_iso3166  
country_id      NUMBER(10,0)  null  
county_desc     DESC         null  
structure_code  NUMBER(10,0)  null  
structure_desc  DESC         null
```

```
t_ext_cntr2grouping_iso3166  
country_id    NUMBER(10,0)  null  
county_desc   DESC        null  
group_code    NUMBER(10,0)  null  
group_desc   DESC        null
```

```
cls_geo_countries2_iso3166
country_desc DESC null
country_code CODE null
```

cls_cntr2structure_iso3166		
country_id	NUMBER(10,0)	null
county_desc	DESC	null
structure_code	NUMBER(10,0)	null
structure_desc	DESC	null