Oracle
Version 12c

Data Dictionary

Enabling Objectives

After completing this chapter, in the next 90 minutes you will be able to :

- Describe at least ten data dictionary objects in Oracle

Key Topics

- Using Data dictionary

Data Dictionary

Data Dictionary

- Known as System Catalogue.

- Repository of all the meta-data relevant to the objects stored in the database.

- Set of read only tables and views.

- Used by the DBA for monitoring database performance, audits and optimization.

Data Dictionary Overview

"user" tables	**"all" tables**	**"dba" tables and "v$" views**
user_objects	all_objects	("dba" and "v$" require DBA privileges)
user_tables	all_tables	
user_views	all_views	
user_sequences	all_sequences	
user_constraints	all_constraints	
user_cons_columns	all_cons_columns	
user_indexs	all_indexs	
user_ind_columns	all_ind_columns	
user_sys_privs	all_col_privs	
user_col_privs		
user_users		
user_ts_quotas		

Data Dictionary tables prefixed with:

- User

- All

- DBA

- V$

Data Dictionary

Example

- ALL_OBJECTS : Describes all the objects assessable to the current user

- DBA_OBJECTS : Describes all the objects in the database

- USER_OBJECTS : Describes all objects owned by current user

Data Dictionary

Example:

- desc all_objects;

Column	Description
OWNER	Owner of the object
OBJECT_NAME	Name of the object
OBJECT_ID	Dictionary number of the object
OBJECT_TYPE	Type of the Object
CREATED	Timestamp for the creation of the object
STATUS	Status of the object (valid, invalid or N/A)

Data Dictionary

Example:

- ALL_TABLES :Describes all relational tables accessible to current user

- DBA_TABLES :Describes all relational tables in the database.

- USER_TABLES :Describes the relational tables owned by the current user.

Example

- desc all_tables;

Column	Description
OWNER	Owner of the table
TABLE_NAME	Name of the table
TABLESPACE_NAME	Name of the table space containing the table
NUM_ROWS	Number of rows in the table
TABLE_LOCK	Indicates whether table locking is enabled or disabled
NESTED	Indicates whether a table is nested or not

Example

- ALL_VIEWS :Describes all views accessible to current user

- DBA_VIEWS :Describes all views in the database

- USER_VIEWS :Describes the views owned by the current user.

Data Dictionary

Example

- desc all_views;

Column	Description
OWNER	Table owner
VIEW_NAME	Name of the view
TEXT_LENGTH	Length of the view text
TEXT	View text

Data Dictionary

Example

- ALL_UPDATABLE COLUMNS : Describes all columns in a view that are updatable by the current user

- DBA_UPDATABLE_COLUMNS : Describes all columns in a view that are updatable by the database administrator

- USER_UPDATABLE COLUMNS : Describes all columns owned by the current user that are in view and are updatable by the current user

Data Dictionary

Example

- desc all_updatable_columns;

Column	Description
OWNER	Table owner
TABLE_NAME	Table name
COLUMN_NAME	Column name
UPDATABLE	Indicates whether the column is updatable
INSERTABLE	Indicates whether the column is inserted
DELETABLE	Indicates whether the column is deleted

Example

- ALL_CONSTRAINTS :Describes all constraint definition on tables accessible to current user

- DBA_CONSTRAINTS :Describes all constraint definition in the database

- USER_CONSTRAINTS: Describes the constraint definitions on tables in the current user's schema.

Data Dictionary

Example

- desc all_constraints;

Column	Description
OWNER	Owner of the constraint definition
CONSTRAINT_NAME	Name of the constraint definition
CONSTRAINT_TYPE	Type of constraint
TABLE_NAME	Table or view with constraint
SEARCH_CONDITION	Text of search condition for a check constraint
STATUS	Whether constraint is ENABLED or DISABLED
LAST_CHANGE	When the constraint was last ENABLED or DISABLED

Example

- ALL_CONS_COLUMNS :Information about accessible columns in constraint definition

- DBA_CONS_COLUMNS :Information about all the columns in constraint definition

- USER_CONS_COLUMNS : Information about columns in constraint definitions on tables in the current user's schema

Data Dictionary

Example

- desc all_cons_columns;

Column	Description
OWNER	Owner of the constraint definition
CONSTRAINT_NAME	Name of the constraint definition
TABLE_NAME	Name of the table with constraint definition
COLUMN_NAME	Name associated with column in the constraint definition
POSITION	Position of column in table definition

Data Dictionary

- ALL_INDEXES : Describes indexes on tables accessible to current user

- DBA_INDEXES : Describes all indexes in the database

- USER_INDEXES : : Describes the indexes owned by the current user.

Data Dictionary

Example

- desc all_indexes;

Column	Description
OWNER	Owner of the index
INDEX_NAME	Name of the index
INDEX_TYPE	Type of index
TABLE_OWNER	Owner of the indexed object
TABLE_NAME	Name of the indexed object
UNIQUENESS	Indicates whether index is UNIQUE or NONUNIQUE
NUM_ROWS	Number of rows in the index

- ALL_IND_COLUMNS : Describes indexed columns on tables accessible to current user

- DBA_IND_COLUMNS : Describes indexed columns on all tables in the database

- USER_COLUMNS : Describes the indexed columns owned by the current user and indexed columns on tables owned by the current user

Data Dictionary

Example

- desc all_ind_columns;

Column	Description
INDEX_OWNER	Owner of the index
INDEX_NAME	Name of the index
TABLE_OWNER	Owner of the indexed object
TABLE_NAME	Name of the indexed object
COLUMN_NAME	Name of the indexed column
COLUMN_POSITION	Position of column within the index

- ALL_SEQUENCES : Describes all sequences accessible to current user

- DBA_SEQUENCES : Describes all sequences in the database

- USER_SEQUENCES : Describes sequences owned by the current user

Data Dictionary

Example

- desc all sequences;

Column	Description
SEQUENCE_OWNER	Name of the owner of the sequence
SEQUENCE_NAME	Name of the sequence
MIN_VALUE	Minimum value of the sequence
MAX_VALUE	Maximum value of the sequence
INCREMENT_BY	Value by which sequence is incremented
ORDER_FLAG	Sequence numbers generated in order
LAST_NUMBER	Last sequence number written to disk or last number placed in the sequence cache

Data Dictionary

- DBA_SYS_PRIVS : Describes system privileges granted to users and roles

- USER_SYS_PRIVS : Lists system privileges granted to the current user

Column	Description
GRANTEE	Grantee name, user, or role receiving the grant
USERNAME	Name of the current user
PRIVILEGE	System privilege
ADMIN_OPTION	Grant was with the ADMIN option

- USER_USERS: Describes the current user.

- desc user_users;

Column	Description
USER_NAME	Name of the current user
USER_ID	Id number of the user
ACCOUNT_STATUS	Indicates if the account is expired, locked or unlocked
LOCK_DATE	Date the account was locked
EXPIRY_DATE	Date of expiration of the account
DEFAULT_TABLESPACE	Default tablespace for data

Practice Check

Which of the following data dictionary tables can be queried by the DBA to find the list of indexes along with the associated columns?

    a. dba_indexes

    b. user_ind_columns

    c. dba_ind_columns

Practice Check

Which of the following data dictionary tables can be queried by a user to get information on foreign keys of a table?

    a. all_constraints

    b. all_cons_columns

    c. all_ind_columns

RECAP

In this chapter we have learnt how to:

- Describe data dictionary objects.

You have successfully completed -
Data Dictionary