

Practice: Using Annotations in Oracle Database 23ai

Practice Target

In this practice, you will learn how to use the new ANNOTATIONS clause in Oracle Database 23ai to add, update, and query annotations on schema objects. You will annotate tables, views, indexes, and columns using both key-value and name-only styles.

Practice Overview

In high level, you will perform the following tasks:

1. **Create annotations with different types on tables, views, indexes, and columns**
2. **Modify and remove annotations**
3. **Query annotations**

Creating Annotations on Tables, Views, Indexes, and Columns

In this section, you will add annotations to schema objects using the correct DDL statements.

1. Open **SQL Developer** and connect to the PDB as **HR**.
2. Create sample objects:

```
CREATE TABLE dept_demo (
    dept_id      NUMBER PRIMARY KEY,
    dept_name VARCHAR2(100)
);

CREATE VIEW dept_view AS SELECT * FROM
dept_demo;

CREATE INDEX dept_name_idx ON dept_demo(dept_name);
```

3. Add a key-value annotation to the table:

```
ALTER TABLE dept_demo
  ANNOTATIONS (ADD Purpose 'Stores department data');
```

4. Add a name-only annotation to the view:

```
ALTER VIEW dept_view
  ANNOTATIONS (ADD user_accessible);
```

5. Add a key-value annotation to the index:

```
ALTERINDEXdept_name_idx
  ANNOTATIONS (ADD Metadata
'{"indexed_column":"dept_name","purpose":"search"}');
```

6. Add annotations to columns (key-value and name-only):

```
ALTER TABLE dept_demo
  MODIFY (dept_name ANNOTATIONS (ADD Description 'Department full name'));

ALTER TABLE dept_demo
  MODIFY (dept_id ANNOTATIONS (ADD identifier));
```

Modifying and Dropping Annotations

Use ALTER...ANNOTATIONSto update or remove existing annotations.

7. Modify a table annotation:

```
ALTER TABLE dept_demo  
  ANNOTATIONS (SecurityLevel 'Internal');
```

8. Drop an annotation from the index:

```
ALTERINDEXdept_name_idx ANNOTATIONS (DROP  
  Metadata);
```

9. Drop a column annotation:

```
ALTER TABLE dept_demo  
  MODIFY (dept_name ANNOTATIONS (DROP Description));
```

Querying Annotations

Use the USER_ANNOTATIONS_USAGEdictionary view to list the annotations created in the schema.

10. View all annotations in your schema:

```
SELECT OBJECT_NAME,  
  OBJECT_TYPE,  
  COLUMN_NAME,  
  ANNOTATION_NAME,  
  ANNOTATION_VALUE  
FROM USER_ANNOTATIONS_USAGE;
```

11. As a cleanup, drop the testing table and view.

```
DROP VIEW dept_view;  
DROP TABLE hr.dept_demo PURGE;
```