Database Programming with SQL
14-3: Managing Constraints
Practice Activities

Objectives
- List four different functions that the ALTER statement can perform on constraints
- Write ALTER TABLE statements to add, drop, disable, and enable constraints
- Name a business function that would require a DBA to drop, enable, and/or disable a constraint or use the CASCADE syntax
- Query the data dictionary for USER_CONSTRAINTS and interpret the information returned

Vocabulary
Identify the vocabulary word for each definition below.

DISABLE CONSTRAINT	To deactivate an integrity constraint
CASCADE clause	Disables dependent integrity constraints
ALTER TABLE	To add, modify, or drop columns from a table
ENABLE CONSTRAINT	To activate an integrity constraint currently disabled
DROP CONSTRAINT	Removes a constraint from a table
DROP COLUMN	Allows user to delete a column from a table
CASCADE CONSTRAINTS	Defines the actions the database server takes when a user attempts to delete or update a key to which existing foreign keys point

Try It / Solve It

Using Oracle Application Express, click the SQL Workshop tab in the menu bar. Click the Object Browser and verify that you have a table named copy_d_clients and a table named copy_d_events. If you don't have these tables in your schema, create them before completing the exercises below. Here is how the original tables are related. The d_clients table has a primary key client_number. This has a primary-key constraint and it is referenced in the foreign-key constraint on the d_events table.

1. What are four functions that an ALTER statement can perform on constraints?

> ADD (uses modify clause to add not null on a column though)
> · DROP
> · ENABLE/DISABLE

2. Since the tables are copies of the original tables, the integrity rules are not passed onto the new tables; only the column datatype definitions remain. You will need to add a PRIMARY KEY constraint to the copy_d_clients table. Name the primary key copy_d_clients_pk . What is the syntax you used to create the PRIMARY KEY constraint to the copy_d_clients.table?

ALTER TABLE copy_d_clients
ADD CONSTRAINT copy_d_clt_client_number_pk PRIMARY KEY (client_number);

SELECT *
FROM user_constraints

3. Create a FOREIGN KEY constraint in the copy_d_events table. Name the foreign key copy_d_events_fk. This key references the copy_d_clients table client_number column. What is the syntax you used to create the FOREIGN KEY constraint in the copy_d_events table?

ALTER TABLE copy_d_events
ADD CONSTRAINT copy_d_eve_client_number_fk FOREIGN KEY (client_number) REFERENCES copy_d_clients (client_number) ENABLE;

4. Use a SELECT statement to verify the constraint names for each of the tables. Note that the tablenames must be capitalized.

SELECT constraint_name, constraint_type, table_name
FROM user_constraints
WHERE table_name = UPPER('copy_d_events') ;

   a. The constraint name for the primary key in the copy_d_clients table is COPY_D_CLT_CLIENT_NUMBER_PK

   b. The constraint name for the foreign key in the copy_d_events table is COPY_D_EVE_CLIENT_NUMBER_FK .

5. Drop the PRIMARY KEY constraint on the copy_d_clients table. Explain your results.

ALTER TABLE copy_d_clients
DROP CONSTRAINT COPY_D_CLT_CLIENT_NUMBER_PK ;

6. Add the following event to the copy_d_events table. Explain your results.

ID	NAME	EVENT_DATE	DESCRIPTION	COST	VENUE_ID	PACKAGE_CODE	THEME_CODE	CLIENT_NUMBER
140	Cline Bas Mitzvah	15-Jul-2004	Church and Private Home formal	4500	105	87	77	7125

INSERT INTO copy_d_events(client_number,id,name,event_date,description,cost,venue_id,package_code,theme_code)
VALUES(7125,140,'Cline Bas Mitzvah',TO_DATE('15-Jul-2004','dd-Mon-yyyy'),'Church and Private Home formal',4500,105,87,77);

7. Create an ALTER TABLE query to disable the primary key in the copy_d_clients table. Then add the values from #6 to the copy_d_events table. Explain your results.

ALTER TABLE copy_d_clients
DISABLE CONSTRAINT COPY_D_CLT_CLIENT_NUMBER_PK ;

8. Repeat question 6: Insert the new values in the copy_d_events table. Explain your results.

INSERT INTO copy_d_events(client_number,id,name,event_date,description,cost,venue_id,package_code,theme_code)
VALUES(7125,140,'Cline Bas Mitzvah',TO_DATE('15-Jul-2004','dd-Mon-yyyy'),'Church and Private Home formal',4500,105,87,77);

9. Enable the primary-key constraint in the copy_d_clients table. Explain your results.

ALTER TABLE copy_d_clients   ENABLE CONSTRAINT COPY_D_CLT_CLIENT_NUMBER_PK ;

10. If you wanted to enable the foreign-key column and reestablish the referential integrity between these two tables, what must be done?

2)ALTER TABLE copy_d_events
ENABLE CONSTRAINT COPY_D_EVE_CLIENT_NUMBER_FK;

1.DELETE FROM copy_d_events WHERE client_number NOT IN (SELECT client_number FROM copy_d_clients);

11. Why might you want to disable and then re-enable a constraint?

Generally to make bulk operations fast, where my input data is diligently sanitized and I am sure, it is safe to save some time in this clumsy process.

12. Query the data dictionary for some of the constraints that you have created. How does the data dictionary identify each constraint type?

Queries are same as in point 2,3, 4 above.
I can check value of CONSTRAINT_TYPE in all_constraints/user_constraints view.
·   C - Check constraint
Sub-case - if I see SEARCH_CONDITION something like "FIRST_NAME" IS NOT NULL , its a NOT NULL constraint.
·   P - Primary key
·   R - Referential integrity (fk)
·   U - Unique key