

Section 14 Lesson 1: Database Transactions

Try It / Solve It

1. Define the COMMIT, ROLLBACK, and SAVEPOINT statements as they relate to data transactions.

COMMIT as it relates to transactions represents the point in time where the user has made all the changes he/she wants to have logically grouped together in order to save the work and make changes permanent.

ROLLBACK as it relates to transactions enables the user to discard changes, and all pending changes, made to the database.

SAVEPOINT as it relates to transactions creates a marker in a transaction, which divides the transaction into smaller pieces.

2. What data will be committed after the following statements are issued?

```
INSERT INTO R values (5, 6);  
SAVEPOINT my_savepoint_1;  
INSERT INTO R values (7, 8);  
SAVEPOINT my_savepoint_2;  
INSERT INTO R values (9, 10);  
ROLLBACK TO my_savepoint_1;  
INSERT INTO R values (11, 12);  
COMMIT;
```

The values (5,6) and (11,12) will be committed.

3. Construct a SQL statement for the DJs on Demand D_SONGS table that deletes the song "All These Years," inserts a new Country song called 'Happy Birthday Sunshine' by "The Sunsets" with a duration of 4 min and an ID = 60. Make sure that all data can be recovered before any changes to the table are made.

```
SAVEPOINT my_savepoint_1;  
DELETE FROM d_songs  
WHERE title = 'All These Years';  
SAVEPOINT my_savepoint_2;  
INSERT INTO d_songs  
VALUES (60, 'Happy Birthday Sunshine', '4 min', 'The Sunsets', 88);  
SAVEPOINT my_savepoint_3;
```

4. Write an SQL statement that will issue an automatic commit.

```
CREATE TABLE auto_commit_table  
AS (SELECT *  
FROM walls_table);
```

5. Give two examples of businesses other than banks that rely on transaction control processes. Describe why each business needs transaction processing control.

Online cloud-storage businesses make a profit off of offering transaction control processes. If your files are mass-deleted (per client-side error), you are able to retrieve your files on a back-up provided you pay an extra fee.

Another business that relies on transaction control are retailers who often roll back item prices to specific sales periods. Another reason they rely on transaction control is schedule management. Having tentative schedules and schedule changes makes it easier to undo and save changes to the schedule before the changes become permanent.