Database Programming with SQL

18-1: Database Transactions

Practice Activities

Objectives

- Define the COMMIT, ROLLBACK, and SAVEPOINT statements as they relate to data transactions
- List three advantages of COMMIT, ROLLBACK, and SAVEPOINT statements
- Explain why it is important, from a business perspective, to be able to control the flow of transaction processing

Vocabulary

Identify the vocabulary word for each definition below

	Ends the current transaction by discarding all pending data changes
	Enables the user to discard changes made to the database
	Creates a marker in a transaction, which divides the transaction into smaller pieces
	guarantees a consistent view of the data by all users at all times
	Mechanisms that prevent destructive interaction between transactions accessing the same resource that can be granted to the user
	a collection of DML statements that form a logical unit of work

Try It / Solve It

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

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;
```

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.

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

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