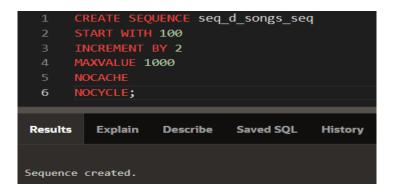
## Database Programming with SQL

## 16-1: Working with Sequences

1. Using CREATE TABLE AS subquery syntax, create a seq\_d\_songs table of all the columns in the DJs on Demand database table d\_songs. Use the SELECT \* in the subquery to make sure that you have copied all of the columns.



2. Because you are using copies of the original tables, the only constraints that were carried over were the NOT NULL constraints. Create a sequence to be used with the primary-key column of the seq\_d\_songs table. To avoid assigning primary-key numbers to these tables that already exist, the sequence should start at 100 and have a maximum value of 1000. Have your sequence increment by 2 and have NOCACHE and NOCYCLE. Name the sequence seq\_d\_songs\_seq.



3. Query the USER\_SEQUENCES data dictionary to verify the seq\_d\_songs\_seq SEQUENCE settings.



4. Insert two rows into the seq\_d\_songs table. Be sure to use the sequence that you created for the ID column. Add the two songs shown in the graphic.

ID	TITLE	DURATION	ARTIST	TYPE_CODE
	Island Fever	5 min	Hawaiian	22
			Islanders	
	Castle of Dreams	4 min	The Wanderers	77



5. Write out the syntax for seq\_d\_songs\_seq to view the current value for the sequence. Use the DUAL table. (Oracle Application Developer will not run this query.)



- 6. What are three benefits of using SEQUENCEs?
  - Unique Identifier
  - Automatic Value Generation
  - Efficiency
- 7. What are the advantages of caching sequence values?
  - Performance Improvement
  - Reduced Disk I/O
  - Faster Transactions

- 8. Name three reasons why gaps may occur in a sequence?
  - Rollback of Transactions
  - Manual Sequence Adjustments
  - Sequence Caching

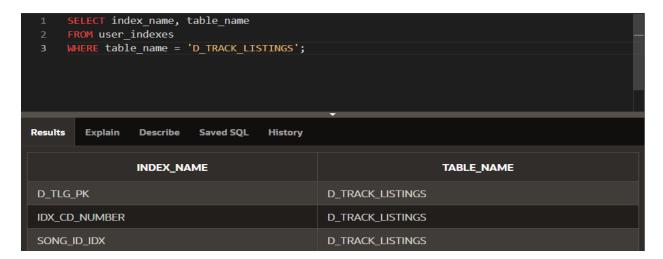
## 16-2: Indexes and Synonyms

- 1. What is an index and what is it used for?
  - At the expense of more space and poorer performance for data update oper ations (INSERT, UPDATE, DELETE), an index is a database item that sp eeds up data retrieval operations on a table.

It functions similarly to a book index, allowing you to locate the page num ber for a specific topic without having to look through the entire book. Because they offer fast access to rows, indexes are used to expedite the ret rieval of rows from a table.

For columns that are commonly used in JOIN conditions, ORDER BY clauses, and WHERE clauses, they are especially helpful.

- 2. What is a ROWID, and how is it used?
  - A database table's rows are uniquely identified by their ROWIDs. It indicates where the row is physically located in the database. Oracle uses ROWIDs internally to swiftly and effectively identify rows.
  - SELECT ROWID, first\_name, last\_name FROM employees WHERE ROWID = 'AAADzVAAEAAAAFkAAB';
- 3. When will an index be created automatically?
  - Oracle automatically generates a unique index in order to impose unique c onstraints or primary keys on a table.
  - When a cluster with indexed columns is created.
  - When query results are stored in a materialized view.
- 4. Create a nonunique index (foreign key) for the DJs on Demand column (cd\_number) in the D\_TRACK\_LISTINGS table. Use the Oracle Application Developer SQL Workshop Data Browser to confirm that the index was created.



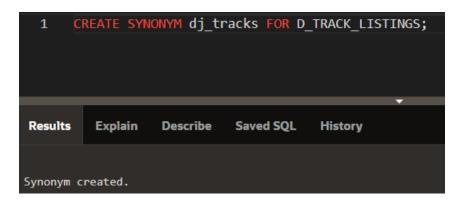
5. Use the join statement to display the indexes and uniqueness that exist in the data dictionary for the DJs on Demand D SONGS table.



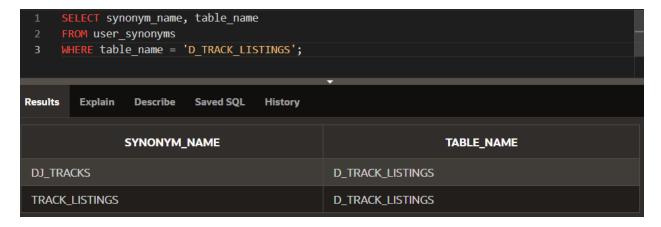
6. Use a SELECT statement to display the index\_name, table\_name, and uniqueness from the data dictionary USER\_INDEXES for the DJs on Demand D\_EVENTS table.



7. Write a query to create a synonym called dj\_tracks for the DJs on Demand d track listings table.



- 8. Create a function-based index for the last\_name column in DJs on Demand D\_PARTNERS table that makes it possible not to have to capitalize the table name for searches. Write a SELECT statement that would use this index.
  - CREATE INDEX idx\_last\_name\_lower ON D\_PARTNERS (LOWER(last\_name));
- 9. Create a synonym for the D\_TRACK\_LISTINGS table. Confirm that it has been created by querying the data dictionary.



10. Drop the synonym that you created in question 9.

