```
mysql> DELIMITER //
mysql>
mysql> CREATE PROCEDURE GetTopSongsByPlaysCursor(IN topN INT)
    -> BEGIN
    ->     DECLARE done INT DEFAULT FALSE;
    ->     DECLARE song_id_val INT;
    ->     DECLARE song_name_val VARCHAR(255);
    ->     DECLARE genre_val VARCHAR(255);
    ->     DECLARE no_of_plays_val INT;
    ->
    ->     DECLARE curSongs CURSOR FOR
    ->         SELECT song_id, song_name, genre, no_of_plays
    ->         FROM songs
    ->         ORDER BY no_of_plays DESC
    ->         LIMIT topN;
    ->
    ->     DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = TRUE;
    ->
    ->     OPEN curSongs;
    ->
    ->     read_loop: LOOP
    ->         FETCH curSongs INTO song_id_val, song_name_val, genre_val, no_of_plays_val;
    ->
    ->         IF done THEN
    ->             LEAVE read_loop;
    ->         END IF;
    ->
    ->SELECT CONCAT('Song ID: ', song_id_val, ', Song Name: ', song_name_val, ', Genre: ', genre_val, ', Plays: ',
no_of_plays_val)
         AS SongInfo;
    ->     END LOOP;
    ->
    ->     CLOSE curSongs;
    -> END //
Query OK, 0 rows affected (0.05 sec)

mysql>
mysql> DELIMITER ;
mysql> CALL GetTopSongsByPlaysCursor(10);
+-----------------------------------------------------+
| SongInfo                                            |
+-----------------------------------------------------+
| Song ID: 5, Song Name: Song 5, Genre: Jazz, Plays: 200 |
+-----------------------------------------------------+
1 row in set (0.01 sec)

+-----------------------------------------------------+
| SongInfo                                            |
+-----------------------------------------------------+
| Song ID: 9, Song Name: Song 9, Genre: R&B, Plays: 170 |
+-----------------------------------------------------+
1 row in set (0.02 sec)

+-----------------------------------------------------+
| SongInfo                                            |
+-----------------------------------------------------+
| Song ID: 2, Song Name: Song 2, Genre: Rock, Plays: 150 |
+-----------------------------------------------------+
1 row in set (0.03 sec)

+------------------------------------------------------+
| SongInfo                                             |
+------------------------------------------------------+
| Song ID: 10, Song Name: Song 10, Genre: Reggae, Plays: 140 |
+------------------------------------------------------+
1 row in set (0.04 sec)

+------------------------------------------------------+
| SongInfo                                             |
```

```
+-----------------------------------------------------------+
| Song ID: 8, Song Name: Song 8, Genre: Classical, Plays: 130 |
+-----------------------------------------------------------+
1 row in set (0.06 sec)

+-----------------------------------------------------------+
| SongInfo                                                  |
+-----------------------------------------------------------+
| Song ID: 3, Song Name: Song 3, Genre: Hip Hop, Plays: 120 |
+-----------------------------------------------------------+
1 row in set (0.07 sec)

+-----------------------------------------------------------+
| SongInfo                                                  |
+-----------------------------------------------------------+
| Song ID: 7, Song Name: Song 7, Genre: Country, Plays: 110 |
+-----------------------------------------------------------+
1 row in set (0.08 sec)

+----------------------------------------------------------+
| SongInfo                                                 |
+----------------------------------------------------------+
| Song ID: 6, Song Name: Song 6, Genre: Blues, Plays: 90 |
+----------------------------------------------------------+
1 row in set (0.09 sec)

+-----------------------------------------------------------+
| SongInfo                                                  |
+-----------------------------------------------------------+
| Song ID: 4, Song Name: Song 4, Genre: Electronic, Plays: 80 |
+-----------------------------------------------------------+
1 row in set (0.10 sec)

Query OK, 0 rows affected (0.12 sec)
================================================================================================

mysql> DELIMITER //
mysql>
mysql> CREATE PROCEDURE GetSongCountByGenreCursor(IN genreName VARCHAR(255), OUT songCount INT)
    -> BEGIN
    ->     DECLARE done INT DEFAULT FALSE;
    ->     DECLARE genre_val VARCHAR(255);
    ->     DECLARE count_val INT;
    ->
    ->     DECLARE curGenres CURSOR FOR
    ->         SELECT genre, COUNT(*) as count
    ->         FROM songs
    ->         GROUP BY genre;
    ->
    ->     DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = TRUE;
    ->
    ->     OPEN curGenres;
    ->
    ->     read_loop: LOOP
    ->         FETCH curGenres INTO genre_val, count_val;
    ->
    ->         IF done THEN
    ->             LEAVE read_loop;
    ->         END IF;
    ->
    ->         IF genre_val = genreName THEN
    ->             SET songCount = count_val;
    ->         END IF;
    ->     END LOOP;
    ->
    ->     CLOSE curGenres;
    -> END //
Query OK, 0 rows affected (0.02 sec)
```

```
mysql>
mysql> DELIMITER ;
mysql> CALL GetSongCountByGenreCursor('Pop', @songCount);
Query OK, 0 rows affected (0.02 sec)

mysql> SELECT @songCount;
+------------+
| @songCount |
+------------+
|       NULL |
+------------+
1 row in set (0.00 sec)

mysql> CALL GetSongCountByGenreCursor('Classical', @songCount);
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT @songCount;
+------------+
| @songCount |
+------------+
|          1 |
+------------+
1 row in set (0.00 sec)
```

==========

```
mysql> DELIMITER //
mysql>
mysql> CREATE PROCEDURE GetLatestSongByGenre()
    -> BEGIN
    ->     DECLARE done INT DEFAULT FALSE;
    ->     DECLARE genre_val VARCHAR(255);
    ->     DECLARE song_name_val VARCHAR(255);
    ->     DECLARE release_date_val DATE;
    ->
    ->     DECLARE curGenres CURSOR FOR
    ->         SELECT s.genre, s.song_name, s.release_date
    ->         FROM songs s
    ->         JOIN (
    ->             SELECT genre, MAX(release_date) AS latest_release
    ->             FROM songs
    ->             GROUP BY genre
    ->         ) t ON s.genre = t.genre AND s.release_date = t.latest_release;
    ->
    ->     DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = TRUE;
    ->
    ->     OPEN curGenres;
    ->
    ->     read_loop: LOOP
    ->         FETCH curGenres INTO genre_val, song_name_val, release_date_val;
    ->
    ->         IF done THEN
    ->             LEAVE read_loop;
    ->         END IF;
    ->
    ->SELECT CONCAT('Genre: ', genre_val, ', Latest Song: ', song_name_val, ', Release Date: ', release_date_val)
        AS LatestSongInfo;
    ->     END LOOP;
    ->
    ->     CLOSE curGenres;
    -> END //
Query OK, 0 rows affected (0.02 sec)

mysql>
mysql> DELIMITER ;
mysql> CALL GetLatestSongByGenre();
+-----------------------------------------------------------+
| LatestSongInfo                                            |
+-----------------------------------------------------------+
| Genre: Rock, Latest Song: Song 2, Release Date: 2022-01-02 |
```

```
+-----------------------------------------------------------+
1 row in set (0.01 sec)

+-------------------------------------------------------------+
| LatestSongInfo                                              |
+-------------------------------------------------------------+
| Genre: Hip Hop, Latest Song: Song 3, Release Date: 2022-01-03 |
+-------------------------------------------------------------+
1 row in set (0.04 sec)

+---------------------------------------------------------------+
| LatestSongInfo                                                |
+---------------------------------------------------------------+
| Genre: Electronic, Latest Song: Song 4, Release Date: 2022-01-04 |
+---------------------------------------------------------------+
1 row in set (0.08 sec)

+-------------------------------------------------------------+
| LatestSongInfo                                              |
+-------------------------------------------------------------+
| Genre: Jazz, Latest Song: Song 5, Release Date: 2022-01-05 |
+-------------------------------------------------------------+
1 row in set (0.10 sec)

+-------------------------------------------------------------+
| LatestSongInfo                                              |
+-------------------------------------------------------------+
| Genre: Blues, Latest Song: Song 6, Release Date: 2022-01-06 |
+-------------------------------------------------------------+
1 row in set (0.12 sec)

+-------------------------------------------------------------+
| LatestSongInfo                                              |
+-------------------------------------------------------------+
| Genre: Country, Latest Song: Song 7, Release Date: 2022-01-07 |
+-------------------------------------------------------------+
1 row in set (0.13 sec)

+---------------------------------------------------------------+
| LatestSongInfo                                                |
+---------------------------------------------------------------+
| Genre: Classical, Latest Song: Song 8, Release Date: 2022-01-08 |
+---------------------------------------------------------------+
1 row in set (0.15 sec)

+-------------------------------------------------------------+
| LatestSongInfo                                              |
+-------------------------------------------------------------+
| Genre: R&B, Latest Song: Song 9, Release Date: 2022-01-09 |
+-------------------------------------------------------------+
1 row in set (0.17 sec)

+-------------------------------------------------------------+
| LatestSongInfo                                              |
+-------------------------------------------------------------+
| Genre: Reggae, Latest Song: Song 10, Release Date: 2022-01-10 |
+-------------------------------------------------------------+
1 row in set (0.19 sec)

Query OK, 0 rows affected (0.21 sec)
```