```
mysql> SELECT * FROM ratings ORDER BY category LIMIT 5;
+----+----------+--------+
| id | category | rating |
+----+----------+--------+
|  1 |        1 |    4.5 |
|  5 |        1 |    3.2 |
|  4 |        2 |    3.5 |
|  3 |        2 |    3.7 |
|  6 |        2 |    3.5 |
+----+----------+--------+
```

In each case, the rows are sorted by the `ORDER BY` column, which is all that is required by the SQL standard.

If it is important to ensure the same row order with and without `LIMIT`, include additional columns in the `ORDER BY` clause to make the order deterministic. For example, if `id` values are unique, you can make rows for a given `category` value appear in `id` order by sorting like this:

```
mysql> SELECT * FROM ratings ORDER BY category, id;
+----+----------+--------+
| id | category | rating |
+----+----------+--------+
|  1 |        1 |    4.5 |
|  5 |        1 |    3.2 |
|  3 |        2 |    3.7 |
|  4 |        2 |    3.5 |
|  6 |        2 |    3.5 |
|  2 |        3 |    5.0 |
|  7 |        3 |    2.7 |
+----+----------+--------+

mysql> SELECT * FROM ratings ORDER BY category, id LIMIT 5;
+----+----------+--------+
| id | category | rating |
+----+----------+--------+
|  1 |        1 |    4.5 |
|  5 |        1 |    3.2 |
|  3 |        2 |    3.7 |
|  4 |        2 |    3.5 |
|  6 |        2 |    3.5 |
+----+----------+--------+
```

For a query with an `ORDER BY` or `GROUP BY` and a `LIMIT` clause, the optimizer tries to choose an ordered index by default when it appears doing so would speed up query execution. Prior to MySQL 8.0.21, there was no way to override this behavior, even in cases where using some other optimization might be faster. Beginning with MySQL 8.0.21, it is possible to turn off this optimization by setting the `optimizer_switch` system variable's `prefer_ordering_index` flag to `off`.

Example: First we create and populate a table `t` as shown here:

```
# Create and populate a table t:

mysql> CREATE TABLE t (
    ->     id1 BIGINT NOT NULL,
    ->     id2 BIGINT NOT NULL,
    ->     c1 VARCHAR(50) NOT NULL,
    ->     c2 VARCHAR(50) NOT NULL,
    ->  PRIMARY KEY (id1),
    ->  INDEX i (id2, c1)
    -> );

# [Insert some rows into table t - not shown]
```

Verify that the `prefer_ordering_index` flag is enabled: