This join type indicates that the Index Merge optimization is used. In this case, the `key` column in the output row contains a list of indexes used, and `key_len` contains a list of the longest key parts for the indexes used. For more information, see Section 8.2.1.3, “Index Merge Optimization”.

- `unique_subquery`

  This type replaces `eq_ref` for some `IN` subqueries of the following form:

  ```
  value IN (SELECT primary_key FROM single_table WHERE some_expr)
  ```

  `unique_subquery` is just an index lookup function that replaces the subquery completely for better efficiency.

- `index_subquery`

  This join type is similar to `unique_subquery`. It replaces `IN` subqueries, but it works for nonunique indexes in subqueries of the following form:

  ```
  value IN (SELECT key_column FROM single_table WHERE some_expr)
  ```

- `range`

  Only rows that are in a given range are retrieved, using an index to select the rows. The `key` column in the output row indicates which index is used. The `key_len` contains the longest key part that was used. The `ref` column is `NULL` for this type.

  `range` can be used when a key column is compared to a constant using any of the `=`, `<>`, `>`, `>=`, `<`, `<=`, `IS NULL`, `<=>`, `BETWEEN`, `LIKE`, or `IN()` operators:

  ```
  SELECT * FROM tbl_name
    WHERE key_column = 10;

  SELECT * FROM tbl_name
    WHERE key_column BETWEEN 10 and 20;

  SELECT * FROM tbl_name
    WHERE key_column IN (10,20,30);

  SELECT * FROM tbl_name
    WHERE key_part1 = 10 AND key_part2 IN (10,20,30);
  ```

- `index`

  The `index` join type is the same as `ALL`, except that the index tree is scanned. This occurs two ways:

  - If the index is a covering index for the queries and can be used to satisfy all data required from the table, only the index tree is scanned. In this case, the `Extra` column says `Using index`. An index-only scan usually is faster than `ALL` because the size of the index usually is smaller than the table data.
  - A full table scan is performed using reads from the index to look up data rows in index order. `Uses index` does not appear in the `Extra` column.

  MySQL can use this join type when the query uses only columns that are part of a single index.

- `ALL`

  A full table scan is done for each combination of rows from the previous tables. This is normally not good if the table is the first table not marked `const`, and usually *very* bad in all other cases. Normally, you