index file much smaller. When you index a `BLOB` or `TEXT` column, you *must* specify a prefix length for the index. For example:

```
CREATE TABLE test (blob_col BLOB, INDEX(blob_col(10)));
```

Prefixes can be up to 767 bytes long for `InnoDB` tables that use the `REDUNDANT` or `COMPACT` row format. The prefix length limit is 3072 bytes for `InnoDB` tables that use the `DYNAMIC` or `COMPRESSED` row format. For MyISAM tables, the prefix length limit is 1000 bytes.

Note

Prefix limits are measured in bytes, whereas the prefix length in `CREATE TABLE`, `ALTER TABLE`, and `CREATE INDEX` statements is interpreted as number of characters for nonbinary string types (`CHAR`, `VARCHAR`, `TEXT`) and number of bytes for binary string types (`BINARY`, `VARBINARY`, `BLOB`). Take this into account when specifying a prefix length for a nonbinary string column that uses a multibyte character set.

If a search term exceeds the index prefix length, the index is used to exclude non-matching rows, and the remaining rows are examined for possible matches.

For additional information about index prefixes, see Section 13.1.15, “CREATE INDEX Statement”.

FULLTEXT Indexes

`FULLTEXT` indexes are used for full-text searches. Only the `InnoDB` and `MyISAM` storage engines support `FULLTEXT` indexes and only for `CHAR`, `VARCHAR`, and `TEXT` columns. Indexing always takes place over the entire column and column prefix indexing is not supported. For details, see Section 12.10, “Full-Text Search Functions”.

Optimizations are applied to certain kinds of `FULLTEXT` queries against single `InnoDB` tables. Queries with these characteristics are particularly efficient:

- `FULLTEXT` queries that only return the document ID, or the document ID and the search rank.
- `FULLTEXT` queries that sort the matching rows in descending order of score and apply a `LIMIT` clause to take the top N matching rows. For this optimization to apply, there must be no `WHERE` clauses and only a single `ORDER BY` clause in descending order.
- `FULLTEXT` queries that retrieve only the `COUNT(*)` value of rows matching a search term, with no additional `WHERE` clauses. Code the `WHERE` clause as `WHERE MATCH(text) AGAINST ('other_text')`, without any `> 0` comparison operator.

For queries that contain full-text expressions, MySQL evaluates those expressions during the optimization phase of query execution. The optimizer does not just look at full-text expressions and make estimates, it actually evaluates them in the process of developing an execution plan.

An implication of this behavior is that `EXPLAIN` for full-text queries is typically slower than for non-full-text queries for which no expression evaluation occurs during the optimization phase.

`EXPLAIN` for full-text queries may show `Select tables optimized away` in the `Extra` column due to matching occurring during optimization; in this case, no table access need occur during later execution.

Spatial Indexes

You can create indexes on spatial data types. `MyISAM` and `InnoDB` support R-tree indexes on spatial types. Other storage engines use B-trees for indexing spatial types (except for `ARCHIVE`, which does not support spatial type indexing).