**Inverted Index Basics: An inverted index maps terms to the parts of a document where they occur. It consists of a dictionary of terms and postings lists, where each list contains document identifiers (IDs) indicating where each term appears.**

**Create Inverted Index: Form a dictionary and postings lists where each term points to the documents containing it.**

**Storage**: Typically, the dictionary is kept in memory while the postings lists are stored on disk to manage large volumes of data effectively​

Standard heuristic: Process terms in order of increasing document frequency to minimize the total work.

**Example of Commercial Boolean Searching: Westlaw**:

* Westlaw, a large legal search service, used Boolean search as the default method until 2005, despite adding ranked free text querying in 1992.
* Example queries:
  + Legal theories on preventing trade secret disclosure: "trade secret" /s disclos! /s prevent /s employe!
  + Requirements for disabled access to workplaces: disab! /p access! /s work-site work-place (employment /3 place)
  + Host responsibility for drunk guests: host! /p (responsib! liab!) /p (intoxicat! drunk!) /p guest

or example, a 3-gram index for castle includes $ca, cas, ast, stl, tle, le$.

**Edit Distance:**

* The edit distance (or Levenshtein distance) between two strings is the minimum number of single-character edits (insertions, deletions, or substitutions) required to change one string into the other.

The document explains the dynamic programming approach to calculate edit distances between a query term and dictionary terms.

Optimization techniques, such as limiting the search space using prefix trees (tries) or filtering based on term frequency, are discussed to enhance performance.