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Project 3 B+ tree index manager Design

The project mainly focus on the implementation of the B+ tree index manager which the index will store data entries in the form <key, rid> pair in a separate index file that “points to” the data file for the efficiency when run the queries.

In the constructor, the first part was using a try-catch block to check to see if the corresponding index file exists. If so, open the file, if not, it will throw the FileNotFoundException and create the index file and insert entries for every tuple in the base relation using FileScan class. If the index file already exists for the corresponding attribute, but values in metapage(relationName, attribute byte offset, attribute type etc.) do not match with values received through constructor parameters, the constructor will throw the BadIndexInfoException. Other than that, EndOfFileException will be thrown when use the FileScan to scan the file and reaches the end of the file. The destructor, will not throw any exceptions, any initialized scan, flush index file, after unpinning any pinned pages, from the buffer manager will be ended here.