SIM GLOBAL EDUCATION

UNIVERSITY OF WOLLONGONG AUSTRALIA

ISIT312 – Big Data Management

Indexing

Sionggo Japit

sjapit@uow.edu.au

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Some Terminology

- **Index Unique Scans** : This scan returns, at most, a single rowid. Oracle performs a unique scan if a statement contains a UNIQUE or a PRIMARY KEY constraint that guarantees that only a single row is accessed.
- **Index Range Scans**: An index range scan is a common operation for accessing selective data. It can be bounded (bounded on both sides) or unbounded (on one or both sides). Data is returned in the ascending order of index columns. Multiple rows with identical values are sorted in ascending order by rowid.

Some Terminology

- **Full Scans**: A full index scan eliminates a sort operation, because the data is ordered by the index key. It reads the blocks singly. A full scan is used in any of the following situations:
  - ORDER BY
  - A query that requires a sort merge join
  - GROUP BY

Some Terminology

- **Fast Full Index Scans**: Fast full index scans are an alternative to a full table scan **when the index contains all the columns that are needed for the query**, and at least one column in the index key has the NOT NULL constraint. A fast full scan accesses the data in the index itself, without accessing the table. It cannot be used to eliminate a sort operation, because the data is not ordered by the index key. It reads the entire index using multiblock reads, unlike a full index scan, and can be parallelized.

Some Terminology

- **Index Joins**: An index join is a hash join of several indexes that together contain all the table columns that are referenced in the query. If an index join is used, then no table access is needed, because all the relevant column values can be retrieved from the indexes. An index join cannot be used to eliminate a sort operation.