SQL Execution Plan Data Retrieval Operators

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What are query plans?

- Directs the DBMS on how to complete the query
- If correctly optimized, it will reduce the cost of the query (CPU time, Table Reads, Memory used, etc)
- Most of the cost should not be in the data retrieval operators
- Determining the query plan is ultimately up to the computer

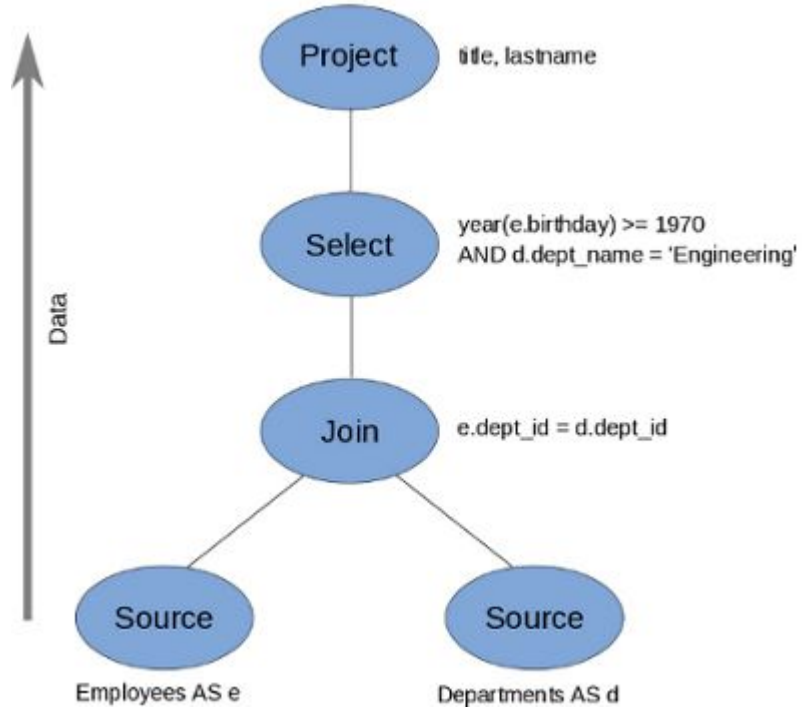

Table Scan

- Unordered Data
- Reads through entire table
  - Not bad if table is small
  - Not bad if table is temporary or read infrequently
  - Not bad if table changes frequently and is read infrequently
- Can cause problems further down the line due to needing to sort
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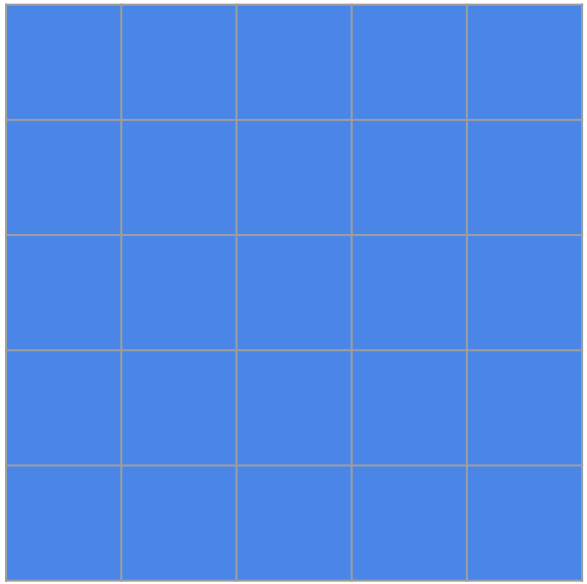
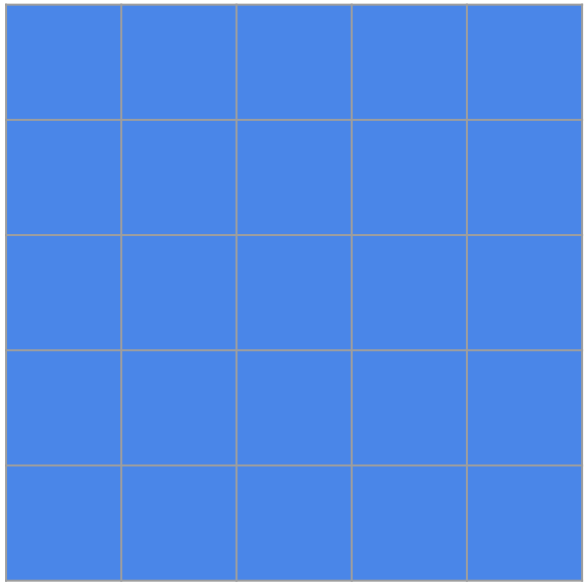


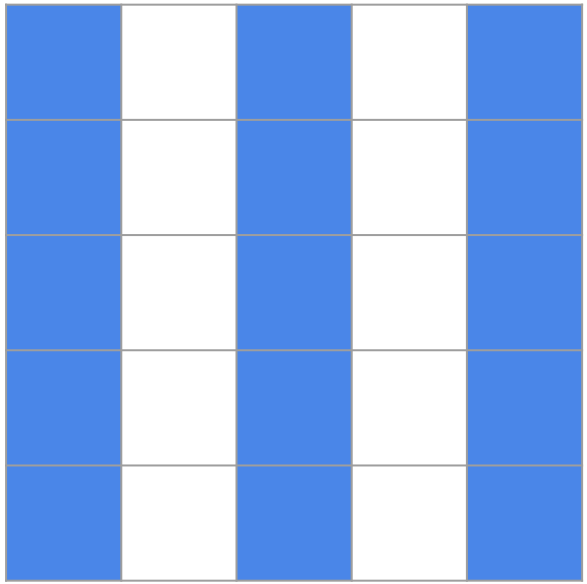
Clustered Index Scan

- Ordered Data
- Reads whole table
  - Okay if retrieving data from columns rarely accessed and not worth indexing
  - Not good if table is tall or wide
- Won’t cause sorting problems like Table Scan
- If you can add indexes to make it a seek, it would be better



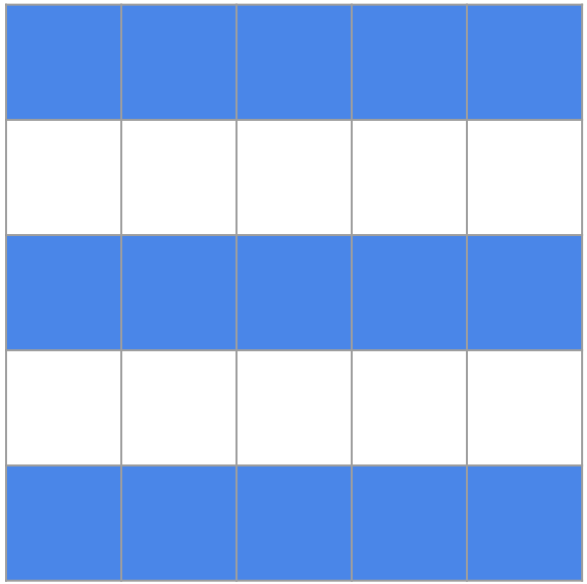
Index Scan

- Ordered Data
- Reads every row, but subset of columns
  - Good for non-sargable statements
  - Not good with wide columns
- If possible, superfluous columns should be excluded



Clustered Index Seek

- Ordered Data
- Reads every column, but subset of rows
  - Good if unable to change indexes
  - Not good with a wide table
- If possible, superfluous columns should be excluded
- If possible, change it to an Index Seek



Index Seek

- Ordered Data
- Reads a subset of columns, and a subset of rows
  - Generally pretty good
  - Not good with a bad index
- If possible, superfluous columns should be excluded