

Tune the query, not the plan

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Execution plans

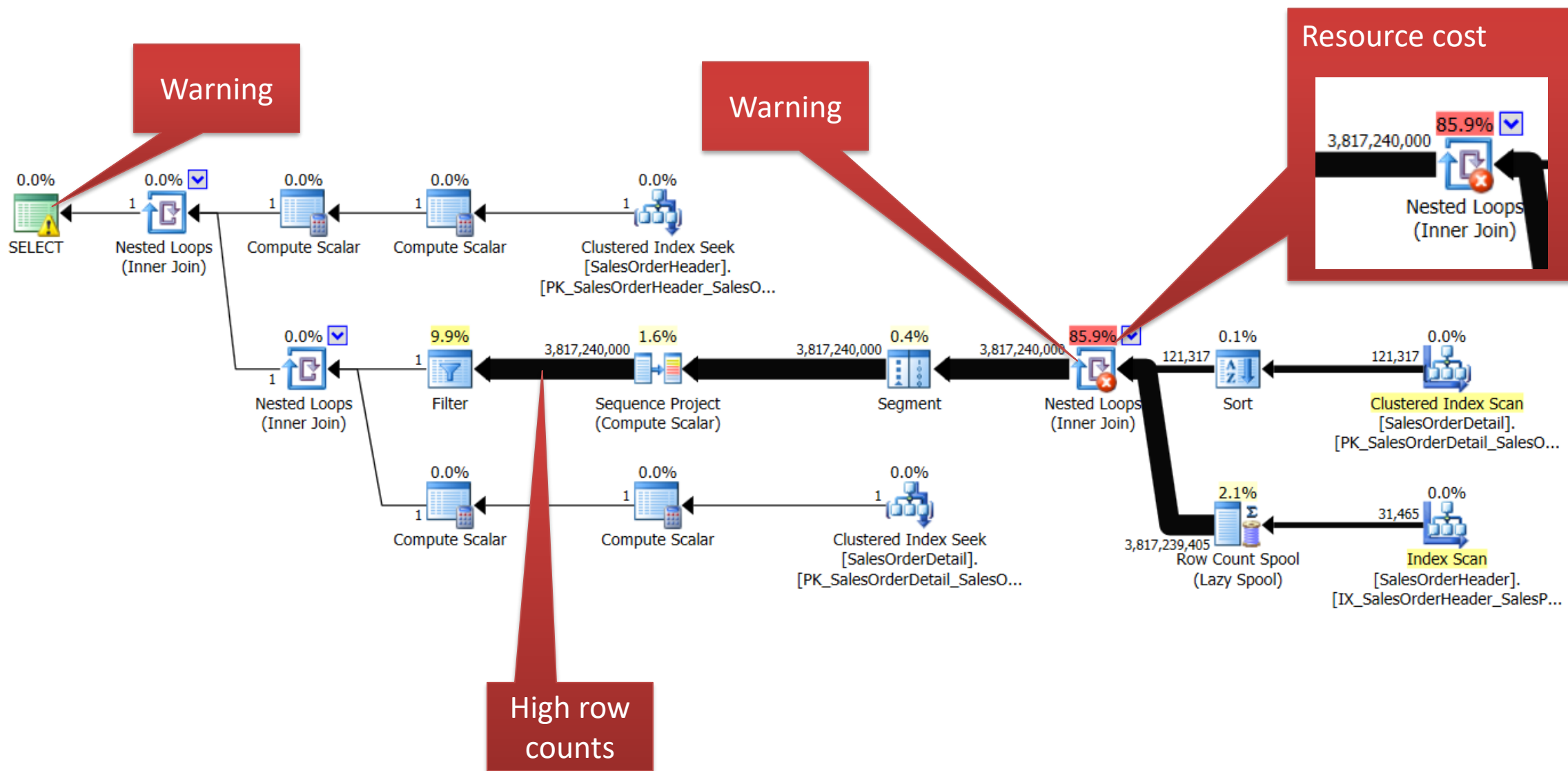
- Generated by Query Optimizer
 - Cardinality Estimator
 - Statistics
 - YOUR design
- How SQL will execute the query
 - Table access
 - What order
 - Join algorithm
- VERY useful in performance tuning

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So what's the
problem?

Your time is precious

- DBA firefighting
- Looking for quick wins
- Focus on 'bad' operators
 - Table Scans
 - Scan operations in general (prefer seek)



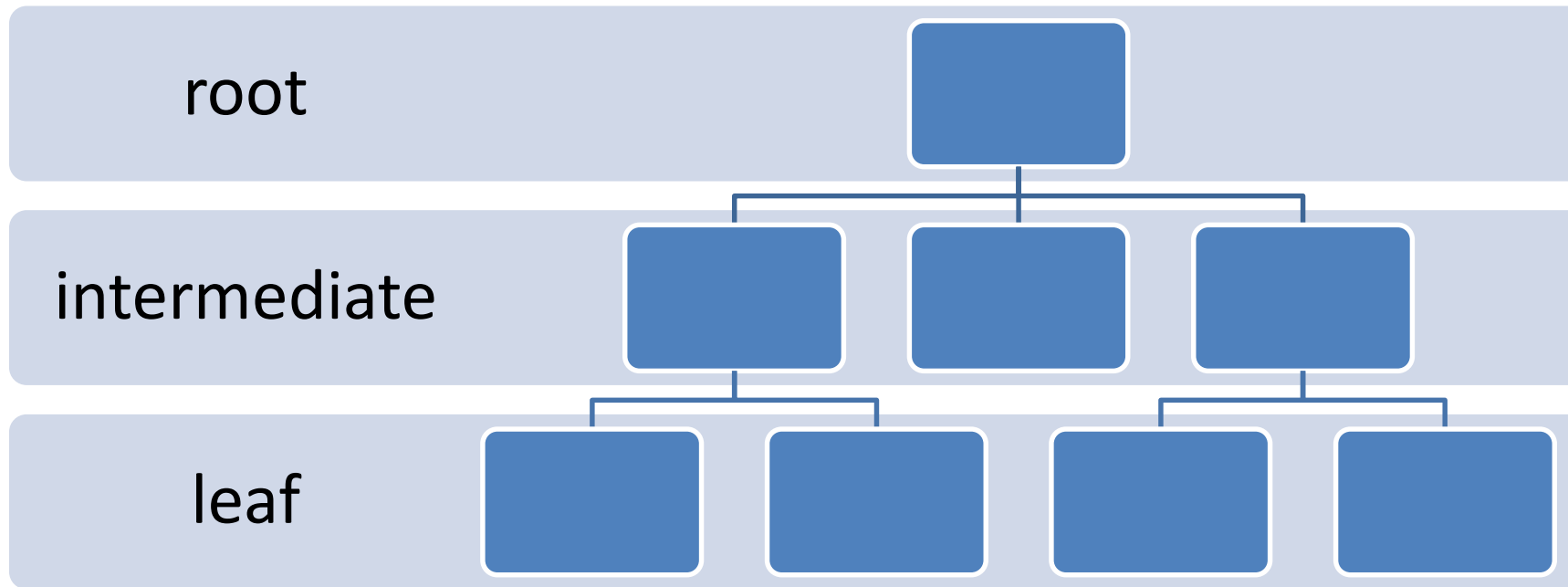
Performance tuning?

- Not just the plan
- Time
- CPU
- Reads/Writes

DEMO

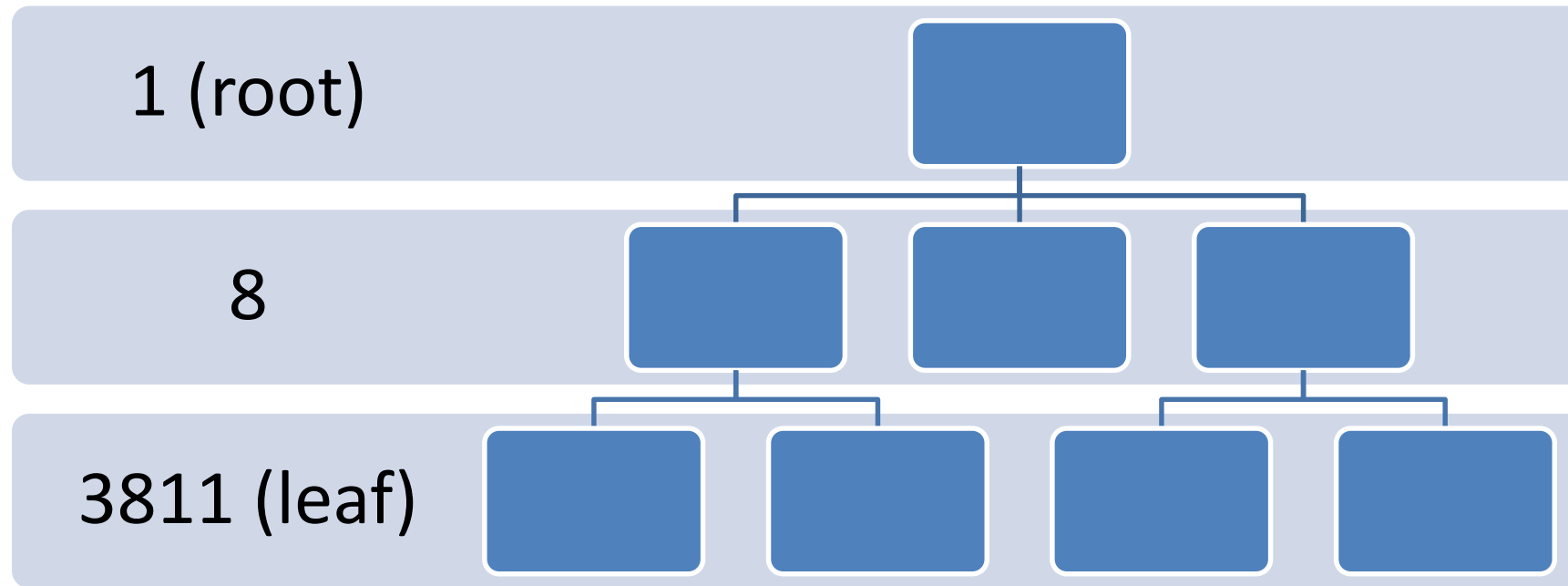
- Table Scans – removing from plan
- Index Scans vs Index Seeks
 - Does a scan always read all the table?
 - Does a seek only return a few rows?
- How to confuse/coerce the Optimizer
- Constraints

Index structure



Person.Person

PK_Person_BusinessEntityID



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Conclusions

- Replacing Table Scans with CLIX Scans is not a perf gain
- Scans do not always read the entire table
- Seeks can return the entire table
- Scan vs Seek – not comparable
 - Seek gives a starting point – needs a predicate on the key
 - Scan starts at one end of an index
- Design of query and schema is important

Performance tuning – what should we use?

- set statistics io
- set statistics time
- execution plans
 - understand why you are getting certain operators
 - is there a better way?
- wait stats

Excellent Resources

- SentryOne Plan Explorer
FREE!

<https://www.sentryone.com/plan-explorer>



- SQL Server Execution Plans –
Grant Fritchey

<https://www.red-gate.com/library/sql-server-execution-plans-2nd-edition>



Useful links

- Constraints

- <https://rileywaterhouse.co.uk/helping-the-query-optimizer-with-constraints/>
- <https://rileywaterhouse.co.uk/trusting-constraints/>

- SET STATISTICS

- <https://docs.microsoft.com/en-us/sql/t-sql/statements/set-statistics-io-transact-sql>
- <https://docs.microsoft.com/en-us/sql/t-sql/statements/set-statistics-time-transact-sql>

- Waits

- <https://www.sqlskills.com/blogs/paul/wait-statistics-or-please-tell-me-where-it-hurts/>
- <https://www.brentozar.com/sql/wait-stats/>

Thanks for listening



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