

Optimizing Ad-Hoc Expressions and Parameterization



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Overview



Optimizing ad-hoc workloads

Parameter sniffing

- Not always a bad thing
- Resolve issues of parameter sniffing



Demo



Ad-hoc queries executed only once

Plan cache becomes bloated

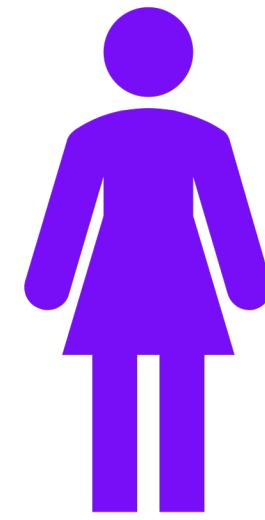
Query plans never reused



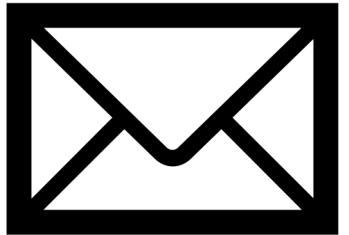
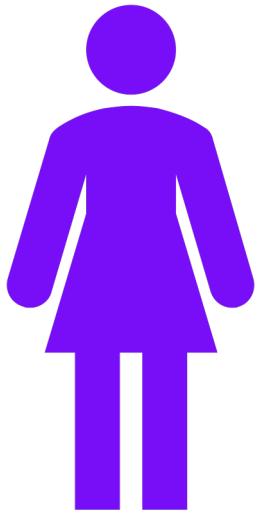
Understanding Parameter Sniffing



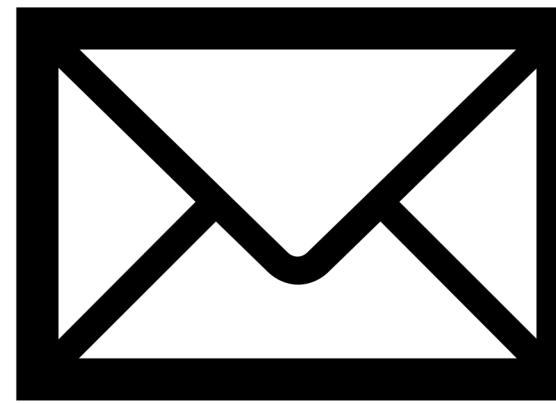
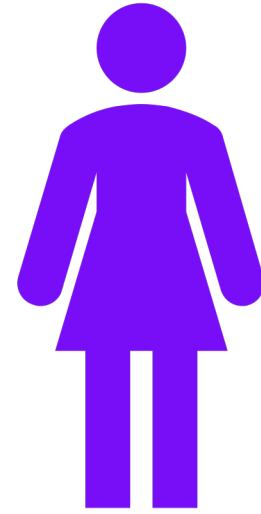
Working For a Large Retailer



Working For a Large Retailer



Handling Customer's Orders



Recompilation is an expensive process!

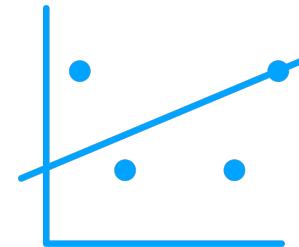
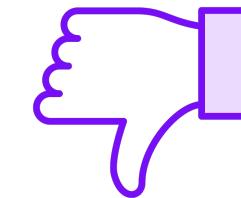


How Do You Identify Parameter Sniffing?



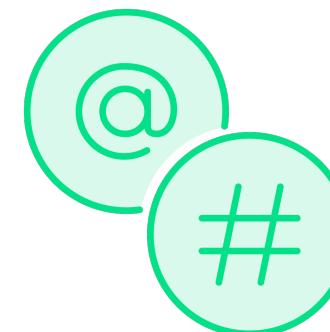
Inconsistent procedure performance

Sudden performance decrease



Performance better after updating statistics

Stand-alone query performs better than procedure



Parameter sniffing is not
necessarily a bad thing



Dealing With Parameter Sniffing



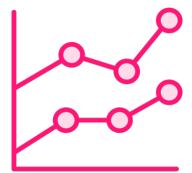
Disable completely on server, database or individual query



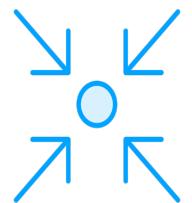
Local variable instead of parameter = average value from histogram



Recompiling the query for each execution – this is expensive!



OPTIMIZE FOR query hint



Force plan feature of the Query Store



Demo



Parameter sniffing in action

- Recompilation for solving bad sniffing



Summary



Enable Optimize for ad-hoc workloads

Parameter sniffing = query plan generated based on the first compilation

- Not necessarily bad
- Bad with significantly different data distribution

Resolve with recompilation or query hints



Up Next:

Understanding Plan Guides and Query Hints

