SMOOTHSCAN: ONE PATH TO RULE THEM ALL

By:

Sander Breukink	0741209
Rianne Conijn	0740635
Harm van Schaaijk	0873871
Jasper Selman	0741516
Tom Vogels	0871231

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PAPER

Describes **algorithms** for optimizing I-O usage for database queries.

Increasing problem: more data, current optimizers no longer optimal, continuous adaptation and morphing of physical operators.

PAPER

Describes **2 basic algorithms** which are relatively simple:

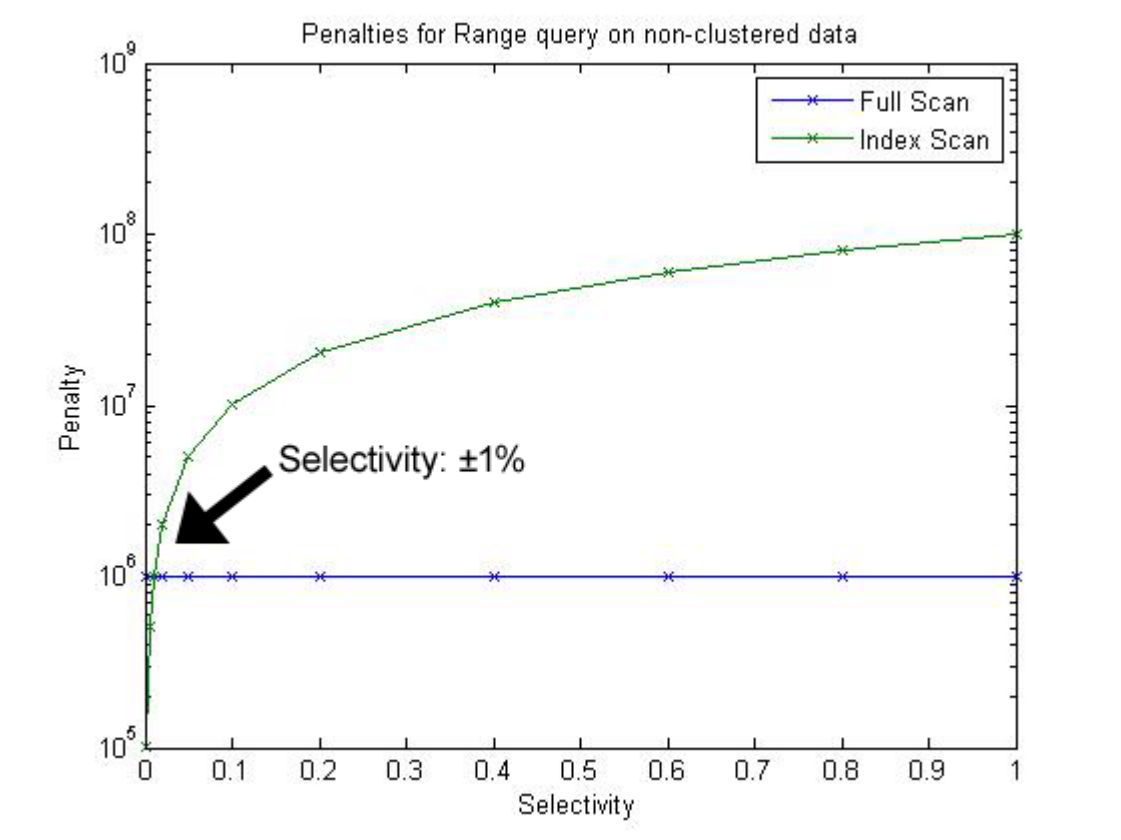
- Index scan
- Full scan

and **2 advanced algorithms** which are more complex:

- Switch scan
- Smooth scan

PAPER

Index scan and **full scan**:



PAPER

Switch scan and **Smooth scan:**

Combine the 2 previous algorithms for optimal results

SET UP

Progress:

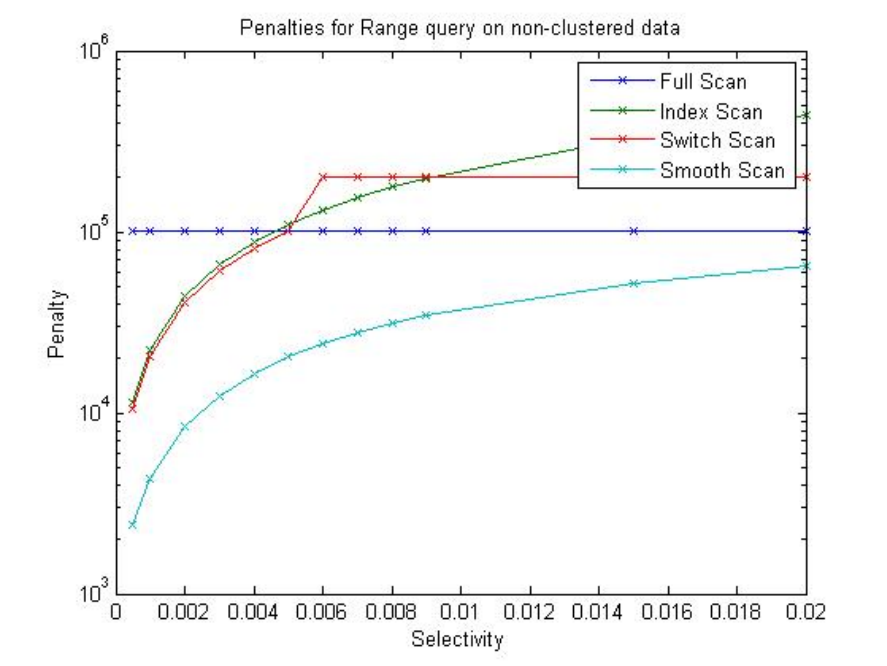
- Authors wouldn’t give us the source code
- Recreated algorithms

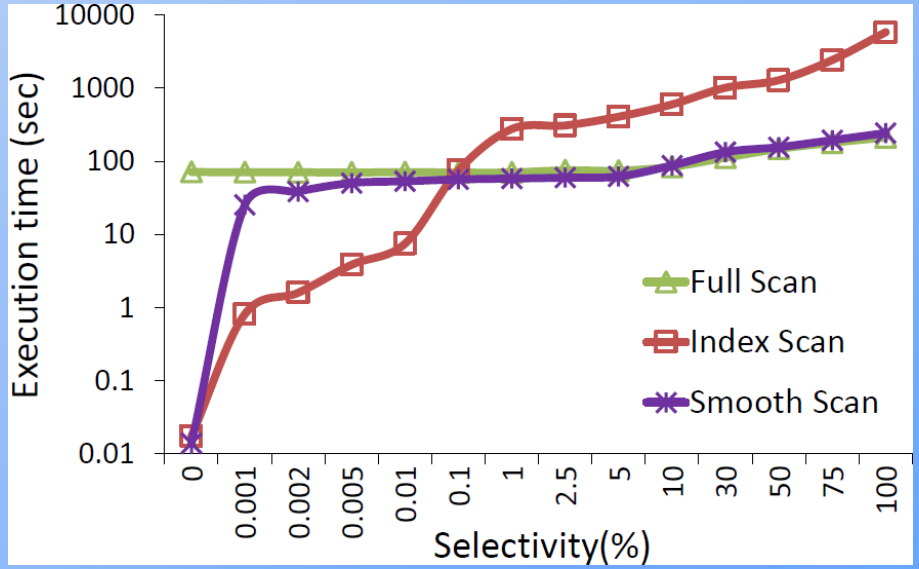
SET UP

Steps:

- First created **index scan** and **full scan**
- Then created **switch scan** based on the previous 2
- Lastly created **smooth scan** using our exisiting algorithms

RESULTS COMPARED

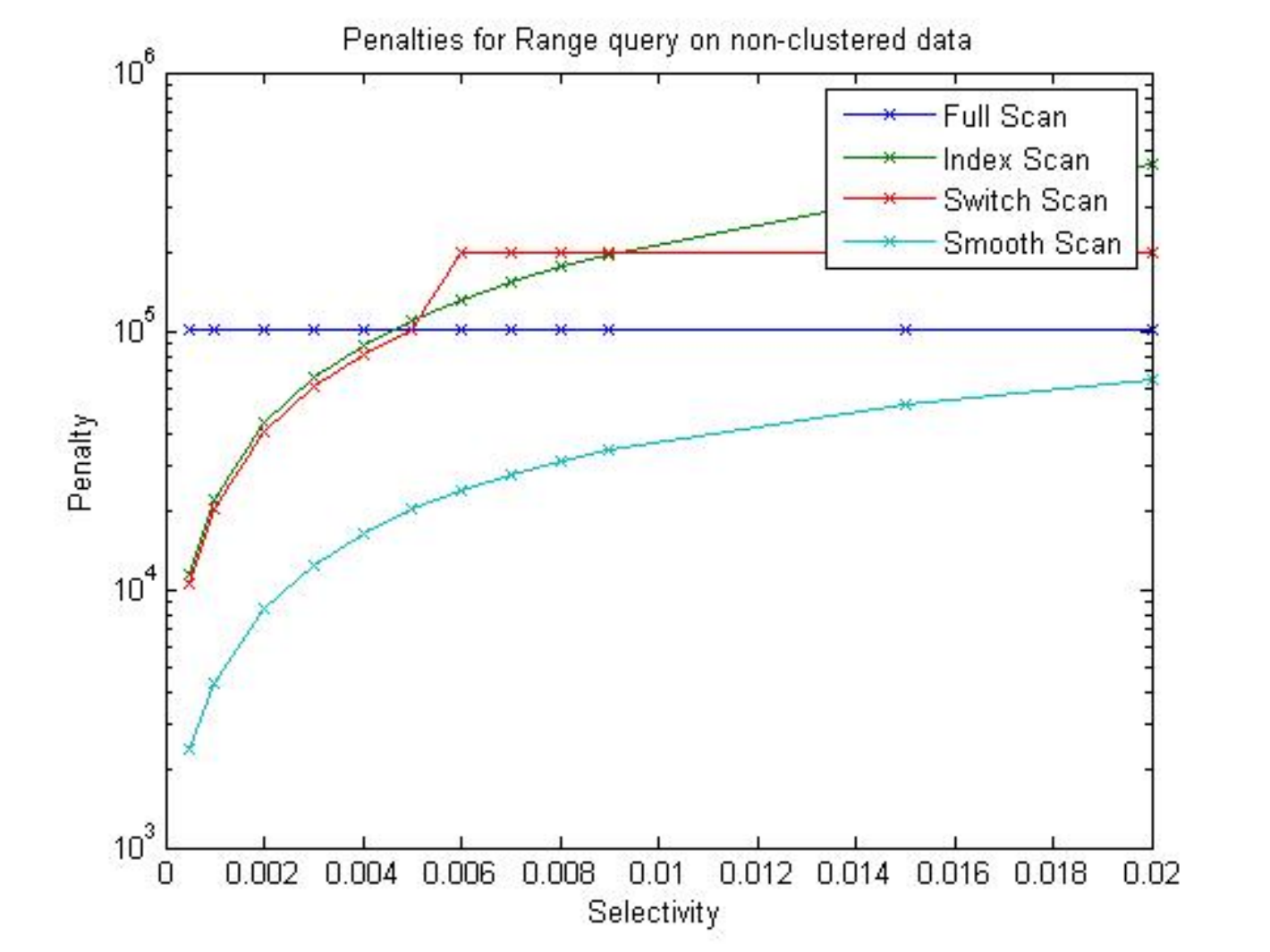




Our results

Their results

CONCLUSION


Penalties for Range query on non-clustered data
Full Scan
Index Scan
Switch Scan
Smooth Scan
Penalty
10^6
10^5
10^4
10^3
0
0.002
0.004
0.006
0.008
0.01
0.012
0.014
0.016
0.018
0.02
Selectivity

QUESTIONS?