Session 6

Last time

We saw

- an important concept: in a relational database everything (mostly) is a **relation**
- how the query optimizer works: plan, chooses algorithms, executes
- the cost function the planner tries to minimize : weights * f(CPU + I/0)
- the structure of an explain plan : children and parent nodes
- difference between EXPLAIN and EXPLAIN ANALYZE : cost estimation or execute the query
- how to EXPLAIN ANALYZE update, insert and delete queries with BEGIN ... END;
- several types of algorithms for scanning data
    - sequential scans
    - bitmap scans
    - index scans

Precisions on Explain and scans

Let's go back on a few topics

- Bitmap Heap and Bitmap Index Scans
- Actually show the difference between EXPLAIN and EXPLAIN ANALYZE
- How to update the stats on a table. EXPLAIN ANALYZE does not force the real stats on the planner. Instead, it shows you both the planner's estimates and what actually happened during execution.
- ANALYZE a table to update the stats

On the menu for today

- indexes
    - how to create them
    - when they are applied
    - B-tree indexes and Hash Indexes

- a small quiz on the algorithms we've seen so far https://forms.gle/5fdjpUSr8YaqA9KNA

- practice on a new entirely made up dataset of energy sources using a PL/pgSQL function

EOD

- knowing when to add an index to speed up a slow query
- difference between Hash and B-Tree indexes
- factors impacting the efficiency of an index