Assignment 3

Index Tuning

Database Tuning

New Group 8
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Database system and version: `Postgres 2.3.4` with driver `postgresql 42.7.3`

1 Index Data Structures

Which index data structures (e.g., B^+ tree index) are supported?

[Your answer goes here ...]

2 Clustering Indexes

Discuss how the system supports clustering indexes, in particular:

a) How do you create a clustering index on `ssnum`? Show the query.[1]

[Your answer goes here ...]

```
[Your SQL query goes here ...]
```

b) Are clustering indexes on non-key attributes supported, e.g., on `name`? Show the query.

[Your answer goes here ...]

```
[Your SQL query goes here ...]
```

c) Is the clustering index dense or sparse?

[Your answer goes here ...]

[1] Give the queries for creating a hash index *and* a B^+ tree index if both of them are supported.

d) How does the system deal with overflows in clustering indexes? How is the fill factor controlled?

[Your answer goes here ...]

e) Discuss any further characteristics of the system related to clustering indexes that are relevant to a database tuner.

[Your answer goes here ...]

3 Non-Clustering Indexes

Discuss how the system supports non-clustering indexes, in particular:

a) How do you create a combined, non-clustering index on `(dept,salary)`? Show the query.[1]

[Your answer goes here ...]

```
[Your SQL query goes here ...]
```

b) Can the system take advantage of covering indexes? What if the index covers the query, but the condition is not a prefix of the attribute sequence `(dept,salary)`?

[Your answer goes here ...]

c) Discuss any further characteristics of the system related to non-clustering indexes that are relevant to a database tuner.

[Your answer goes here ...]

4 Key Compression and Page Size

If your system supports B^+ trees, what kind of key compression (if any) is supported? How large is the default disk page? Can it be changed?

[Your answer goes here ...]

Time Spent on this Assignment

Time in hours per person:

- Florian Frauenschuh:
- Peter Lindner:
- Alexander Weilert: