Video Activity – Week-7

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Activity 11.1

Question-1: - When should we use index in database?

Answer: - Indexes are a common way **to enhance database performance**. An index allows the database server to find and retrieve specific rows much faster than it could do without an index. But indexes also add overhead to the database system as a whole, so they should be used sensibly.

Question-2: - What does the data structure for an index look like?

Answer: - An Index is **the structure or object by which we can retrieve specific rows or data faster**. Indexes can be created using one or multiple columns or by using the partial data depending on your query requirement conditions. Index will create a pointer to the actual rows in the specified table.

Question-3: - If you are in psql, run \d books to see that there is an index on books.id?

Answer: -

Timeline

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Question-4: - Create an index on books.pagecount?

Answer: -

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Question-5: - Write a query that could take advantage of that index?

Answer: -

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Activity 11.2

Question-1: - indicate whether index matches predicate or not?

Answer: -

1. Id = 5132 🡪 Yes
2. Title = ‘It’ and id = 5132 🡪 yes
3. Title = ‘It’ or id = 5132 🡪 no
4. Genre = ‘ Horror’ and pagecount > 2000 🡪 yes
5. Genre = ‘Horror’ 🡪 yes
6. pagecount > 2000 🡪 no

Activity 12.1

Question -1: - Try running the following queries?

Answer: - 1)

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2)

Text

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Activity 12.2

Question-1: - Run the following queries

Answer: -

1. run select \* from books;

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1. create index on books (pagecount);
2. \d books

Both of these queries are in the screenshot below.

Timeline

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1. Cluster books using books\_pagecount\_index;

Text, timeline

Description automatically generated with medium confidence

1. Select \* from books;

Text

Description automatically generated with medium confidence

Observations: -

1. After cluster, the relation is sorted on the basis of pagecount
2. When select \* is run, then the second time, it is based on the cluster and not according to the Asc order as is the default case for select \*.
3. Cluster is effective to get results in the form of groups.