Execution Plans

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1. Using your knowledge of SQL, and the different querying techniques, write me three different queries that answer the question: What activities **cannot** be performed at Bear Brook, Pawtuckaway or Bradley Palmer parks?
    a. (5 Points) Collect an execution plan for each query.
    b. (5 Points) Collect the results from the explain analyze command for each query.
    c. (30 Points) For **each** of your three queries:
        i. Compare the results of the **execution plan** and **explain analyze** command.
        ii. Do you think the database engine is optimizing your query?
    d. (5 Points) What query has the best performance?

2. Write me a query to tell me what activities four people can do together in Massachuttes' park?
    a. (5 Points) Collect an execution plan and explain analyze command results for your query. You may want to run your query several times.
    b. (5 Points) Add an index to the state column of the park table, as searching this table by state is likely something that would happen a lot. And state is not the primary key.
    c. (10 Points) How does adding the index to the state column change the execution plan? The explain analyze command results?

3. Write the following queries as efficiently as you can, justifying your query with its explain analyze results:
    a. (5 Points) Tell me what activities I can do while camping at a particular park (i.e. what other activities do campgrounds offer)
    b. (5 Points) Tell me what water activities I can do this weekend, and where I can do them. You should sort this result set by activity, then by state, and then by park name.
    c. (5 Points) Tell me where I can watch other people play a sport.

4. (5 Points) Write a query whose execution plan contains a file scan.

5. (5 Points) Write a query whose execution plan contains an index scan.

6. (5 Points) Write a query whose execution plan contains a clustered index scan.

7. (5 Points) Write a query whose execution plan contains a non-clustered index scan.