CST 363 (Databases)

Lab: Index structures

1. Read into SQLite the campaign data that can be found at the top of our iLearn page. Use file campaign-ca-2016.sql.
2. Run this query

   ```
   Select contbr_st, contbr_zip from campaign where contbr_nm = "DAYTON, ROBERT";
   ```

3. Run the query again, but this time put "explain query plan" at the front of the query. Look at the output.
4. Create an index on the contributor name field:

   ```
   create index i1 on campaign(contbr_nm);
   ```

5. Run the query of problem 2 again. Can you notice any difference in the speed?
6. Run the query again, but this time with "explain query plan" at the beginning. Do you see a difference between what you got in part 3.
7. If you still have time, try creating additional indexes, and try running other queries. For example, try creating an index on another field of the campaign table, and then use this field and contbr_nm in the where clause of a query.
8. If you still have time, read the documentation on the sqlite site about what "explain query plan" reports.

NOTE:

Here is an example of a query that is very slow without an index. It is based on the campaign-ca-normal.sql data:

```
select zip, count(date)
from contributor
     natural left outer join
     (select * from contribution where amount > 2000)
     group by zip;
```

An index that greatly speeds up evaluation of this query:

```
create index zip_index on contributor(zip);
```