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REPORT

GROUP MEMBER NAMES

Individual Project

RUNNING THE CODE

Run Test (main.cc)

Make sure that *.bin.meta files are there for each *.bin file

```
make main
./main
```

Run gtest (gtest_dbtest.cc)

```
make gtest_gtest_dbtest.out
./gtest_dbtest.out
```

DEMO LINK

https://youtu.be/x9PuqaW_HBE

or

https://drive.google.com/open?id=1XkAiAtN7d2X_d3u4ygf34n_R0bfBENUV

IMPLEMENTATION DETAILS

1. `QueryNode::Execute`
    a. The pointer to the relational operator of the QueryNode is stored in a vector
    b. The tree is traversed and the WaitUntilDone() is called for the node
    c. Then the Run() is called for this relational operator
    d. Depending on the OnePipeQueryNode or TwoPipeQueryNode execute is called for the child/ children of this node until all internal nodes are set to Run()
    e. For `LeafQueryNode` the input is actually the *.bin files and not another node

2. `DataDefinitionLanguage`
    a. This class handles CREATE, INSERT and DROP queries
    b. Create
        i. It checks if the table already exists in the database
        ii. If it doesn't then it creates *.bin.meta file of appropriate type (heap or sorted)
        iii. It creates an empty *.bin file
        iv. It also appends the schema of this new table in the catalog file
    c. Insert
        i. It opens the *.bin file and calls the Load method of the DBFile which will load the tuples from the *.tbl file

    d. Drop
        i. It scans the catalog file to find the table with the given table name
        ii. If found then it removes the schema from the catalog and also the *.bin and *.bin.meta files

3. `Parser`
    a. If the query is of type CREATE then the tablename of the new table will be loaded in the variable newtable by the parser
    b. If the query is of type INSERT then the table name will be loaded in oldtable and *.tbl file will be loaded in newfile by the parser
    c. If the query is of type DROP then only table name will be loaded in oldtable but the newfile will be initialised to null

4. `Interface`
    a. Based on the cases of the Parser(mentioned above) it calls appropriate functions (Create, Insert, Drop(`DataDefinitionLanguage functions`) or Plan, Execute (`QueryPlan functions`)

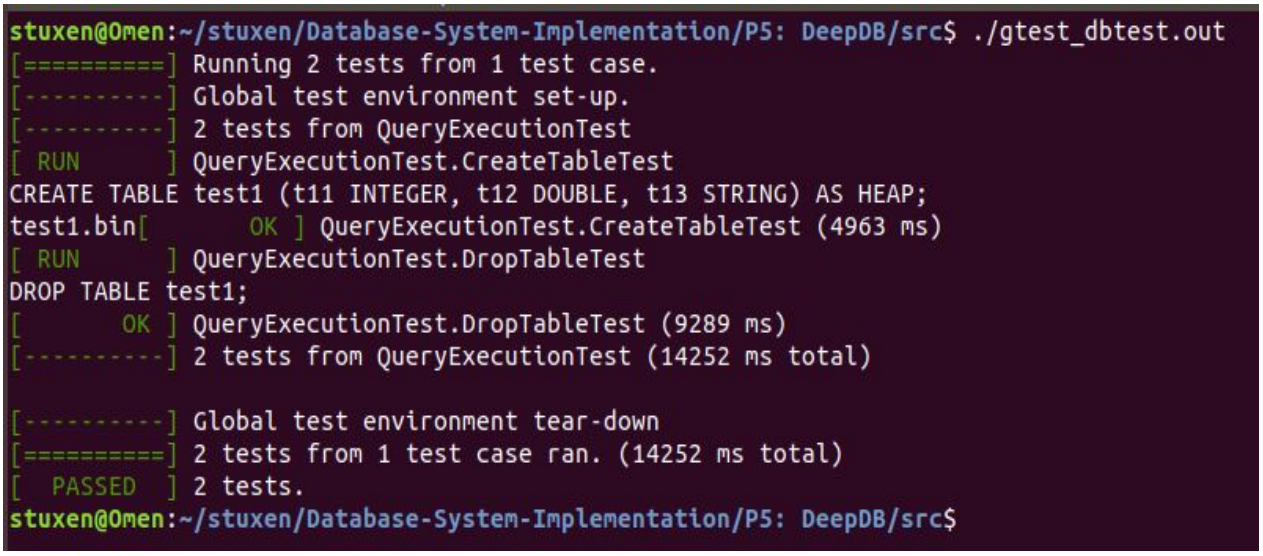
5. `LeafQueryNode`
    a. They are the leaf nodes of the query plan
    b. They represent the Selection operator

OUTPUT

GTEST

1. CreateTableTest
    a. It checks if the CREATE TABLE query actually produced .bin and .meta files or not

2. DropTableTest
    a. It checks if the DROP TABLE query actually deleted both the .bin and .meta files or not



CONCLUSION

We now finally have a database system that is actually powerful for small sized data.