Project Report

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How to run project:
make clean//to remove compiled files
make //to compile all files
./a4-1.out//to run the compiled binary
make gtest //to compile google test cases
./gtest to run test cases

Statistics Class:

- It is made of map with key as table name and value as table information.
- Table information is made of class TableInfo. TableInfo consists of relation name, number of tuples, relation size (to make sure only one relation exists) and map which include list of attributes added.

TableInfo Class Methods:

- Constructor, Copy constructor and destructor
- Getter and setter methods for each attribute of TableInfo class (not confused with attributes of map)

Statistics Class Methods:

- Constructor, copy constructor and destructor
- Getter method for map of TableInfo.
- AddRel – Adds relations in stats object
- AddAtt – Adds attributes to given relation in stats object
- CopyRel – Updates relation name and its data
- Read – Reads the file for statistics information and adds to stats object
- Write – Process stats object and prints output about number of tuples and number of distinct values
- Apply – Calls Estimate method which rounds the results of estimate method
- Estimate – finds estimation of number of tuples
- Evaluate – computes the estimate value step by step
- Validate - Checks whether the arguments passed to evaluate method are valid or not
- ContainsAtt - Checks whether attribute is present or not

Output is written in "output41.txt". This is a snapshot of Q1 method.

GTests:

- TableInfoCreate – tests whether table info object is created with correct attribute values
- TableInfoCopy – tests whether all the table info object data is copied properly to new object.
- StatisticsCopy – Tests whether all the statistics object data is copies to new statistics object
- StatisticsAddAttneg1input – Tests if the number of distinct value equals to number of tuples when given input is -1.