

Assignment 3

Group member:

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Compiling and running project:

Steps of creating .bin file:

1. Make clean
2. Make a2test.out
3. ./a2test.out

Steps of compiling and running test:

1. Make clean
2. Make test.out
3. ./test.out 1(or 2-6)

Steps of compiling and running runTestCases.sh:

1. Make clean
2. Make
3. ./runTestCases.sh

Steps of compiling and running gtest:

1. Make clean
2. Make gtest
3. ./gtest.out

Methods explanation:

SelectFile method has a DBFile input, apply CNF to each record, if the record fulfill the CNF, output the record to the pipe used for output.

SelectPipe method has a Pipe input, apply CNF to each record, if the record fulfill the CNF, output the record to the pipe used for output.

Project method had two different pipes of parameter, suck records from input pipe and then do the project, after that put them into output pipe.

Sum method has a Pipe input, compute the sum result based on type, no matter the type is int or double, then the method will generate the Schema and Records, and push the record to the pipe used for output.

DuplicateRemoval method using BigQ class to sort the records first and then by using pipe just output the records have never appeared before, the records are distinct.

GroupBy method also use BigQ class to sort input Pipe first, then compare current record with previous record from the sorted pipe. If same, the two records are in the same group, if not, they are

in different groups.

WriteOut method will write records into file, which depends on the different types and formats of attributes.

Output1.txt screenshot:

Q1 output:

```
** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: ./
heap files dir: ./

./partsupp.bin
1
ps_partkey: [6333], ps_suppkey: [6334], ps_availqty: [3711], ps_supplycost: [1.01], ps_comment: [s use slyly. fluffily express requests wake carefully ironic packages]
ps_partkey: [9097], ps_suppkey: [4998], ps_availqty: [3012], ps_supplycost: [1.01], ps_comment: [s the bold pinto beans cajole carefully after the slyly unusual instructions. slyly special ]
ps_partkey: [28468], ps_suppkey: [469], ps_availqty: [6884], ps_supplycost: [1], ps_comment: [furiously among the slyly ironic instructions. final, unusual packages wake slyly. final account
ps_partkey: [27115], ps_suppkey: [9618], ps_availqty: [7966], ps_supplycost: [1.02], ps_comment: [e regular, ironic dugouts. slyly special requests cajole quickly across the blithely expres
ps_partkey: [34494], ps_suppkey: [9501], ps_availqty: [7438], ps_supplycost: [1.02], ps_comment: [regular excuses. final, regular deposits wake, pinto beans according to th]
ps_partkey: [43172], ps_suppkey: [685], ps_availqty: [6600], ps_supplycost: [1.01], ps_comment: [ites integrate blithely above the slyly regular instructions. asymptotes besides the regular
ps_partkey: [43764], ps_suppkey: [1277], ps_availqty: [2344], ps_supplycost: [1.02], ps_comment: [; furious, ironic requests nag furiously against the silent packages-- furiously pending pi
ps_partkey: [51671], ps_suppkey: [4177], ps_availqty: [3399], ps_supplycost: [1.02], ps_comment: [iously. blithely bold requests haggle furiously. slyly final requests sleep. final, final ti
ps_partkey: [60953], ps_suppkey: [954], ps_availqty: [8611], ps_supplycost: [1.01], ps_comment: [ully even dolphins wake carefully about the slyly final pinto beans]
ps_partkey: [61707], ps_suppkey: [1708], ps_availqty: [3178], ps_supplycost: [1.02], ps_comment: [ide of the unusual, regular excuses. unusual, special packages are carefully across the even
ps_partkey: [71984], ps_suppkey: [6999], ps_availqty: [6016], ps_supplycost: [1.01], ps_comment: [eodolites are blithely across the special requests. quickly regular excuses are furiously ai
ps_partkey: [74375], ps_suppkey: [6883], ps_availqty: [864], ps_supplycost: [1.02], ps_comment: [lithely express asymptotes nag regular packages. special, ruthless instructions against the
ps_partkey: [76994], ps_suppkey: [9502], ps_availqty: [9712], ps_supplycost: [1], ps_comment: [. carefully ironic platelets cajole furiously among the furiously regular asymptotes. furiousl
ps_partkey: [93653], ps_suppkey: [3654], ps_availqty: [4473], ps_supplycost: [1.02], ps_comment: [ of the carefully final requests. bold deposits are slyly. instructions nod furiously instr
ps_partkey: [102497], ps_suppkey: [2498], ps_availqty: [6491], ps_supplycost: [1], ps_comment: [fully final accounts. even accounts after the carefully final accounts haggle according to th
ps_partkey: [122543], ps_suppkey: [5056], ps_availqty: [5753], ps_supplycost: [1], ps_comment: [e the quickly ironic dependencies. slyly ironic accounts]
ps_partkey: [139711], ps_suppkey: [9712], ps_availqty: [4286], ps_supplycost: [1.01], ps_comment: [ully unusual escapades sleep along the special instructions. final, bold ideas across the
ps_partkey: [155112], ps_suppkey: [5113], ps_availqty: [7635], ps_supplycost: [1], ps_comment: [refully bold packages. special somas cajole according to the foxes. furiously even accou]
ps_partkey: [158093], ps_suppkey: [5639], ps_availqty: [3751], ps_supplycost: [1], ps_comment: [iously unusual gifts maintain quickly according to the slyly pending deposits. quickly ]
ps_partkey: [193659], ps_suppkey: [6179], ps_availqty: [6606], ps_supplycost: [1.01], ps_comment: [can haggle. quickly express packages are blithely. even requests against the silent account
ps_partkey: [193981], ps_suppkey: [3982], ps_availqty: [619], ps_supplycost: [1.01], ps_comment: [ic accounts after the unusual, regular instructions grow carefully around the blithely unusi

query1 returned 21 records
```

Q2 output:

```
** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: ./
heap files dir: ./

int: [1030], string: [orange floral olive ivory lace], double: [931.03]
int: [2029], string: [midnight brown dim violet almond], double: [931.02]
int: [3028], string: [puff slate tomato moccasin azure], double: [931.02]
int: [4027], string: [white ivory moccasin coral puff], double: [931.02]
int: [5026], string: [blanched blush pink light wheat], double: [931.02]
int: [6025], string: [purple medium light aquamarine dark], double: [931.02]
int: [7024], string: [forest rosy peach antique midnight], double: [931.02]
int: [8023], string: [mint salmon moccasin blanched beige], double: [931.02]
int: [9022], string: [peru misty sandy dark drab], double: [931.02]
int: [10021], string: [blush steel green sienna snow], double: [931.02]
int: [11020], string: [plum khaki powder beige peru], double: [931.02]

query2 returned 11 records
```

Q3 output:

```
** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: ./
heap files dir: ./

double: [8.58337e+07]

query3 returned 1 records
```

Q4 output:

```
** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: ./
heap files dir: ./

query4
./partsupp.bin
double: [3.70714e+08]
query4 returned 1 recs
```

Q5 output:

```
** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
| catalog location:  catalog
| tpch files dir:    ./
| heap files dir:    ./

./partsupp.bin
| query5 finished..output written to file ps.w.tmp
```

GTest output screenshot:

```
qinxuanshi@qinxuanshi:~/Desktop/a3test$ ./gtest.out
[=====] Running 4 tests from 1 test suite.
[-----] Global test environment set-up.
[-----] 4 tests from TestMap
[ RUN     ] TestMap.SelectFile_create_Test
[ OK      ] TestMap.SelectFile_create_Test (0 ms)
[ RUN     ] TestMap.SelectPipe_create_Test
[ OK      ] TestMap.SelectPipe_create_Test (0 ms)
[ RUN     ] TestMap.SelectFile_use_Test
[ OK      ] TestMap.SelectFile_use_Test (0 ms)
[ RUN     ] TestMap.GroupBy_Use_n_Pages_Test
[ OK      ] TestMap.GroupBy_Use_n_Pages_Test (0 ms)
[-----] 4 tests from TestMap (0 ms total)

[-----] Global test environment tear-down
[=====] 4 tests from 1 test suite ran. (0 ms total)
[ PASSED ] 4 tests.
```