

Project 2 part 1 report

a) Group member names

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b) Include instructions on how to compile and run your code as well as a brief explanation of each method you wrote and how it works.

Compile and run instructions:

```
make clean
make
make test.out
```

For running queries:

Run

```
./test.out
```

And select options accordingly

For running gTest:

```
make gtest.out
./gtest.out
```

Select from options accordingly

For generating output1.text

```
./runTestCases.sh
```

Functions in BigQ.cc:

- BigQ::sort_run : used by sorted file to do the sorting
- BigQ::TPMMS_Phase1: gets all the record from input pipe and uses the TPPMS algorithm to sort them
- BigQ :: BigQ (Pipe &in, Pipe &out, OrderMaker &sortorder, int runlen):
It is a constructor. When it is called, the class sets up its internal data structure, spawns its own worker thread and then returns from constructors.

Functions in gtest.cc::

- TEST(BinFileOpen, One): Test passes if bin file is open
- TEST(BinFileNotEmpty, Two): Test passes if bin file is not empty
- TEST(WriteinFile, three): test passes if length of the file written is greater than zero
- TEST(MoveFirst, four): test passes if files are written after each run

c) A screen shot of output1.txt generated from your code.

```

g++ -O2 -fno-deprecated -std=c++11 -o test.out Record.o Comparison.o Comparison.o
(base) Shibanis-MacBook-Pro:a2test shibanimahapatra$ ./runTestCases.sh
consumer: 25 recs out of 25 recs in sorted order
consumer: recs removed written out as heap DBFile at customer.bin.bigq
consumer: 1500 recs out of 1500 recs in sorted order
consumer: 15000 recs out of 15000 recs in sorted order
consumer: 25 recs out of 25 recs in sorted order
(base) Shibanis-MacBook-Pro:a2test shibanimahapatra$

```

```

_n_attributes: [16], _n_name: [MOZAMBIQUE], _n_regionkey: [0], _n_comment: [s. ironic, unusual asymptotes wae blithely r]
_n_attributes: [17], _n_name: [PERU], _n_regionkey: [1], _n_comment: [platelets, blithely pending dependencies use fluffily across the even pinto beans, carefully silent account]
_n_attributes: [18], _n_name: [CHINA], _n_regionkey: [2], _n_comment: [c dependencies, fluffily express indignation sleep slyly regular accounts, ideas sleep, deposit]
_n_attributes: [19], _n_name: [ROMANIA], _n_regionkey: [3], _n_comment: [ilar asymptotes are about the furious multipliers, express dependencies nag above the ironically ironic account]
_n_attributes: [20], _n_name: [RUSSIA], _n_regionkey: [4], _n_comment: [s sleep across the slay sleep]
_n_attributes: [21], _n_name: [VIETNAM], _n_regionkey: [2], _n_comment: [hly enticingly express accounts, even, final i]
_n_attributes: [22], _n_name: [RUSSIA], _n_regionkey: [3], _n_comment: [ requests against the platelets use newer according to the quickly regular pint]
_n_attributes: [23], _n_name: [UNITED STATES], _n_regionkey: [1], _n_comment: [least carefully express requests, accounts are carefully]
_n_attributes: [24], _n_name: [UNITED STATES], _n_regionkey: [1], _n_comment: [ly final packages, slow flows cajole quickly, quickly silent platelets breach ironic accounts, unusual pinto be]
consumer: removed 25 rcs from the pipe
=====
producer: opened DBFile customer.bin
producer: inserted 1500 rows into the pipe
consumer: removed 1500 rcs from the pipe
=====
_o_orderkey: [59968], _o_custkey: [898], _o_orderstatus: [0], _o_totalprice: [59677.3], _o_orderdate: [1997-10-12], _o_orderpriority: [4-NOT SPECIFIED], _o_clerk: [Clerk#000008833], _o_shippriority: [0], _o_comment: [ages, furiously final foxes wae]
_o_orderkey: [59969], _o_custkey: [1210], _o_orderstatus: [F], _o_totalprice: [123578], _o_orderdate: [1992-01-12], _o_orderpriority: [2-HIGH], _o_clerk: [Clerk#000008926], _o_shippriority: [0], _o_comment: [lular packages use, final deposits cajole quickly reg]
_o_orderkey: [59970], _o_custkey: [970], _o_orderstatus: [0], _o_totalprice: [12973.3], _o_orderdate: [1998-07-15], _o_orderpriority: [1-URGENT], _o_clerk: [Clerk#00000181], _o_shippriority: [0], _o_comment: [ pearls nag, fluffily special foxes boost sl]
_o_orderkey: [59971], _o_custkey: [826], _o_orderstatus: [P], _o_totalprice: [242729], _o_orderdate: [1995-06-01], _o_orderpriority: [1-URGENT], _o_clerk: [Clerk#00000461], _o_shippriority: [0], _o_comment: [ndollets, slyly final instructions wae slyly, special foxes al]
_o_orderkey: [59972], _o_custkey: [1480], _o_orderstatus: [F], _o_totalprice: [198245.7], _o_orderdate: [1994-11-01], _o_orderpriority: [4-NOT SPECIFIED], _o_clerk: [Clerk#00000260], _o_shippriority: [0], _o_comment: [e along the deposits, blithely bol]
_o_orderkey: [59973], _o_custkey: [229], _o_orderstatus: [0], _o_totalprice: [230718], _o_orderdate: [1995-11-16], _o_orderpriority: [5-LOW], _o_clerk: [Clerk#000008991], _o_shippriority: [0], _o_comment: [lly, along the furiously fluff]
_o_orderkey: [59974], _o_custkey: [761], _o_orderstatus: [0], _o_totalprice: [6327.4], _o_orderdate: [1992-12-01], _o_orderpriority: [2-HIGH], _o_clerk: [Clerk#00000802], _o_shippriority: [0], _o_comment: [counts, even, ironic packages cajole iron]
_o_orderkey: [59975], _o_custkey: [706], _o_orderstatus: [F], _o_totalprice: [39995.3], _o_orderdate: [1993-12-22], _o_orderpriority: [5-LOW], _o_clerk: [Clerk#00000913], _o_shippriority: [0], _o_comment: [ even packages affix fluffily against ]
_o_orderkey: [60000], _o_custkey: [1426], _o_orderstatus: [P], _o_totalprice: [1299402], _o_orderdate: [1995-04-21], _o_orderpriority: [2-HIGH], _o_clerk: [Clerk#00000194], _o_shippriority: [0], _o_comment: [usual frets use alongside of the]
consumer: removed 15000 rcs from the pipe
=====
_n_attributes: [16], _n_name: [MOZAMBIQUE], _n_regionkey: [0], _n_comment: [s. ironic, unusual asymptotes wae blithely r]
_n_attributes: [17], _n_name: [PERU], _n_regionkey: [1], _n_comment: [platelets, blithely pending dependencies use fluffily across the even pinto beans, carefully silent account]
_n_attributes: [18], _n_name: [CHINA], _n_regionkey: [2], _n_comment: [c dependencies, furiously express indignation sleep slyly regular accounts, ideas sleep, deposit]
_n_attributes: [19], _n_name: [ROMANIA], _n_regionkey: [3], _n_comment: [ilar asymptotes are about the furious multipliers, express dependencies nag above the ironically ironic account]
_n_attributes: [20], _n_name: [RUSSIA], _n_regionkey: [4], _n_comment: [s sleep across the slay sleep]
_n_attributes: [21], _n_name: [VIETNAM], _n_regionkey: [2], _n_comment: [hly enticingly express accounts, even, final i]
_n_attributes: [22], _n_name: [RUSSIA], _n_regionkey: [3], _n_comment: [ requests against the platelets use newer according to the quickly regular pint]
_n_attributes: [23], _n_name: [UNITED KINGDOM], _n_regionkey: [3], _n_comment: [least best carefully special requests, accounts are, careful]
_n_attributes: [24], _n_name: [UNITED STATES], _n_regionkey: [1], _n_comment: [ly final packages, slow flows cajole quickly, quickly silent platelets breach ironic accounts, unusual pinto be]
consumer: removed 25 rcs from the pipe
=====

```

(output.txt file screenshot)

d) Screen shots of GTest results that match results generated by your code.

```
(base) Shibanis-MacBook-Pro:a2test shibanimahapatra$ ./gtest.out
[=====] Running 4 tests from 4 test suites.
[-----] Global test environment set-up.
[-----] 1 test from BinFileOpen
[ RUN      ] BinFileOpen.One
[          OK ] BinFileOpen.One (0 ms)
[-----] 1 test from BinFileOpen (0 ms total)

[-----] 1 test from BinFileNotEmpty
[ RUN      ] BinFileNotEmpty.Two
[          OK ] BinFileNotEmpty.Two (0 ms)
[-----] 1 test from BinFileNotEmpty (0 ms total)

[-----] 1 test from WriteinFile
[ RUN      ] WriteinFile.three
[          OK ] WriteinFile.three (1 ms)
[-----] 1 test from WriteinFile (1 ms total)

[-----] 1 test from MoveFirst
[ RUN      ] MoveFirst.four
[          OK ] MoveFirst.four (1 ms)
[-----] 1 test from MoveFirst (1 ms total)

[-----] Global test environment tear-down
[=====] 4 tests from 4 test suites ran. (2 ms total)
[ PASSED ] 4 tests.
(base) Shibanis-MacBook-Pro:a2test shibanimahapatra$
```