**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:

Text

Description automatically generated with medium confidence

Q2 output:

A picture containing scatter chart

Description automatically generated

Q3 output:

A picture containing background pattern

Description automatically generated

Q4 output:

Graphical user interface, application

Description automatically generated with medium confidence

Q5 output:

Text

Description automatically generated with medium confidence

**GTest output screenshot:**

Background pattern

Description automatically generated with low confidence