BIG DATA - TERM PROJECT

Implementing Map-Reduce Tools

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1. About the System:

In this project, we designed and implemented a big data processing application for statistical analysis of pain pills in the USA and some other countries. We took a step further and implemented our project as generic as possible that is suitable for any appropriate dataset.

2. Technical Challenges:

The most challenging part was installing and setting the Hadoop software. We struggled with it almost a week. We overcame it with lots of readings and tutorials. Implementing the system and GUI was relatively simpler.

3. System Details:

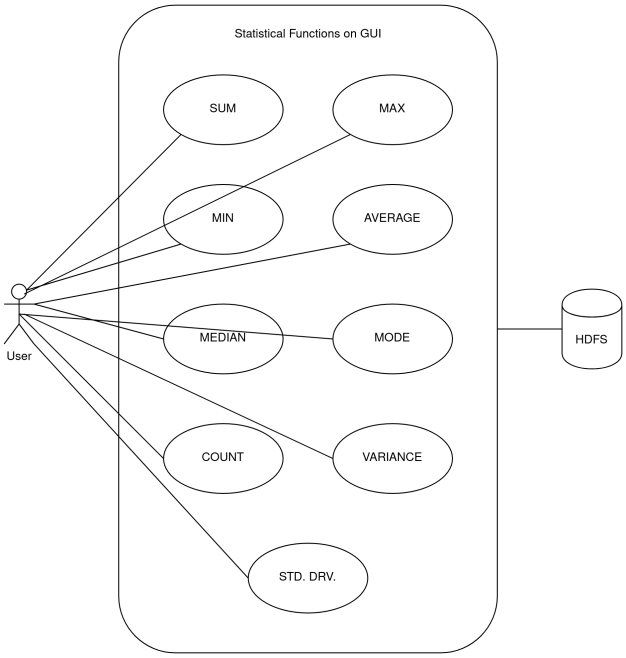
We created a software that allows people to perform some statistical analyzes on their own datasets. These statistical functions are as follows:

- Sum
- Maximum
- Minumum
- Average
- Median
- Mode
- Count
- Variance
- Standard Derivation

Our software is highly flexible and generic. People can select the feature in the dataset that will be performed for statistical analysis. It is also possible to combine features for creating the input key.

We used Java for Map-Reduce functions. For GUI, we used Qt with C++. We connect these with command line arguments.

4. Use Case Scenario:



5. Performance Evaluation:

Elapsed times of a statistical analysis processing (SUM function) for some dataset sizes are given below:

Dataset Size (# of rows)	Elapsed Time (seconds)
10	20.21
10.000	20.51
100.000	23.13

6. Comments:

We learned a lot about network communication and big data techniques in this project.

7. Screenshot: