

Map Reduce implementation

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Instructions to install and run

Java 11 was used to complete this project. Therefore, to have better performance and experience, Java 11 should be used.

openjdk 11.0.14 2022-01-18

OpenJDK Runtime Environment (build 11.0.14+9-Ubuntu-0ubuntu2.20.04)

OpenJDK 64-Bit Server VM (build 11.0.14+9-Ubuntu-0ubuntu2.20.04, mixed mode, sharing)

To compile, it's quite straightforward. One can open the folder where contains all the source code, then just run `javac *.java`. Then 3 terminal should be opened in same directory. Let name them main, daemon 0, daemon 1.

On daemon 0, run `java Daemon 0`. Do same thing with daemon 1.

On main, run `java Split data.txt 2`. Wait it complete, then now run `java Launch 2`. Finalresult.txt should be seen in the directory.

Description

- Split.java
 - Open socket to other nodes
 - Then send each chunk of a file to each node
- Launch.java
 - Invoke `Daemon.call()`
 - After **all** `DoneCallback.completed()` receive all files, `reduceMap()` is called.
- Daemon.java
 - Act as `ServerSocket` to receive file from Split
 - Then act as RMI server
 - When `Daemon.call()` is invoked, while reducing file, Daemon act as `ServerSocket`
- DoneCallback.java
 - When `executeMap()` is done, `DoneCallback.completed()` open socket to receive file from `ServerSocket`
- WordCount.java
- DaemonInterface.java
- MapReduceInterface.java
- CallbackInterface.java

Unfortunately, `notify()`, `wait()`, `synchronized` methods were NOT used to implement `CallBack` because we forget them exist.