Pcysys
Home Assignment – Password Cracker

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Introduction:

My implementation is based on a Client-Server Programming, whereas the server is the Master and the clients are the Minions.

The master reads the input file and stores the hashes in a data structure. Then it waits for clients requests. The user needs to choose how many machines will work in parallel, and then opens number of clients accordingly.

The master divides the cracking workload between the minions in that way:
It starts from the first hash in the file. It starts sending this hash to the minions with different ranges. Every minion gets a range of million phone numbers (arbitrary decision – can be changed to another range), so that the first minion gets the range: [0500000000, 0500999999], the second minion gets the range: [0501000000, 0501999999], and so on. If one of the minion successes in cracking the hash, then the master stops sending this hash to the minions, then prints the password and move on to the second hash.
The program stops after all the passwords were cracked, and then all the clients are closed. If any client will try to reconnect, then it will be closed immediately, and the master will be closed too.

Remarks:

- A new minion can join also in the middle of running, so it will get the next range.
- If a minion stops working (crashes), then another minion gets his range, and the other minions continue working.
- If the master crashes, then all the minions are closed immediately.

Assumptions:

- The name of the input file is given in the command line (in args[0]). for example: hashes.txt .
- The input file is in the same directory as the code files
- The file is line separated between every hash.

Instructions for running the code:

1. Save the code files in a directory with the input file/s.
2. Open the cmd in Windows – that will be the window of the master.
   - Go the directory from step 1 and compile the Master.java file (javac Master.java)
   - Run the Master class (java Master NAME_OF_FILE)
3. Decide how much clients you wish to work – denote as X, and then open X cmd windows – every window is a different client. Then compile the Minion.java file in one of them, and in each client run the Minion class (java Minion).
4. The program starts running and will end after all passwords will be cracked.