Assignment 3 – Team Infinity

Workflow

1) Master.java
   - Schedule every line of the password/hint document to the working actors (RoundRobinRoutingLogic)
   - Save the number of lines/passwords to be encrypted

2) Worker.java
   - Using the given chars of the password with length n, generate all possible sequences of length n-1 → there are n groups of sequences, in every group one of the n chars is missing
   - For every group of sequences: encrypt all possible sequences with SHA-256, compare them with every hint
     - as soon as one hint is cracked, we know that the missing character of the group is not part of the password and we move on to the next group (that way we might not encrypt every hint if some hints refer to the same character)
     - if we cannot find a hint in all possible sequences of a group: the missing character of the group might be part of the password, so we save it
   - For all characters that might be part of the password (m characters) we use the algorithm (given in the exercise sheet) that generates all possible strings of length k that can be formed from a set of m characters (k is the given length of the password)
   - Encrypt all of the possible strings with SHA-256 and compare them to the encrypted password, as soon as there is a match send the decrypted password to the sender

3) Master.java
   - Send the received decrypted passwords to the collector (CollectMessage)
   - When the number of received passwords is equal to the saved number of lines/passwords to be encrypted we send the final message (PrintMessage) to the collector and shut down the system