Information Security Project Report

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Section:

CS-A

Submitted to:

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Project Overview:

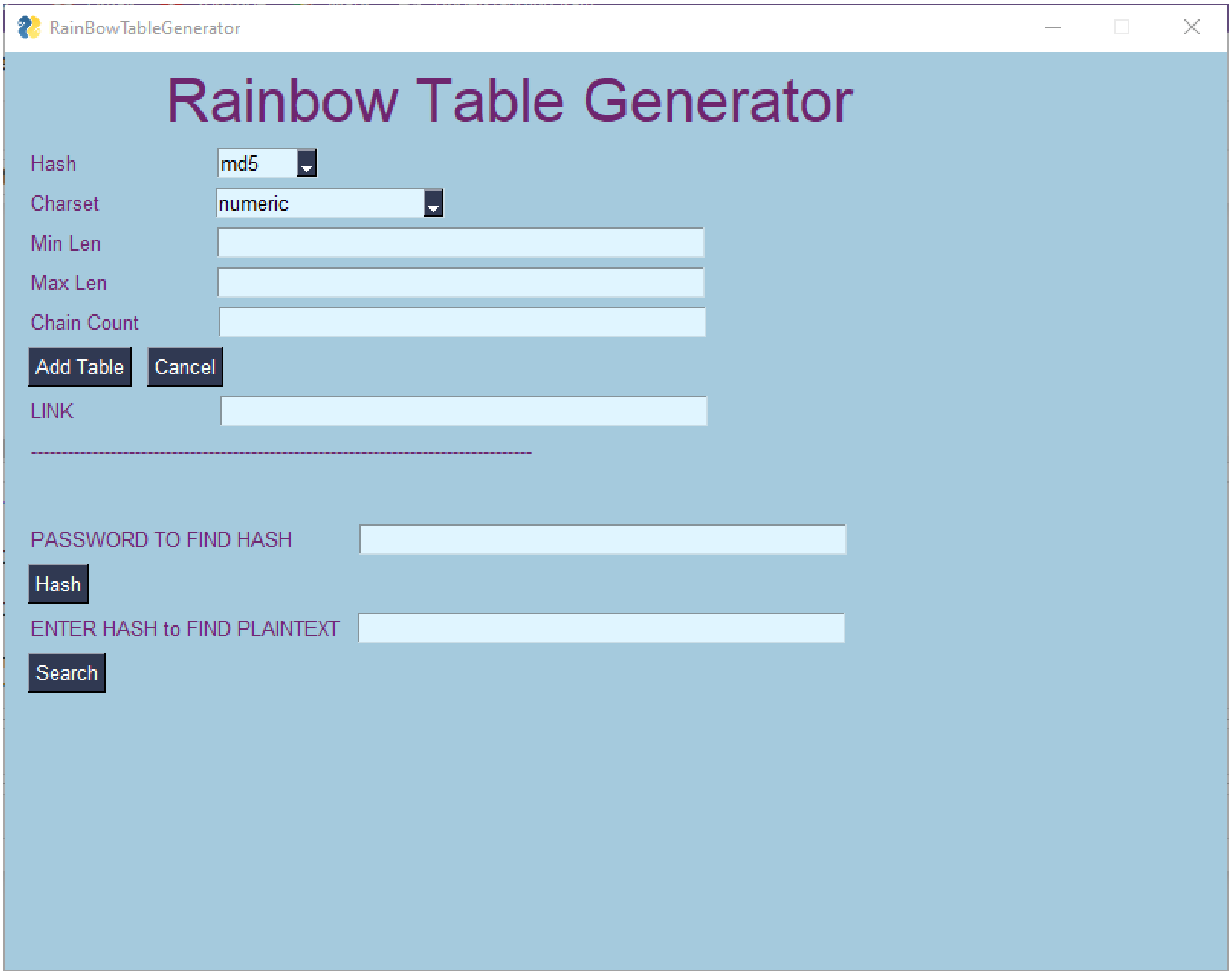
Passwords in the system are not stored as simple plain text whenever a user is signed up, rather hashed using encryption. A rainbow table is a lookup table that stores precomputed hashes of the plaintext of the selected hashing algorithm and charset. These hashes are then stored against their plaintext. For cracking a hash of the plain text is matched with the start of the chain, if matches then the entire chain is searched till the required plain text is found.

Working

Based on the hashing algorithm and charset selected, rainbow table generator starts calculating hashes.A hash function is a 1-way function, which means that it can’t be decrypted once hashed. Whenever a user enters a password, it is converted into a hash value and is compared with the already stored hash value. If the values match, the user is authenticated.Unlike bruteforce attack, which works by calculating the hash function of every string present with them, calculating their hash value and then comparing it with the one in the computer, at every step. A rainbow table attack eliminates this need by already computing hashes of the large set of available strings. For example, hash(1234) = “81dc9bdb52d04dc20036dbd8313ed055” so this hash is stored against its plaintext 1234. Depending upon the length of the chain, hash value is reduced and rehashed and chain is formed.

If the chain length is 2 then hash value reduced, reHash(81dc) = “ee399c9308de5cc0c5a5d87a84c064ef” this process is continued till we get the required chain length

UserInterface:



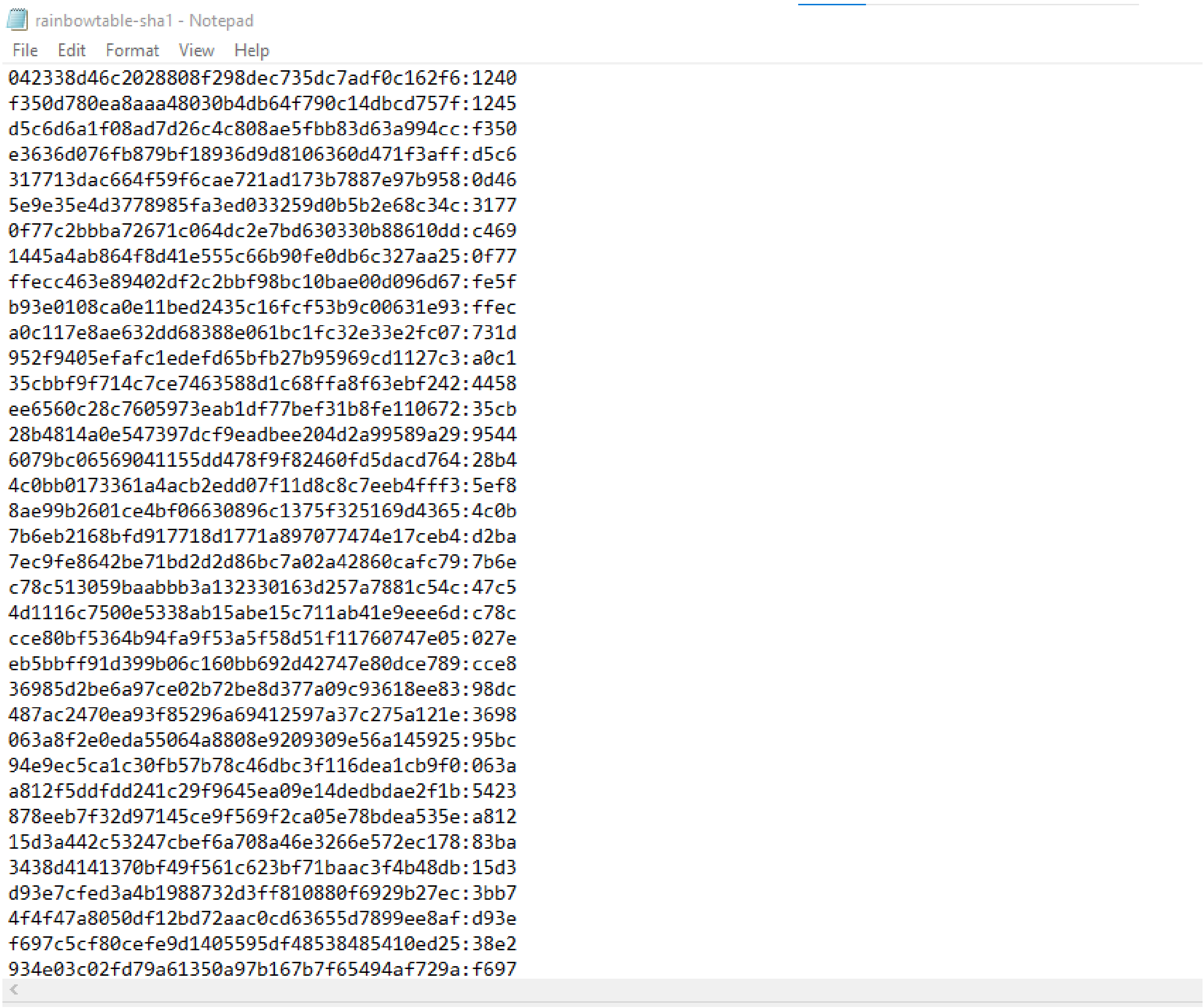
RainBowTableGenerator

Rainbow Table Generator

Hash: md5

Charset: numeric

Table Format:



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e3636d076fb879bf18936d9d8106360d471f3aff:d5c6
317713dac664f59f6cae721ad173b7887e97b958:0d46
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