Project Euler #79: Passcode derivation



Problem Statement

This problem is a programming version of Problem 79 from projecteuler.net

A common security method used for online banking is to ask the user for three random characters from a passcode. For example, if the passcode was 531278, they may ask for the 2^{nd} , 3^{rd} , and 5^{th} characters; the expected reply would be: 317.

The text file, keylog.txt, contains fifty successful login attempts.

Given that the three characters are always asked for in order, analyse the file so as to determine the shortest possible secret passcode of unknown length.