

## 1 Prediction

The chance any of the first five characters the final correct character is 0%.

The chances the sixth most recent character is correct is 10%; the sixth and fifth most recent characters 1%; sixth, fifth, and fourth 0.1%; sixth, fifth, fourth, and third 0.01%; sixth to second 0.001%; and sixth to first 0.0001%.

The chance for an input to be the final character in the unlock sequence is therefore 0.0001% after 5 characters have been entered.

The average time for the code to be guessed should then be  $\frac{1}{0.000001} + 5 = 1000005$  seconds or approximately 4.63 hours.

## 2 Reults

After 33857348790 input characters attempts and 33890 unlocks, my code unlocked after an average of 999036 characters. An error rate of 0.0009689%.