

CSCI 476 Computer Security

Exercise for Chapter 1.

(1) Benny is a thief who tried to break into an ATM using a screwdriver, but was only able to break five different keys on the numeric keypad and jam the card reader, at which point he heard Alice coming, so he hid. Alice walked in, put in her ATM card, successfully entered her 4-digit PIN, and took some cash. But she was not able to get her card back, so she drove off to find help. Benny then went back to the ATM, and started entering numbers to try to discover Alice's PIN and steal money from her account. What is the worst-case number of PINs that Benny has to enter before correctly discovering Alice's PIN?

(2) Suppose a network computer virus is designed so as soon as it is copied onto a computer X , it simply copies itself to six of X 's neighboring computers, each time using a random file name, so as to evade detection. The virus itself does no harm, in that it doesn't read any other files and it doesn't delete or modify any other files either. What harm would be done by such a virus and how it would be detected?