Computer Viruses and security threats of the web

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Overview

In this report I will explain several aspects of computer security namely, computer viruses and explain what they are, what they can do and what has been done to counter them. I will also explain all of this and more in a structure manner. We will first discuss in the literature review, the origins of computer viruses, how they came to be and what we the motivations of these computer virus. I will then explain what counter measures have been done to prevent if not limit the amount of damage, the afflicting virus has caused to the system and their users. In my technical analysis I will break down the components of a computer virus and explain the inner workings of 3 popular types of computer virus I.e. Trojans, worms and malware/spyware. I will also discuss the state of the art approaches employed by popular internet security forms such as McAfee, AVG and Norton to counter these types of computer viruses.

In the modern problems section I will also discuss the ever growing problem of phishing, its origins and purpose and what progress has been done to counter phishing, at the end of the section I will give a detail analysis on the progress made by security firms and whether or not it has been effective or counter phishing or not.

To conclude I will summarise my finding on the progress to counter the phishing problem and provide my perspective on what has been done correctly and what can be improved, finally I will give some advice to readers, on how to build upon this analysis and provide a set of advice to further counter the phishing problem.

# Background Information

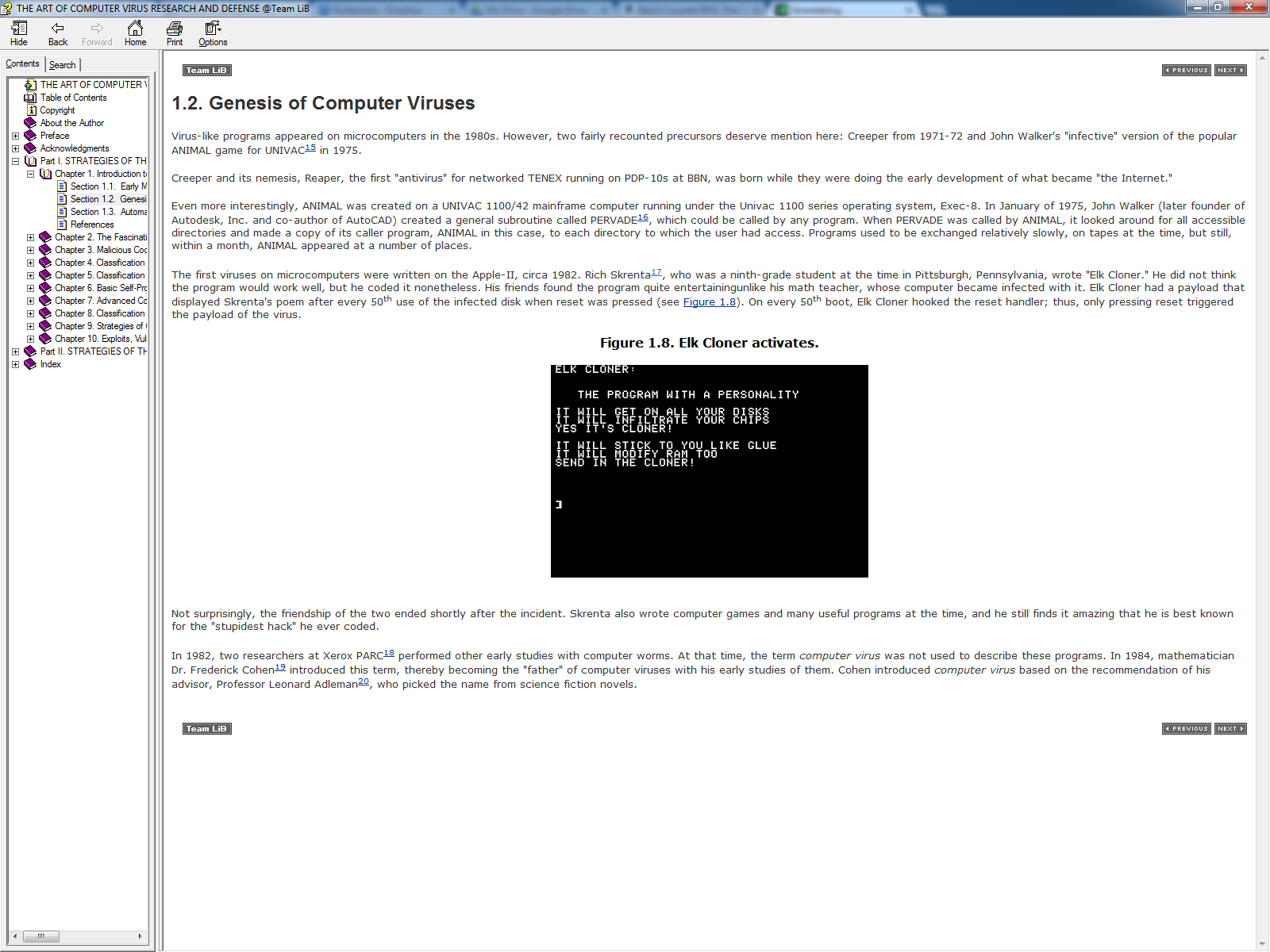
This sections serves to provide an insight on a computer virus, from what it is, however it acts and its characteristics, we will also discuss the approach used to develop anti-virus solutions, again this section will help identify what they are and how they work in theory, finally we will discuss in detail a particular form of internet threat called phishing, which will serve to be the main topic of discussion for further chapters namely the analysis of phishing and anti-phishing solutions. Which talks about a critical analysis on the performance of anti-phishing solutions and anti-phishing techniques, and provides the authors perspective on these techniques and solutions.

## Computer Virus

Virus-like programs first appeared in computers in the 1980’s, however there was two famous examples before the term computer virus was coined, which were Creeper from 1971-72[1] and John walker’s “Infective” version of UNIVAC[cite here[], a popular ANIMAL game in 1975. In fact, the Creeper virus and its rival Reaper[1], which is the first “antivirus” solution for systems within a network namely, TENEX running on PDP-10s. Were both born during the early development what became “the Internet”[1].

The first virus on microcomputers were written on the Apple-ii circa 1982, by Rich Skrenta[1], where he wrote a virus called “Elk Cloner” which in time he commented that he is best known for what he called the “stupidest hack” he ever coded[1]. The Elk Cloner virus was initially thought to not be able to work by its author who continued with the hack despite this opinion. When the virus was deployed, its intention was for its comedy value however, the teachers whom were the initial victims of the Elk Cloner virus proved to be unamused by this. The Elk Cloner virus works by activating its payload (subroutine ) that displayed the author’s poem after every 50th use of the infected disk, when the system was resettled, specifically on the 50th boot Elk Cloner hooked the reset handler meaning the payload would only activate after pressing the reset button. The result is shown in the figure below (Fig 1).

(Fig 1 – Elk Cloner activates [1]).

 Interestingly enough the term “Computer Virus” and thus the classification of these programs, was not introduced until in 1984, a mathematician called Dr. Frederik Cohen[2] introduced term which consequently, named him the “father” of computer viruses due to his early studies of them. Funnily enough the term “Computer Virus” came from science fiction novels, that was picked up and recommended to Dr Cohen’s by his advisor Professor Leonard Adleman [1].

In Cohen’s work a formal mathematical model for computer viruses was created in 1984[1] .

# Literature review

-Background info

--what a virus is

--forms of virus

--examples of virus

# Technical Analysis

# Modern Day Problems

# Conclusion

# Bibliography

[1] P. Szor, *The art of computer virus research and defense*. 2005.

[2] F. B. Cohen, *A Short Course on Computer Viruses*. Wiley, 1994, p. 288.