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Computer Network Attack, Defense, and Forensics in Two Scenarios

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Many different methods exist for infiltrating a PC locally or over the internet. This can be done though the use of malicious software such as viruses, worms, malicious applets, spammers, keyloggers, rootkits, and the like. The purpose of our study was to, first off, study the effects of malicious software downloaded and installed onto a PC running Windows XP Professional, and the ways the software hijacks the machine and spreads from the user's PC. The second half of our project utilized everything we learned from analyzing this malicious software and applying it to a real-life scenario. For our scenario, we coded a specific kind of virus (aptly named a "cryptovirus"), and attacked from one machine over the network to another machine. After the attack was carried out, forensics were applied, and ways of defending against the attack in the future were determined. The victim machine then assumed the role of the attacker PC, and a stronger cryptovirus was created to attack the other PC. Forensics and a defense strategy were also applied to this attack.

Daniel is a junior attending the University of Missouri-Rolla, majoring in Information Science & Technology with an emphasis in Computer Science. He is the son of Jay and Patricia Nieters and is from St. Louis, Missouri. On campus, he is actively involved in UMR's music department and is one of the founding fathers of UMR's newest fraternity, Delta Sigma Phi. Off campus, he became an Eagle Scout under Boy Scout troop 169, and enjoys playing music in his spare time.