14:332:424 Introduction to Information and Network Security Fall 2017

Assignment 1

Due: September 29, 11:55pm

In this assignment, you will apply security engineering knowledge to solve a simplified real-world problem.

Consider a company whose operations are housed in two buildings on the same property: one building is headquarters, the other building contains network and computer services. The property is physically protected by a fence around the perimeter. The only entrance to the property is through the fenced perimeter. In addition to the perimeter fence, physical security consists of a guarded front gate. The local networks are split between the Headquarters' LAN and the Network Services' LAN. Internet users connect to the web server through a firewall. Dial-up users get access to a particular server on the Network Services' LAN.

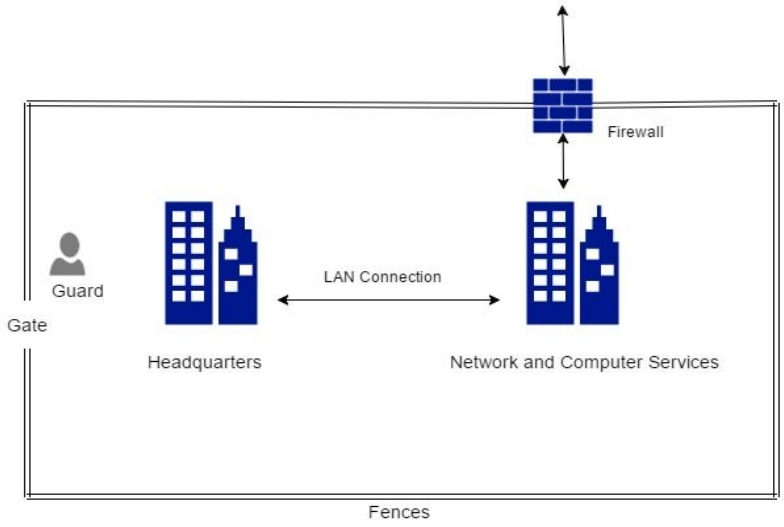

Figure 1 Illustration of the Company

Q1 (30pts). List all possible attacks you think adversary can perform to the company. You can make reasonable assumptions on the given scenario if needed. (Hint: potential attacks can be from physical property, software, network and personnel aspects. Extra points could be awarded for interesting answers.)

Q2 (20pts). For each attack on your list, does it violate the CIA triad? If it does, which parts of the CIA triad are violated? Please explain.

Q3 (20pts). What potential damages or losses the company could expect from each attack? Give your evaluations on each attack in the levels of High Risk, Median Risk and Low Risk and explain why.

Q4 (30pts). How do defenders detect each attack? What specific responding action(s) can defender take to prevent that attack?

Please do this assignment in the question-by-question manner. You can give labels for each attack you list in Q1 and use the labels to refer the specific attack in the following questions.