**CS 3750 [Fall 2017]**

**Assignment 3**

**Due date: Thursday, 28 September 2017, by 11:00 p.m.**

***Print your name:* Rick Boles**

**Answer the following questions:**

1. Suppose there is a new malware called *NewMal*. Also, suppose you have new malware detector software, called *Sleuth* that can detect *NewMal* with 95% accuracy (that is, if a computer is infected by *NewMal*, the *Sleuth* can detect it as ‘infected’ 95% of the time, and if a computer is not infected then 95% time *Sleuth* will correctly detect it as ‘not infected’). It is found that *NewMal* would infect a computer with a probability of 3%. Suppose, you run *Sleuth* on your computer and it identifies your computer as ‘infected’ by *NewMal*. What is the chance (in %) that your computer is really infected by the malware *NewMal*? Explain your answer or show your calculation. [5 points]

Without the sleuth program you are sitting at 3% or .03 chance that you have the NewMal. 95% of that 3% is taken away so .03\*.05 gives you 0.0015 or .15% that you still have NewMal on your device.

1. Suppose you want to use a computer to login to your email account that you suspect is infected by a keylogger software. Assuming that you can have both a web browser window and a text editor window open at the same time, can you think of a scheme that allows you to type in your username and password such that the keylogger would not be able to discover the id and the password. You can assume that the keylogger does not have any feature like screen capture or mouse event capture. Explain your scheme. [5 points]

You can take and write out the entire alphabet/symbol mapping on the notepad. Using copy and paste to get on the characters you need from the notepad and pasting them into the browser.

1. Suppose that while trying to access a collection of short videos on a web site, you see a pop-up window stating that you need to download and install a custom video player to view the videos. You approve the installation and the videos play excellent on the new player. Is your computer subject to any threat? Explain. [5 points]

You have more than likely downloaded a trojan horse as the result of a phishing attempt. The video player works but you probably have extra malicious software attached to it. It might also contain adware.

1. Consider the following code fragment:

{ … } // some code doing useful task

if(date == 13 && day == “Friday”)

crash\_system();

{ … } // some code doing useful task

What type of malware is this? Explain how it affects the computer on which it is running. [5 points]

This is a logic bomb it will not cause an issue until it reaches a certain point. In this case Friday the 13th. It goes from being in a useful program to causing a system crash.

**Submission instructions:** write your name at the top and include answer to each question on this document preferably after each question. Please do not write your answers on a separate document or file. Submit the file through BlazeVIEW dropbox.