

## Fall 2019: CSCI 430: Introduction to Computer and Network Security

### Assignment 4

**Deadline.** Dec 5, 2019, 9pm.

**Submission instructions.** Upload the virtual machine image and the reports to a directory named “yourname-csci430-fall2019-assignment4” in your google drive and share it with the instructor ([mnaveed@usc.edu](mailto:mnaveed@usc.edu)) and TA ([hsaleem@usc.edu](mailto:hsaleem@usc.edu)). You should email us the link to your google drive directory with the subject “CSCI430: Fall 2019: Assignment 4 Virtual Machine Image”.

**Problem 1:** Install Ubuntu Server operating system in a virtual machine using Virtual Box. This server will be used as a web server to host a website. Your job is to ensure that the operating system installation and configuration is hardened as well as the web server is secure. You could use any freely available tools to ensure that your virtual machine, operating system, web server, and any other software you use is secure. Write a report of up to 5 pages detailing the process you followed to ensure your operating and web server is secure.

**Problem 2:** Develop a simple website with a user interface backed by a mysql database that will be hosted on the web server you installed in Problem 1. Your website should allow users to create an account on your website using their email address, first and last name, and date of birth. Once a user creates an account, your website should allow the user to store pictures in their account. You should ensure that your website is secure, only the correct user can download their pictures, and users have continued access to their data. Write a report of up to 5 pages on the process and steps you followed to ensure that your website is secure.