UC Computer Science and Software Engineering

COSC362 Data and Network Security
Semester Spring, 2021

Lab 1: Introduction

Exercises from Lectures 1 and 2.

Note that the following questions do not have exact answers and are mainly intended to promote reflection and discussion.

QUESTION 1

Visit the National Vulnerability Database `http://nvd.nist.gov/`. Choose the Vulnerabilities → Search & Statistics page and then find out, using the search function, how many security vulnerabilities have been issued in the last three months for:

- common desktop and mobile operating systems;
- popular web browsers.

What are you (or should you be) doing to minimise the impact of these on your own systems?

QUESTION 2

For each of the following applications, consider threats concerning each of: *Confidentiality*, *Integrity*, and *Availability*. Which type of threat would you rate as most important in each use case, and why?

(a) An online medical database
(b) A mobile banking application
(c) A supermarket website

Hints: There is no single correct answer to this question. We could come up with a matrix with columns corresponding to the CIA triad and rows corresponding to the above use cases, with cells containing threat rates such as high, medium and low.

QUESTION 3

In his book (Book 1), Stallings lists data integrity and authentication exchange as two security mechanisms relevant for the provision of the availability security service. See the table in Lecture 2, slide 26, and discuss how these two mechanisms can help in providing *availability*. Could they also hinder the provision of availability?