Linnaeus University
Department of Computer Science
OF

2020-12-01

Program Security

Practical work #3, 1DV700, HT20

In this practical work, you will take the role of a software security consultant. This assignment should be done in groups of 4 people. Form groups yourself by talking to other students in class or on Slack. The same groups will be used for assignment #4 as well. Assign one student as project leader. The project leader must notify the teaching assistants about who is in the group and. The teaching assistants may allocate some additional student to your group to fill it out if needed.

Once the group is formed you need to set up a number of project meetings. Read the provided document in MyMoodle titled *Loco News – Program security.pdf* to get familiar with the background and demands of the company. Then read the document *Top-10-Flaws.pdf* to learn about typical flaws made when developing software. Also think back on the flaws we discussed during lectures, but also other flaws or problems you can come up with.. Discuss this in the group and what extra information you need to solve the assignment. What security concerns are there in the development of the proposed application? What advice can you give to Loco News in this area?

To give you more information about the company or the proposed application you can use the tutoring times when you can meet representatives from Loco News. You can also book extra meetings with them if needed.

This assignment requires you to compose a software design document of the application that the company would like to be developed with an emphasis on security. You are required to follow the provided template *Assignment 3 Report template.* Your report should include a description on the following topics:

- An overview of the software design document
- An overview of the software architecture that would be implemented. This could be made possible with the help of figures/graphs or by making a list of the major software components.
- Limitations of the proposed application. You should think about what areas could prove to have additional constrains, e.g. licensing, performance, hardware/software requirements, etc.
- A description of the software that a programmer would have to use, in order to implement the proposed application. This list includes, but it is not limited to programming language, operating system, compilers, etc.
- A description of the software mechanisms that would be used in the application. You should create a narrative, along with a flow-chart or pseudo-code that would show how you plan to carry out the implementation of the software.
- A description of the security mechanisms that you plan to implement in the application. You should give examples of the standards, methods and techniques that would be in place to protect the previously described software mechanisms. You should present in a structured manner how they would operate within the application.
- Examples of the operation of the application from the user's perspective. You should think about scenarios that would commonly occur in the daily cycle of the software. Consider events, actions and parameters that would showcase the functionality and your proposed mechanisms.

Your group report should feature the shown chapters and subsections, but you are free to add more if you would like to.

Submit the report at latest 10 January