

Embedded Systems Security'18

Laboratory assignment 3 (must complete)

weeks of April 22nd trhu May 8th

This list is an introduction to programming JavaCards. You will need a working environment for future assignments, so make sure you have everything installed and know what is the workflow. For now, we will be using card emulators (CREF, supplied by Oracle in JCDK – JavaCard Development Kit) and/or jcardsim. Next, we will work on physical readers and cards.

Assignment 1 Install the Java Card Development from Oracle's website:

www.oracle.com/technetwork/java/embedded/javacard/downloads/javacard-sdk-2043229.html. There's a serious problem with getting CREF to work under linux, so for now only Windows installation is of interest to us. Linux users can try to install JCDK manually (information on this can be provided).

Assignment 2 Compile the hello world example from

sajithforu.blogspot.com/2014/10/java-card-helloworld-applet.html. Run it on CREF simulator. All information can be found here <https://docs.oracle.com/javacard/3.0.5/index.html>

Assignment 3 Follow the quick start guide for jcardsim at

<https://jcardsim.org/docs/quick-start-guide-using-in-cli-mode>

Assignment 4 Modify the helloworld example from assignment 2, so that:

- on instruction INS = 0x12 the applet will respond with Embedded Sec Systems
- on instruction INS = 0x21 the applet will respond with whatever data is provided in the APDU but in *reversed* byte order.