Goal/Assessment

Goal
Where are we going? What is expected? What will the student be able to do, know, and value at the end?

The student will be able to describe tag architecture, the Gen2 tag finite state machine, and tag threats and mitigation techniques.

Assessment
How do we measure? How will the student be assessed in the lessons and at the end of the module?
Use general terms. Present this to the student at the beginning of the module.

A student should:

- Be able to describe the tag architecture.
- Be able to describe the three basic operations between readers and tags, how Gen2 accesses individual tags, and the purpose of sessions in Gen2.
- Be able to list general mitigation techniques for preventing counterfeiting of tags, describe Gen2 techniques to mitigate tampering with tag data and to mitigate tag cloning, and list different types of side-channel information and the corresponding attacks.

Hook
Pique the student’s interest using a case study, interesting story, experiment, or disaster.

Experiment: Students will be working on a TagSense or Intel reader through a user interface application coded in Visual Basic. During the experiments, the students will read a tag, analyze the data from the tag, write to a tag, lock/unlock a tag, and kill a tag.
Lessons

Divide the module into logical lessons (4-5 days). Create lessons, activities, experiments, homework and/or quizzes based on these grain size lessons.

Lesson: Tag Architecture

Lesson: EPCglobal Gen2 Tag Finite State Machine

Lesson: Tag Threats, Risks, and Mitigation

Culminating Activity

Tie it all together returning to the big idea. Go full circle. Create a culminating experience that ties lessons back to the module theme. Create module-level rubric and each topic is one of the lessons below.

At the end of the experiment, let each student/group write a special pattern to their tag, and exchange tag with another team. Then try to read from / write to each other’s tags (note the tag may be locked), and report the findings.

Assessment

Assess the results using tools such as paper/pencil, programming, simulation, demonstration, experiments, and projects. Paper and pencil homework assesses what you know. Programming, simulations, demonstrations, and projects assess what you can do.

Assessment:

Use rubric based on lessons. Each lesson is a row in the rubric.
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