CSCI 283 - Graduate Computer Security - Fall 2010
George Washington University

Homework 3

due 30 November, 6 pm.

50 points

This HW is not required for students in CS 172; it may be submitted by them for extra credit.

Policy on collaboration: All examinations, papers, and other graded work products and assignments are to be completed in conformance with The George Washington University Code of Academic Integrity. You may discuss HWs among yourselves, and work on them in groups. However, each student is expected to write his or her own HW out independently; you may not copy one another's assignments, even in part. You may not collaborate with others on the test and final.

You are expected to cite all your sources in any written work that is not closed book: papers, books, web sites, discussions with others - faculty, friends, students. For example, if, in a group, one student has a major idea that leads to a solution to a HW problem, all other students in the group should cite this student.

You may not refer to solutions to previous years' problem sets, or ask for help students from previous years, except the TA.

Any violations will be treated as violations of the Code of Academic Integrity.

PLEASE submit all HW on Blackboard only. Name your files:
CS283_HW3_LASTNAME_FIRSTNAME.doc or .pdf or
CS172_HW3_LASTNAME_FIRSTNAME.doc or .pdf

After having read the paper for HW 2, answer the following:

1. (8 points) Describe the security policy of a system that avoids the major threats described in the paper. (at most half a page)

2. (20 points) Describe a system that satisfies the security policy to the extent possible. Include whatever protocols you wish to use, and any other security measures. (at most 2 pages)

3. (5 points) State the assumptions required for your system in problem 2 to be secure. (at most half a page)

4. (12 points) Provide the attack tree, with probabilities **and** cost estimates, of attacks on your solution to Problem 2. Notice that the adversary need not respect your assumptions. What is the most practical attack for the adversary? Can you protect against it? Why or why not? (at most one page for attack tree, and half a page for everything else)

5. (5 points) What are the similarities between your answers to problems 3 and 4? (at most one-third page)