Ground Rules. You may choose to work with one other student if you wish. Only one submission is required per group, please ensure that both group members names are on the submitted copy. Work must be submitted in hard copy by the start of class. There is no paper reading for this two week period.

1. Threat Models and Risk Assessment. Suppose the course instructor has created a database of all information for this course: homeworks, exams, handouts, and grades. Create a detailed threat model for this database: what should the security goals be? What are reasonable attacks, and who are the potential attackers? What threats should we explicitly exclude from consideration?

Now assume that the database is stored on the instructor’s personal laptop, with no network card and no floppy disk drive. Propose at least two security mechanisms that would help counter your threat model (e.g. file or disk encryption, a laptop lock, a safe to store the laptop, a Kevlar laptop sleeve, relocation to Fort Knox . . . ), and analyze the net risk reduction of both. You should justify your estimates for the various incidence rates and costs. While we do want to see numbers for this part, don’t worry about figuring out exact costs or risk reductions, guess at some reasonable numbers but don’t spend very long at this part of the assignment.

2. How the Internet Is Glued Together. What are the five layers in the Internet protocol stack? What are the principal responsibilities of each of these layers?


- Explain the similarities and differences between a client and server.

- How does a host know which process to deliver received network traffic? What mechanism does a process directly use to send data to and from remote hosts.

\[n.b.: \text{this database does not exist; don’t waste your time trying to attack it!}\]