CS361 Questions: Week 4

These questions relate to Modules 4 and 5. Type your answers and submit them on Canvas by 5pm on Thursday, February 18, 2016.

Lecture 17

1. If a computer system complies with the BLP model, does it necessarily comply with non-interference? Why or why not?

2. What would the NI policy be for a BLP system with subjects: A at (Secret: Crypto), B at (Secret: Nuclear)?

3. Can covert channels exist in an NI policy? Why or why not?

4. If the NI policy is $A^- > B$, in a BLP system what combinations of the levels “high” and “low” could A and B have?

Lecture 18

1. Why do NI policies better resemble metapolicies than policies?

2. What would be L’s view of the following actions: h1, l1, h2, h3, . . . , hj, l2, l3, . . . , lk

3. What is difficult about proving NI for realistic systems?

Lecture 19

1. Explain the importance of integrity in various contexts.

2. Why would a company or individual opt to purchase commercial software rather than download a similar, freely available version?

3. Explain the difference between separation of duty and separation of function.

4. What is the importance of auditing in integrity contexts?

5. What are the underlying ideas that raise the integrity concerns of Lipner?

6. Name a common scenario where integrity would be more important than confidentiality.
Lecture 20

1. Give examples of information that is highly reliable with little sensitivity and information that is not so highly reliable but with greater sensitivity.
2. Explain the dominates relationships for each row in the table on slide 4.
3. Construct the NI policy for the integrity metapolicy.
4. What does it mean that confidentiality and integrity are “orthogonal issues?”

Lecture 21

1. Why is Biba Integrity called the “dual” of the BLP model?
2. Why in the ACM on slide 5 is the entry for Subj3 - Obj3 empty?
3. If a subject satisfies confidentiality requirements but fails integrity requirements of an object, can the subject access the object?

Lecture 22

1. What is the assumption about subjects in Biba’s low water mark policy?
2. Are the subjects considered trustworthy?
3. Does the Ring policy make some assumption about the subject that the LWM policy does not?
4. Are the subjects considered trustworthy?