March 5, 2014 Outline

Reading: §17

Assignment due: Homework #4, due March 17, 2014 (no lates!!!)
Project, due March 21, 2014

1. Covert channels
   a. Storage vs. timing
   b. Noise vs. noiseless
   c. Existence
   d. Bandwidth

2. Covert channel detection
   a. Shared Resource Matrix Model
   b. Information flow analysis
   c. Covert ow trees

3. Shared resource matrix methodology
   a. Identify shared resources, attributes
   b. Operations accessing those attributes
   c. Building the matrix
   d. Issues about the methodology

4. Capacity
   a. When is bandwidth of covert channel 0?
   b. Analysis
   c. Measuring capacity

5. Mitigating covert channels
   a. Preallocation and hold until process terminates
   b. Impose uniformity
   c. Randomize resource allocation
   d. Efficiency/performance vs. security