Outline for January 17, 2007

1. Greetings and Felicitations!

2. Stealing
   a. Definition: \(\text{can\text{*steal}(r, x, y, G_0)}\) true iff there is no edge from \(x\) to \(y\) labeled \(r\) in \(G_0\), and there exists a sequence of protection graphs \(G_0, \ldots, G_n\) such that \(G_0 \rightarrow^* G_n\) in which:
      i. \(G_n\) has an edge from \(x\) to \(y\) labeled \(r\)
      ii. There is a sequence of rule applications \(\rho_1, \ldots, \rho_n\) such that \(G_{i-1} \rightarrow G_i\); and
      iii. For all vertices \(v, w\) in \(G_{i-1}\), if there is an edge from \(v\) to \(y\) in \(G_0\) labeled \(r\), then \(\rho_i\) is not of the form "\(v\) grants \((r, y)\) to \(w\)"
   b. Example
   c. Theorem: \(\text{can\text{*steal}(r, x, y, G_0)}\) iff all of the following hold:
      i. there is no edge from \(x\) to \(y\) labeled \(r\) in \(G_0\);
      ii. there is a subject \(x'\) which initially spans to \(x\), or \(x' = x\); and
      iii. there is a vertex \(s\) with an edge to \(y\) labeled \(r\) in \(G_0\) and for which \(\text{can\text{*share}(r, x, s, G_0)}\) holds

3. Conspiracy
   a. Access set
   b. Deletion set
   c. Conspiracy graph
   d. \(I, T\) sets
   e. Theorem: \(\text{can\text{*share}(r, x, y, G_0)}\) iff there is a path from some \(h(p) \in I(x)\) to some \(h(q) \in T(y)\)

4. Schematic Protection Model
   a. Model components
   b. Link function
   c. Filter function
   d. Example: Take-Grant as an instance of SPM
   e. Create operations and attenuation
   f. Flow functions, maximal state
   g. Safety analysis