# CS6600 Homework 7

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## I. Chapter 8 Problems

1) Sanitized objects must be in their COI class because sanitized data contains information that is accessible by subjects without creating a COI within the companies data (i.e., if it's public data), so to keep track of that without restricting the data they must be in their class with only sanitized objects.
2) An algorithm to generate an access control matrix *A* from a given history *H* could look something like this.
   - For each subject *s* in *H* append a new row and column to *A*.
   - For each object *s* in *H* append a new row and column to *A*.
   - This gives us ACM *A[(#S+#O),(#S+#O)]* set all initial rights to **allowed**.
   - For each *h[s,o]* in *H* set all cells in *For each o‘ in O‘: A[s, o‘]* rights to **not allowed** if o is not sanatized.
     - Where *O‘* is a set of all values where $CD(O‘) \Rightarrow CD(O)$.
3) While the BLP model cannot show history over time, the CWM can at any iteration support the BLP model. Take a given CWM construction and make the following modifications to support BLP.
   - Sanatized and unsanatized sets represent a security level S for sanatized and U for unsanatized where S dom U.
   - Each CD and COI object represent categoires a subject has initial access to (i.e. $s1 = (S, \{a, c, b, s\})$).
   - Each time a subject access an object in a COI class the objects in all other COI classes where $CD(O‘) \Rightarrow CD(O)$ are removed from the subjects set.

   While this generally gives most subjects a top-level security clearance and each category is its object, it does fit the rules for BLP. Ideally, you may have another set of subcategories to capture the CD and COI sets if you want to convert it back to a BLP model.

## II. Chapter 9 Problems

3) Test
4) Test
5) Test
6) Test

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