

CS590U: Access Control: Theory and Practice

Spring 2005

Assignment #4 Due: Thursday, Feb 17, 2005.

Problem 1 (10 pts) Explain what you understand are the main differences between confidentiality policies and integrity policies.

Problem 2 (10 pts) How would you compare the Biba integrity models and the Clark-Wilson integrity model.

Problem 3 (20 pts) List the two or three most significant new insights you took away from the Clark-Wilson paper and the most significant flaws or weaknesses of it (if any).

Problem 4 Read the following two papers (available from the course syllabus page, Readings for Feb 10):

- D.F.C. Brewer and M.J. Nash: “The Chinese Wall Security Policy”, in Oakland’1989.
- R.S. Sandhu: “Lattice-Based Enforcement of Chinese Walls”, in Computer & Security, December 1992.

And do the following:

- (10 pts)** Sandhu says “It is easy to see that the BN write rule has the following implication: (1) A subject which has read objects from two or more company datasets cannot write at all. (2) A subject which has read objects from exactly one company dataset can write to that dataset. Explain why.
- (50 pts)** Rephrase Sandhu’s approach of implementing the Chinese Wall Policy using the Bell-LaPadula model.