COMP 5120/6120 Database Systems I
Homework #3

1. Answer the following questions about files and indexes:

    a. What alternatives are available for the data entries in an index?

    b. What is the difference between a clustered index and an unclustered index? If an index contains data records as 'data entries', can it be unclustered?

    c. How many clustered indexes can you create on a file? Would you always create at least one clustered index for a file?

2. Explain the terms seek time, rotational delay, and transfer time.

3. What is sequential flooding of the buffer pool?

4. Describe two possible record formats. What are the trade-offs between them?

5. Why do frames in the buffer pool have a pin count instead of a pin flag?

6. Explain the intuition behind the two rules in the Bell-LaPadula model for mandatory access control.

7. Describe a scenario in which mandatory access controls prevent a breach of security that cannot be prevented through discretionary controls.