MPP Midterm Review Points

The midterm will consist of approximately 35% short answer questions (including possibly some true/false questions) and 65% skill questions. Skill questions require you to write code or draw diagrams. The exam will be a paper exam; you will not have access to laptops, internet, phones, books, or notes. There will be some coding on the exam, so you should be prepared to write code without the help of Eclipse.

1. Be prepared to answer questions about and write code for 1-1 associations (either unidirectional or bidirectional).
2. Be familiar with the rules concerning 1-many associations discussed in class.
3. Know the difference between associations and dependencies, both conceptually and in the way they are implemented in code
4. What is the purpose of a class diagram? What is the purpose of a sequence diagram? Be able to answer these questions.
5. Be familiar with how polymorphism is implemented in Java.
6. Be familiar with the implementation of late binding in Java code contrasted with early binding when static methods are used.
7. Know the elements of a Use Case Diagram.
8. Be familiar with applications of factory methods to replace the use of constructors, as discussed in Lesson 5 (you will not be asked about rules engines or data access architecture).
9. Be able to determine when properties of a UML class should be modeled as *attributes* and when they should instead be modeled by *associations.*
10. Given a problem statement, be able to draw a class diagram to model the key abstractions you extract and be able to draw a sequence diagram for a main flow.
11. Be able to draw a little class diagram that models reflexive relationships. Examples from class: Doubly Linked List, Course Prerequisites, Position Hierarchy (see Lab 2, Problem 3).
12. Be able to translate class diagrams and sequence diagrams into Java code

The SCI Question: (3 points) You will be given an insight/principle from SCI and you will be asked to explain what it means and give an example of how it is exemplified or illustrated by a Computer Science concept. This is a short essay; richer content will be awarded more credit.