ESOF 422 Homework 3

Instructions:

Work with your partner on this homework.
Make sure your printout is stapled together and all names appear in the front page.
Hand in copies (printouts) of all diagrams, including a copy of the protocol state machine.
Hand in copies (printouts) of .use files.
Your homework is worth 30 points.

Due: 3/4 (Friday) during class. –No exceptions so plan accordingly.

Question 1 (10 pts)

In this exercise you will design a First Person Shooter (FPS) game. Your class diagram should contain classes for the FPS and its associations to the rest of the game environment (i.e. weapons cache, levels, etc. use your imagination). An FPS can be in any one of the following states: Neutral, Attack, Panic, or Die.

Think about the messages (i.e. operations) that can be sent to the FPS and how the FPS will react to the messages depending on its state. Use a State Pattern to keep track of the state of the FPS.

Make sure you put in D2L's Dropbox a copy of the .use file that contains the protocol state machine. I will run it and check it to make sure it works.

Question 2 (20 pts)

Select any design pattern (except the example we do in class) and create the RBML diagram for its Structural Pattern Specification. For this exercise you may use any tool (except hand drawn). Then answer the following questions:

i) Draw a couple of examples of realizations of your RBML metamodel.

ii) Draw an example of a *near-instance*. A *near-instance violates* the metamodel in some form.

iii) How would you achieve balance between a restrictive vs. a lenient metamodel? Why is this an important issue?