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 20 points.

Due: 3/2 (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. It will be run to check and make sure it works.

Question 2 (10 pts)

After attending the presentation from Fast Enterprises you should have an "idea" of the flow of tasks that their engineers go through while deploying their tax systems.

Use your knowledge in Component, Class, Sequence and Use Case diagrams to architect a system for your Taxing Solutions Company. Use your imagination!!

You will need to provide:

1. A set of Use case diagrams that exemplify at least 3 major use cases
2. A high level Component Diagram that is low coupled and highly coherent. Show the ports, interfaces, etc.
3. Select one component and develop the class diagram for it. It is up to you which component you select, but the class diagram should show all relevant interfaces, classes, attributes, methods, etc.
4. Add some OCL to display appropriate invariants, pre and post conditions.
5. Operationalize one method and generate the sequence diagram for it. (Note that you may need to sprinkle SOIL for this)