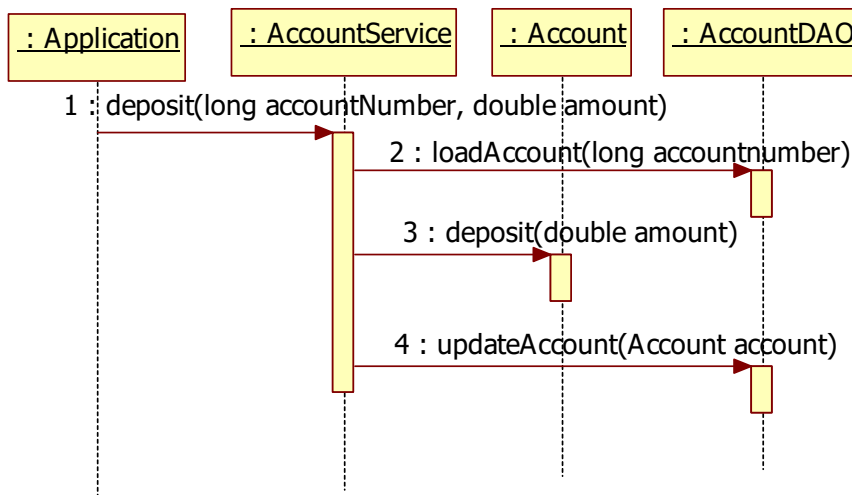
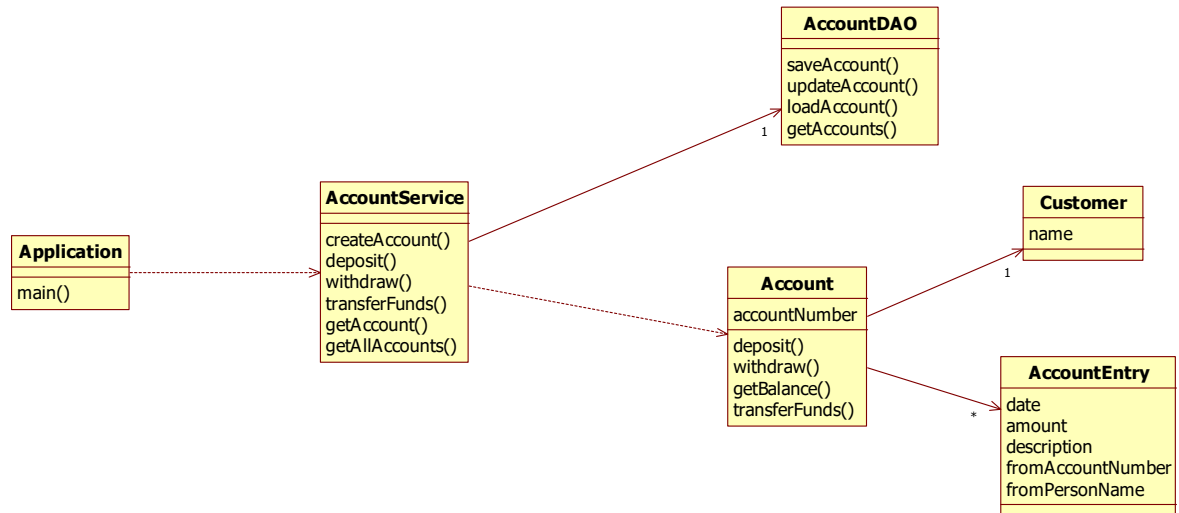


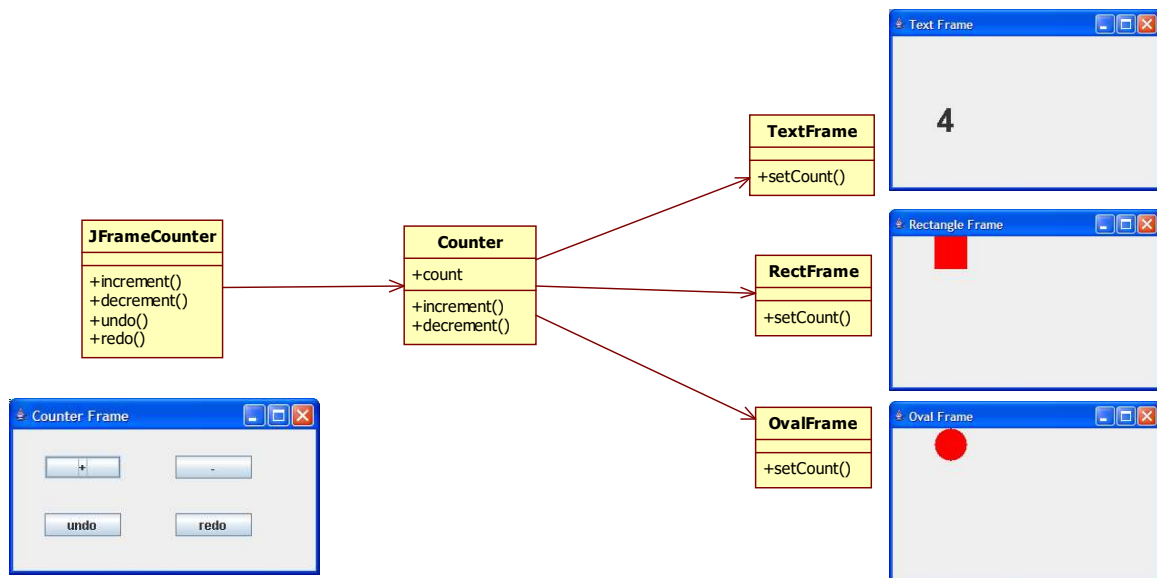
## Lab 2

a. Given is the following bank application:



Now we want undo/redo functionality for the methods deposit(), withdraw() and transferFunds()  
 Draw the modified class diagram.

- b. Draw a sequence diagram that shows how your new design works. On the sequence diagram show the following scenario:
  1. First deposit a certain amount
  2. Then withdraw a certain amount
  3. Then call undo
- c. Implement the command pattern in the given code.
- d. Given is the following application:

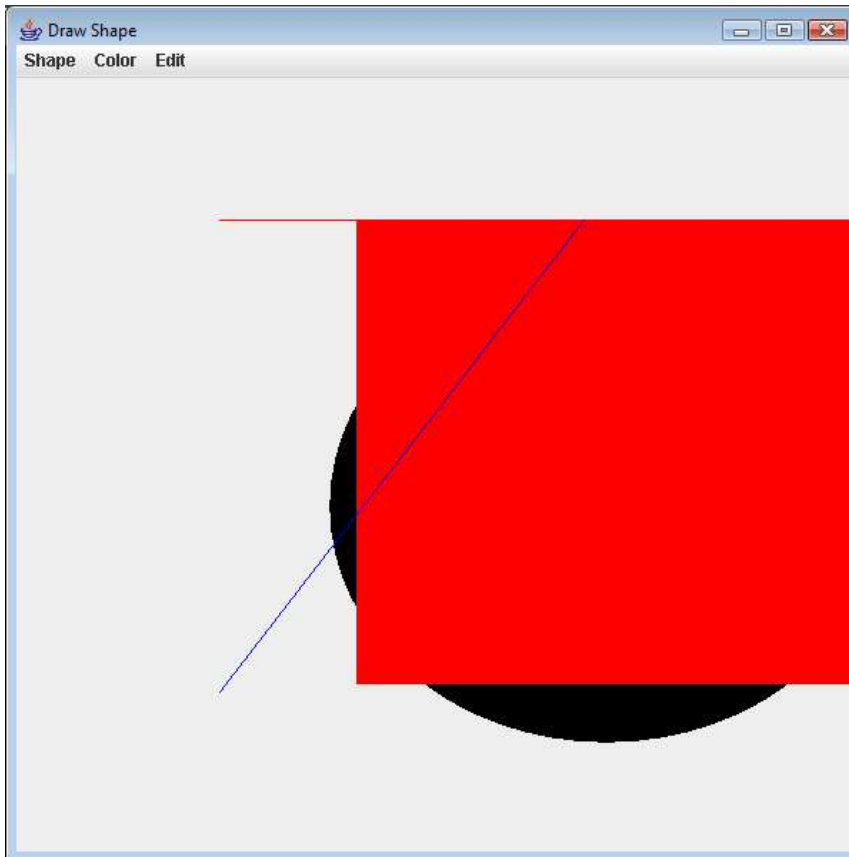


Now we want the undo/redo buttons to work.

Draw the class diagram so that the undo/redo buttons work correctly. Your class diagram needs to show both the observer pattern of lab 3 and the command pattern in one diagram.

- e. Draw the sequence diagram that shows the following scenario:
  - a. The user clicks the increment button
  - b. The user clicks the decrement button
  - c. The user clicks undo
- f. Implement your new design in Java. Modify the given application so that undo/redo works for the given application.

- g. Given is a small and simple paint application.  
Under the Edit menu item you can select Undo and Redo.  
Implement the Undo and Redo functionality such that we can undo the latest action.  
You only have to undo/redo actions on Shape (not on Color).



What to hand in?

1. A jpeg picture of part a
2. A jpeg picture of part b
3. A zip file that contains the solution project
4. A jpeg picture of part d
5. A jpeg picture of part e
6. A zip file that contains the solution project
7. A **readme.txt** file with the following statement:

*I hereby declare that this submission is my own original work and to the best of my knowledge it contains no materials previously published or written by another person. I understand that if I submit one or more solutions that I did not create myself I will fail the course with an NC.*

*[your name as signature]*