**CS 302 – Object-Oriented Design**

**Assignment Report**

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Assignment 6 **Date submitted***: 10/25/15*

**Introduction**

The purpose of this assignment was to enhance the previous flashcard application to allow the user to have images in the program also. The application should also contain mouse gestures that allow the user to drag the image to either the right or the left. The application still has four options for the user to have and they were able to study, use the drill method, show the answer, or exit the application. The program should have extended the flashcard program from Assignment 3 with the drill method added along with a graphical user interface for studying. The study interface should be usable from both methods.

**Methods**

When it came to the design pattern, not much changed between this and my flashcard application. I used the MVC pattern because programs such as this one have multiple views, and editing one view would update the other. The only difference was making a couple of changes in the GUI, such as implementing the ImageIcon method, and making sure the Leitner and drill methods worked properly. I wasn’t able to get the mouse gestures working. I would either get compile errors or the program would show a window without anything on it.

The way I tested the program was by using the main method show at the bottom of class. I used a scanner method that read a file with state capitols and different countries flags. The program would run through the file and split each card into an array that would then place the front and backs of the cards inside the flashcard object. After this, each card would then be placed inside a random box depending on the value of a random integer.

The biggest issue I ran into was the mouse gestures. I think time inevitably kept me from finishing it. Since I was adding things to the previous assignment, I still had things either missing or not working correctly so a lot of my time went to finishing that up. I wasn’t exactly sure what exactly was suppose to happen once your could drag the picture.

**Constructor:**

The first part of making this program was to create the window of the application using a constructor to do so. To do this I need to make the frame, panel, and the buttons needed for this program. The buttons would include a button to study, use the drill method, and exit the program. I then added these buttons to my panel and then added the panel to the frame.

**Study**:

The study button was supposed to display the cards at random between the boxes using the Leitner system. These cards are coming from a text file placed inside the same directory. Because this program had to notice whether or not to read the string and print either text or an image I placed a conditional inside this method. The conditional stated that if the string contained “.png” then create a new image icon and place this in the JOptionPane. If the string did not contain those characters then the program would just show it as text. If the user were to get an answer right then it would go into the next box, but if they got it wrong then it would stay in that box or go back to to previous box, depending on the box. This would continue until all the cards were in the last box.

**Drill**:

My idea of the drill method was basically the Leitner system, but it only used one box instead of three. This study method used the note cards starting in the first box and copies them into a separate pool. The program would them randomly pick one of the note cards from the group. The method continues until all the cards are answered correctly and are out of the box.

**Do Not Know/Exit:**

The do not know button is used when the user does not know the answer to the question. This button will display the opposite side of the card. Since the challenge side of the card is what will always be shown, I used a “jOptionPane” that displays the opposite side of the card. The exit button closes the application when the user wants to. To do this I used a system exit method with the integer value of zero.

**Discussion**:

Even though I wasn’t able to implement the mouse gestures into this program, I was able to make a lot of corrections to it. Going back and looking through the code helped me understand better how it actually worked. Before, it felt like I was just writing without understanding what I was doing. This ultimately helped in the long run.

**References**

Horstmann, Cay S. *Object-oriented Design & Patterns*. 2nd ed. Hoboken, NJ: Wiley, 2006. Print.