

CECS 220 Assignment #5

Alex Bennett – April 8, 2015

Question 1 (9.8): This question required me to make an animated line that moves across the screen and changes color as it passes through another line defined in the middle of the applet. The solution I came up with was to create a `HorizontalLine` class which accepts a color, starting point, and length. As the first line (starting at the left) moves to the right and intersects the vertical line I reduce the length of this line while simultaneously translating it to the right. This gives the illusion that the line is sneaking behind the vertical line. At the same time, add to the length of a second line with a starting point at the vertical line and after it reaches the defined max length I also translate it to the right. When you put the two together it looks like one, continuous line changing colors as it passes through the middle.

Question 2 (9.10): Problem 2 was fairly easy to implement. I used the `Timer` class and set a delay of 1000ms to be able to count by seconds. I then made a function that updated the stopwatch display by incrementing seconds, minutes, and hours integer variables individually each time the timer listener triggered it. Once the seconds hit 60 I incremented the minutes up by 1 and reset them to 0 to start again. Once minutes hit 60 the same thing happens with incrementing the hours by 1 and resetting minutes.

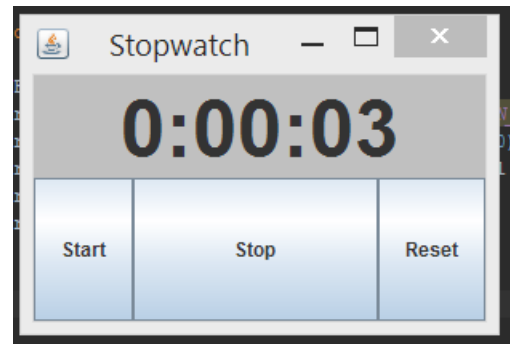
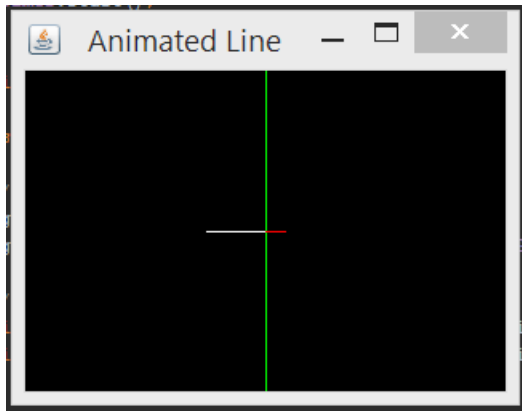
Question 3 (10.3): For this problem I created a class called `Guest` that implements the `Speaker` interface. Inside it I stored a name string and announcement string. Upon creation of a new `Guest` object it must be initialized with both a name and announcement. You can then call the `Guest.speak()` method which prints their announcement to the console. You can also call the `Guest.introduce(Guest)` method with introduces the next guest by name to the "stage".

Question 4 (10.5): To sort the movies I used a `TreeMap`. I first iterated through the unsorted array and added them to a new `TreeMap` with the key being the title of the movie (allowing the Map to automatically sort) and the value being the DVD object itself. After adding them to the Map I immediately iterated through the entry set and added the keys (now alphabetically sorted) back to the DVD array.

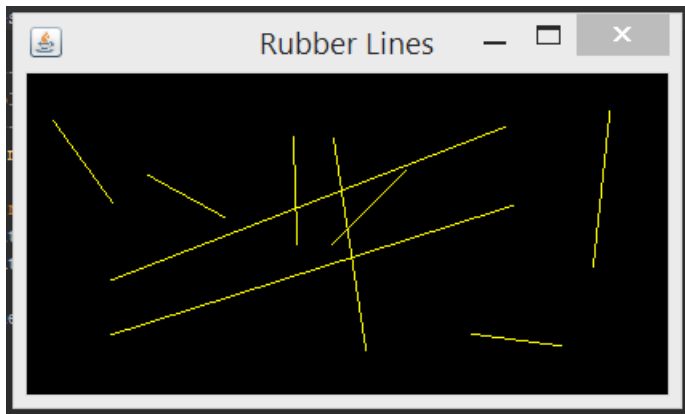
Question 5 (11.4): This was the most straight-forward of the 6 problems on this assignment. I simply created a new class that extends `Exception` with the appropriate name. I then created another class called `Document` that throws the newly created exception in the event that the designation number does not begin with a valid character.

Question 6 (8.19): For problem 6 I created a private `Map<K, V>` variable inside of the `RubberLinesPanel` component to easily store both the starting and ending point for the drawn lines. While this may not be the most conventional use of a Map it still works quite well. Each time the mouse is released I store the click point and release point as a key and value respectively in the map. The `paintComponent` method then iterates through the Map and draws the lines as needed.

[screenshots attached below]



```
"C:\Program ...  
"Cancer has been cured!"  
Now introducing Spot!  
  
"...woof"  
Now introducing Barack Obama!  
  
"The future rewards those who press on. I don't have time to feel sorry for myself. I don't have time to complain. I'm going to press on."  
  
Process finished with exit code 0
```



```
~~~~~  
My DVD Collection  
  
Number of DVDs: 5  
Total cost: $98.30  
Average cost: $19.66  
  
DVD List:  
  
$17.50 1950 All About Eve Joseph Mankiewicz  
$19.95 2009 District 9 Neill Blomkamp  
$15.95 2008 Iron Man Jon Favreau  
$24.95 1972 The Godfather Francis Ford Coppola Blu-ray  
$19.95 1999 The Matrix Andy & Lana Wachowski Blu-ray  
  
~~~~~
```

```
AnimatedLine Stopwatch Business  
"C:\Program ...  
ERROR: No valid document designation found for document named "Document #3".  
  
Process finished with exit code 0
```

