Reflection

Requirements

1. it should have a Graphical User Interface with at least four new features that haven't been covered in class
   I used these widgets:

   - JCheckBox
   - JToggelButton
   - JColorChooser
   - JfileChooser

2. it should be able to save data to a file and load it back.
   It can save file and load it back, the file contains all the circles with parameters and keep their orders

3. it should use a HashMap to read data from a file and provide access to the data in the app It used a HashMap to read data from file and provide access to the data in the app.

Explanation

1. what you personally did for the app, and what every one else in the team did
   Individual Project. I did the project on my own.

2. what grade you would give yourself and everyone else (and why)
   No teamates involved in theis project.

3. what you learned in creating this app
   I learned all the widgets I used.

4. what you did well

   - There is some OOD in the app, a lot of data transfering among class, instance, methods.
   - Used regular expressions to deal with data in file.

   ```
   Unknown_Untitled
   0|352.7424453206741_503.7478018474771_41.814092679448315_1_java.awt.Color[r=181,g=79,b=110]
   1|352.0432606352645_402.7068518847276_43.65059173758291_1_java.awt.Color[r=35,g=34,b=20]
   2|435.6172010615569_22.518569108298234_14.10313458916076_1_java.awt.Color[r=21,g=209,b=41]
   3|71.12542313457563_599.6909495475674_25.245770385695046_1_java.awt.Color[r=81,g=209,b=214]
   4|522.1057567958845_532.414388237233_43.17649897325307_1_java.awt.Color[r=155,g=198,b=233]
   5|264.911390417052_574.230001285092_6.52621520059558_1_java.awt.Color[r=51,g=201,b=69]
   6|178.4624077562041_122.4565200661401_40.25080761775152_1_java.awt.Color[r=35,g=214,b=160]
   ```

5. what you would do if you had more time...

- Create an abstract class for all shapes, let the circles to inherit the shape class and create more subclass like square, oval, triangle and points.
- Enabling reading and drawing on image, output the drawing to image.
- Beautify the UI