CSCI-C212/A592 – Intro to Software Systems
Spring 2017

SCHOOL OF INFORMATICS AND COMPUTING
INDIANA UNIVERSITY
Bloomington

Assignment 4

Due by 3/24/2017, Friday midnight through Canvas

Instructions:

- Review the requirements given below and complete ***both*** parts from below. Please submit all files through Canvas.
- The grading scheme is provided on Canvas. Be sure that your code includes everything required in the grading rubric.

Part 1 – Random Shape Generator

- Using your shape classes from lab8, implement the Random Shape Generator application
  - Add an *abstract draw(Graphics g)* method to your abstract Shape class
  - All the different shapes will need a *draw* method but each one will be slightly different

- The application is the same one I attached to the last lab, but it is also attached with this assignment.
  - Pressing the c, r, or s key draws a circle, rectangle, or square

- The requirements are:
  - Shapes should be random sizes
  - Shapes should be random colors
  - Shapes should be in random locations
  - Your background Should be a different color than white
  - Does not matter if shapes overlap

Part 2 – CRC Cards

- In the lecture, we have discussed using CRC cards to design and implement "Library System". Complete the design and submit the following:
  - Requirement Statement (in plain English)
  - Initial List of classes and methods identified
  - Initial set of CRC Cards (**Note**: Use physical cards when designing classing. But for submission: you can draw a table for each flash card instead of submitting the actual cards)
  - Final list of classes (including any abstract classes as well), attributes, methods
  - UML diagrams (draw them with professional software like starUML))
  - You also need to provide skeleton code (where most methods have been left empty but they do include appropriate arguments). All methods should be properly commented using Javadoc style!

- Here are the list of tasks that your system should implement:
    - Search a textbook in library (for status?)
    - Check-in, Check-out a textbook
    - See a student check-out history
    - Should be able to add, delete books
    - Should be able to add, delete students
    - Should be able to assess fine to students
    - Should be able to check status of a book
- **Bonus worth 50 points**: Implement your Library System!