Winter 2020 **Lab 10 COMP 249**
Due date: Today, at the end of the lab period.

You are interested in making a generic program that is able to draw different shapes and fill them in with colors.

1) Define 2 interfaces:
- **Drawable** that contains the following: int red = 1, green = 2, blue = 3, black = 4, white = 5, and a method draw(int color).
- **Fillable** that extends the Drawable interface, and contains a method fill(int color).

2) Define 2 classes:
- Class **Circle** that implements Fillable, and contains the following attributes and methods:
  - Double x, y, radius
  - A Constructor that takes three double variables and sets those values to x, y, and radius respectively
  - Override the draw(int color) method that prints out the following message to a .txt file: “Circle drawn at (x, y) with radius r, and color c”, where x, y, r, c refers to the variables x, y, radius, and color respectively
  - Override the fill(int color) method that prints out the following message to a .txt file: “Circle filled at (x, y) with radius r, and color c”, where x, y, r, c refers to the variables x, y, radius, and color respectively
- Class **Rectangle** that implements Fillable, and contains the following attributes and methods:
  - Double x1, y1, x2, y2
  - A Constructor that takes four double variables and sets those values to x1, y1, x2, and y2 respectively
  - Override the draw(int color) method that prints out the following message to a .txt file: “Rectangle drawn with upper-left corner at (x1, y1) and lower-right corner at (x2, y2), and color c”, where x1, y1, x2, y2, and c refers to the variables x1, y1, x2, y2, and color respectively
  - Override the fill(int color) method that prints out the following message to a .txt file: “Rectangle filled with upper-left corner at (x1, y1) and lower-right corner at (x2, y2), and color c”, where x1, y1, x2, y2, and c refers to the variables x1, y1, x2, y2, and color respectively

3) Create a driver class where you will create an array of Fillable objects, and initialize 2 circles and 3 rectangles (you may hardcode the shapes’ coordinates with valid values during the instantiation). Then, test your program by iterating through the array to draw and fill each of the shapes with random colors.

Submission: Once you are done, upload your program to the https://fis.encs.concordia.ca/eas/ Please name your file following this convention: lab10_studentID, where studentID is your Student ID number.