# ITEC 120 Lab 9

Created by Dr. Ray

*Files:*
http://www.radford.edu/~aaray/Picture.java
http://www.radford.edu/~aaray/DigitalPicture.java
http://www.radford.edu/~aaray/PictureFrame.java
http://www.radford.edu/~aaray/Pixel.java

You will need to turn in a lab report for this lab.
**Note: You may run into a out of memory error with this lab. If this is the case, try re-running your program with the following options:**

```
java -Xms32m -Xmx128m classname
```

If you are using pictures found on the internet, Picture.java may not be able to load / display them. Keep trying new pictures until you find ones that Picture.java can work with.

### *Task 1: Create a red picture*

Create a program that displays a picture of size 640x480 that is solid red.

*Steps:*
Create a picture object that points to a picture of the right size.
Get the 2D array of pixels out of the picture.
Go through every pixel in the picture and set the red value to be 255 and the other values to be 0.

### *Task 2: Implement image manipulation effects*

Create a command line simulator that prompts the user to enter a filename and for manipulations to make on the picture stored at that filename. Once a manipulation is done, show the resulting manipulation to the user. Your code must implement at least three different effects from yesterday's lecture, but you can add as many as you want.

*An example usage of such a solution would be:*

```
Please enter photo name> test.jpg
Please enter effect>help
Effects are:
blackAndWhite
sepia
negative
Please enter effect>blackAndWhite
```

Include the resulting pictures and code in your lab report.

### *Task 3: Create a green screen effect*

Get your picture taken in front of the green cloth (can be an individual or group picture) and find a background picture online. You can use your digital camera or the one provided. If you use the camera provided, your picture will be emailed to you after everyone's picture has been taken.

If you prefer not to get your picture taken, you can use this picture for the green screen effect:
http://www.radford.edu/~aaray/ta.jpg

Next, implement the green screen effect using the algorithm listed in yesterday's lecture. Include the resulting pictures and code in your lab report.