CSE 8A Programming Assignment 8

Name should be formatted as (last, first)
If you are working solo you may leave the right column blank.

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Part 1 : Inplace Image Modifications

1.1 CODE FOR CUSTOM FILTER

```
// Copy and paste your custom image filter method here
// Make sure to set the font to Courier New
// IMPORTANT: Make sure your code is properly formatted and commented.
// Code that does not have correct indentation and comments will lose marks.
```

Code in Image.java:

```
    public void customFilter(int topLeftX, int topLeftY, int width, int
   height){
    Color[][] pixel = this.getPixels2D();
        if(topLeftY<0){
          topLeftY=0;
        }
        if (topLeftX<0){
          topLeftX=0;
        }
//if the beginning index is out of range, we set it to 0;
//for example, if we have [-1][-2], after executing the code, we change it to
//[0][0]
        if (height+topLeftY>this.getHeight()){
          height=this.getHeight()-topLeftY;
        }
        if (width+topLeftX>this.getWidth()){
          width=this.getWidth()-topLeftX;
        }
//if the ending index is out of range, we change it to the point at edge;
//for example, if we have height+topLeftY=2*this.getHeight() and width inside
   the
//range, we will change these pixels to be part of the bottom edge of the image
        for (int row = topLeftY; row < height+topLeftY; row++){
          for (int col = topLeftX; col < width+topLeftX; col++){
        this.pixels[row][col] = pixel[row][width + 2*topLeftX - col -1];
//the nested loop help us flip part of the image from right to left
```

```
//"width + 2*topLeftX - col -1" is same as
//"2*((topLeftX+(topLeftX+width))/2)-col-1"
          }
        }
    }
```

Code in PA8.java:

```
  public static void main(String[] args) {
        testcustomFilter();
    }
```

1.2 TESTS:

```
// Copy and paste the code from both test methods (including comments!) here

public static void testHorizontalFlip()
    {
        Image img1 = new Image("res/pixel-heart.png");
        img1.explore();
        int w = img1.getWidth();
        int h = img1.getHeight();
        img1.flipHorizontalRect(0,0,(int)w/2 ,(int)h);
        img1.explore();
        //Original test

        Image img2 = new Image("res/jinx.PNG");
        img2.explore();
        int w2 = img2.getWidth();
        int h2 = img2.getHeight();
        img2.flipHorizontalRect(100,100,(int)w2 ,(int)h2);
        img2.explore();

    }

 public static void testcustomFilter()
    {
        Image img1 = new Image("res/yi.jpg");
        img1.explore();
        int w1 = img1.getWidth();
        int h1 = img1.getHeight();
        img1.customFilter(-10,-10,(int)w1/2 ,(int)h1);
        img1.explore();

        Image img2 = new Image("res/vn.jpg");
        img2.explore();
        int w2 = img2.getWidth();
        int h2 = img2.getHeight();
        img2.customFilter(10,50,(int)w2*2 ,(int)h2*3);
        img2.explore();
```

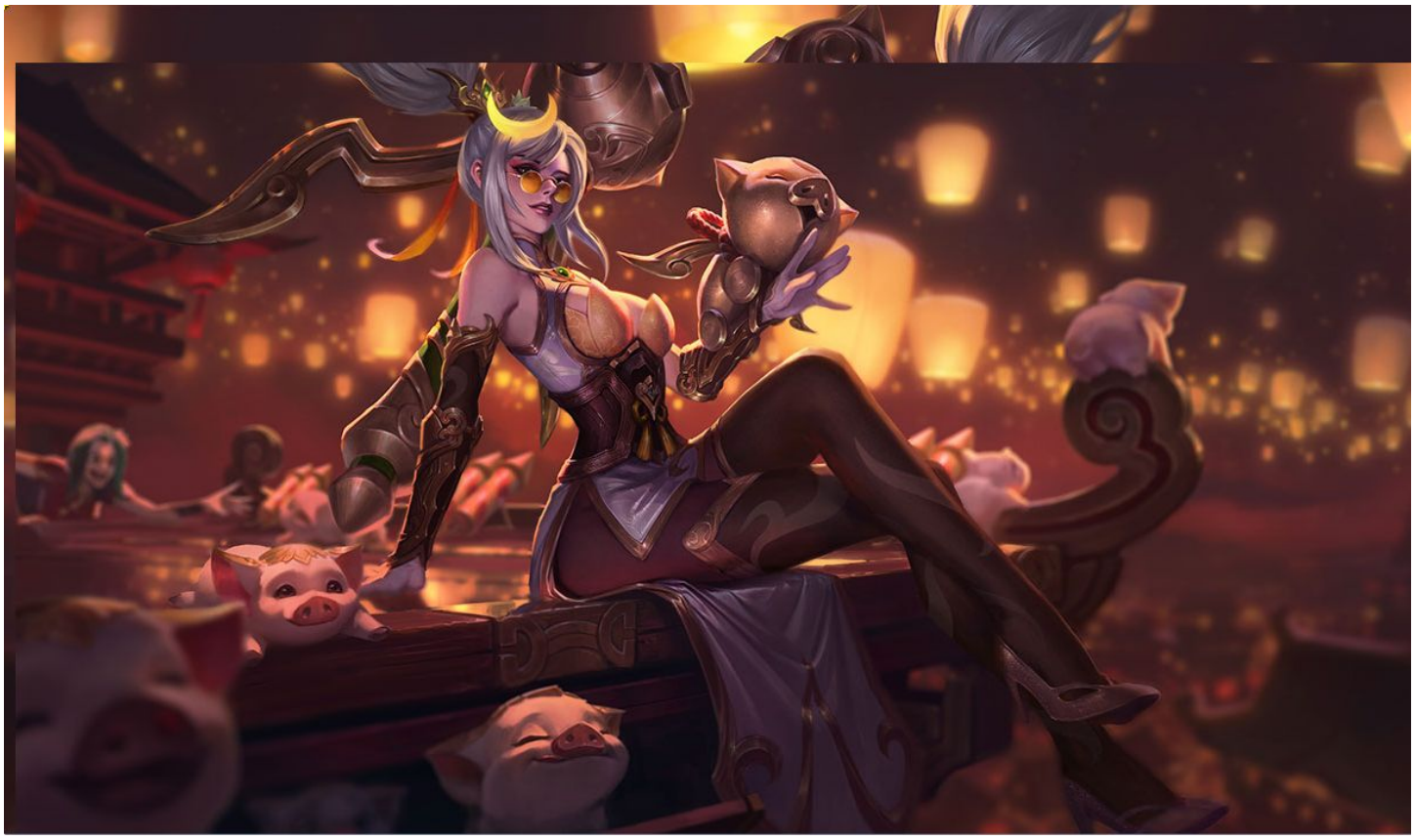
```
        Image img3 = new Image("res/pixel-heart.png");
        img3.explore();
        int w3 = img3.getWidth();
        int h3 = img3.getHeight();
        img3.customFilter(10,50,(int)w3/2 ,(int)h3-300);
        img3.explore();
    }
```

1.3 OUTPUTS

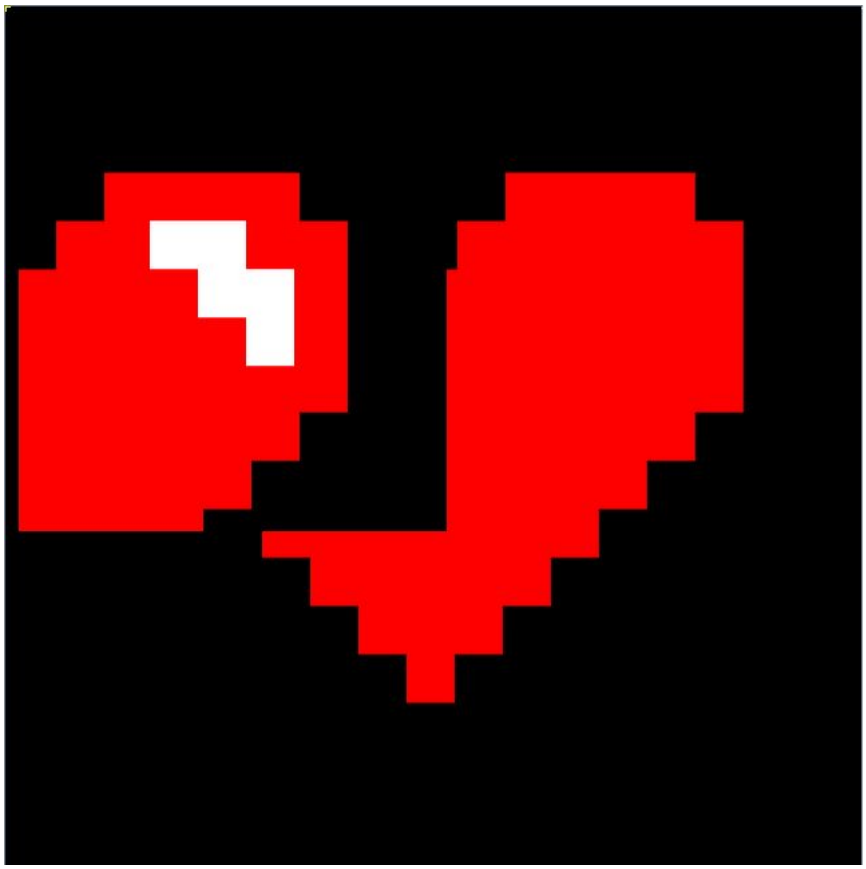
For the tests of your custom filter only, show the output from running each test.

img1:

Img2:



Img3:



1.4 EXPLANATION

For the tests of your custom filter only, briefly explain why you chose each test and how you know your code is working correctly (or not). If there are known bugs with your method, explain what they are.

We tested cases required in PA8 assignment with different images (some from websites). We choose two cases where the bounding box goes outside the range of the calling object's legal row and column values. We choose them to meet the requirement and to improve our code for different uses. We know the code works correctly because we can assume what the final image should be and compare the assumed result with the real result to check if the code works well.
Until now, we have not found any bugs.

Part 2 : Slideshow class

2.1 DESCRIPTION

Provide a brief description of the slideshow. What is the topic of the slideshow ? Describe what individual slides in you slideshow represent.

We choose images of champions in League of Legends with some music.
First slide shows champion called Yi with music UpbeatFunk.wav.
Second slide shows champion Vayne with music wind.wav.
Third slide shows champion Jinx with music bbc.wav.

2.2 SLIDESHOW CODE: play() method only

```
// Copy and paste the code from your play() method in the Slideshow class here
// Make sure to set the font to Courier New
// IMPORTANT: Make sure your code is properly formatted and commented.
// Code that does not have correct indentation and comments will lose marks.

public void play(){
    for (int i = 0; i < this.sounds.length; i++){
      this.pictures[i].show();//here we present pictures
      this.sounds[i].blockingPlay();//here we play the music
    }
  }
```

2.2 SLIDESHOW PROGRAM

```
// Copy and paste the code from your main method in the Slideshow class here
// Make sure to set the font to Courier New
// IMPORTANT: Make sure your code is properly formatted and commented.
// Code that does not have correct indentation and comments will lose marks.

  public static void main(String[] args) {
    //import 3 groups of images and sounds
    Sound sounds1=new Sound("res/UpbeatFunk.wav");
```

```
    Image pictures1=new Image("res/yi.jpg");
    Sound sounds2=new Sound("res/wind.wav");
    Image pictures2=new Image("res/vn.jpg");
    Sound sounds3=new Sound("res/bbc.wav");
    Image pictures3=new Image("res/jinx.PNG");
    Slideshow newSlide = new Slideshow();//create new slide object
    newSlide.addSlide(pictures1,sounds1);//add slides into the slide object
    newSlide.addSlide(pictures2,sounds2);//add slides into the slide object
    newSlide.addSlide(pictures3,sounds3);//add slides into the slide object
    newSlide.play();

    Scanner scnr=new Scanner(System.in);
    System.out.println("Do you want to play the slide again? Answer YES or
NO.");
    String answer=scnr.next();
    while (answer.equals("YES")){
    newSlide.play();
    System.out.println("Do you want to play the slide again? Answer YES or
NO.");
    answer=scnr.next();
    }
    if (answer.equals("NO")){
      System.exit(0);
    }
  }
```

Known bugs or issues

*I*f you have known bugs or issues with your slideshow, let us know here. If you think your slideshow program works correctly, justify why.

1. For the part1 of flip horizontal image, the initial row and column are topLeftY and topLeftX instead of 0. For the row of the pixel, don't forget to minus 1 at the end.
2. For part 1 of the custom filter part, we have to consider the situation if the input is less than 0. This lets us use if statement.
3. For part 2 addSlide, at first we forgot to put minus 1 in i <CopyImage.length or CopySound.length. Thus, when running the code, it showed that it is out of the bound.
4. Use loops for running the slides in order to test it as much as we want.
5. Reflection form.