Module IV: Creating Collages

Learning Objectives

How to create image collages

Collages

One of the (interesting) things you can do with pictures is to create a collage. A collage (from the French word 'coller', which means to stick), is regarded as a work of visual art made from an assemblage of different forms, thus creating a new whole. More information on collages.

Chances are that you have made a collage before, by sticking different pictures on the same sheet of paper (or something infinitely more creative). Well, you can do the same thing with a little code and some fancy images.

Example: **Creating a collage**

Suppose we have 2 images, flower1 and flower2, and both images are 100 pixels wide. We also have a canvas image that measure 640 x 480 pixels. The image below shows what happens when we copy both images (and a few others) to the canvas.

So, how would we go about creating that collage we saw above? Here's pseudocode for it.

1. Create the target picture object
    a. Using the 640 x 480 file
2. Invoke the method on the target picture
    a. Create the flower picture objects
        a. using flower1.jpg as source1Picture
        b. using flower2.jpg as source2Picture
    b. Set targetBottomY to the targetPicture height - 5
        a. This sets up the pictures 5 pixels from the bottom of the image
    c. Copy all of source1Picture to the current picture starting at x = 0, y = targetBottomY - source1Picture's height
    d. Copy all of source2Picture to the current picture starting at x = 100, y = targetBottomY - source2Picture's height
    e. Negate source1Picture
    f. Copy all of source1Picture to the current picture starting at x = 200, y = targetBottomY - source1Picture's height
    g. Clear the blue from source2Picture
    h. Copy all of source2Picture to the current picture starting at x = 300, y = targetBottomY - source2Picture's height
    i. Copy all of source1Picture to the current picture starting at x = 400, y = targetBottomY - source1Picture's height

And here is an implementation:

```
public void createFlowerCollage() {
   Picture source1Picture = new Picture("img1.jpg");
   Picture source2Picture = new Picture("img2.jpg");
   int targetBottomY = this.getHeight() - 5;
   //get the graphics object
   Graphics g = this.getGraphics();

   //copy source1Picture to 0, targetBottomY - height
   g.drawImage(source1Picture.getImage(), 0,
         targetBottomY-source1Picture.getHeight(), null);

   //copy source2Picture to 100, targetBottomY - height
   g.drawImage(source2Picture.getImage(), 100,
         targetBottomY-source2Picture.getHeight(), null);

   //negate the source1Picture
   source1Picture.negate();

   //copy negated source1Picture to 200, targetBottomY - height
   g.drawImage(source1Picture.getImage(), 200,
         targetBottomY-source1Picture.getHeight(), null);

   //clear the blue from source2Picture
   source2Picture.clearBlue();

   //copy source2Picture to 300, targetBottomY - height
  g.drawImage(source2Picture.getImage(), 300,
         targetBottomY-source2Picture.getHeight(), null);

   //copy negated source1Picture to 400, targetBottomY - height
   g.drawImage(source1Picture.getImage(), 400,
         targetBottomY-source1Picture.getHeight(), null);
}
```

Test it with:

```
Picture p = new Picture(600, 300);
p.createFlowerCollage();
p.show();
```

In your homework, you will be using these ideas to create a collage of your own.