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CMSC405 Project 1

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**Overview**

**Project 1 Java 2D Graphics**

In this project you will create 3 simple, images or your choice and use Java 2D graphic methods to rotate, scale and translate each of the images.

**Requirements:**

1. Using Netbeans or Eclipse, develop a Java 2D graphics application that creates 3 images. The images should have the following specifications:
   1. Size: minimum 25x25 pixels, larger images are Okay
   2. Type: Color (consists of two or more colors)
   3. Simple form or shape (Hint: consider a letter or number, or even simple shapes such as

crossing lines, rectangles, or circles

* 1. You should generate the image inside of separate methods and store them as 2D arrays.

1. Use Java 2D graphics to display your original images.
2. For each image use the existing Java 2D graphics transformation methods to translate, rotate

and scale each object. You should perform the following transformations on each image:

a. b. c. d. e.

f.

Translate -5 in x direction, Translate +7 in the y direction.  
Rotate 45° counter clockwise.  
Rotate 90° clockwise  
Scale 2 times for the x component, scale 0.5 times for the y component  
Each of these transformations should be displayed in sequence with the images always starting from the previous transformation as opposed to the original image.

Use Java 2D graphics to display each transformation for each image. (Hint: review the Project 1 template for a good start for this project.)  
source code should be written using Google Java style guide.

1. All Java
2. **Prepare, conduct and document a test plan verifying your application is working as expected.**

This plan should include a test matrix listing each method you tested, how you tested it, and the results of testing.

**Source Code:**

* ImageTemplate.java
* Java2DGraphics.java

**Compiled output:**

The shapes will be rotating and making different shapes under 5 frames.

Graphical user interface, application, Word

Description automatically generated

Graphical user interface, application

Description automatically generated

**Test cases:**

**Test case 1:**

Change in colors to Black, Pink, and Blue

(pixelColor == 0) {

pixelColor = Color.BLACK.getRGB();

}

else if(pixelColor == 1){

pixelColor = Color.PINK.getRGB();

}

else {

pixelColor = Color.BLUE.getRGB();

**Image:**

Graphical user interface, application, Word

Description automatically generatedGraphical user interface, application

Description automatically generated

**Test case 2:**

(pixelColor == 0) {

pixelColor = Color.BLACK.getRGB();

}

else if(pixelColor == 1){

pixelColor = Color.PINK.getRGB();

}

else {

pixelColor = Color.WHITE.getRGB();

Image:

Graphical user interface, application

Description automatically generatedGraphical user interface, application, Word

Description automatically generated

**Test case 3:**

Shape shift I Change the matrix to make the triangle come out with a ‘F’ on top of the shape.

Background pattern

Description automatically generated

Image:

Graphical user interface, application

Description automatically generatedGraphical user interface, application

Description automatically generated

**Test case 4:**

The Square shape was change and the colors to 0 = Black 1= RED else= Orange

Background pattern

Description automatically generated

Image:

Graphical user interface, application

Description automatically generated

Graphical user interface, application

Description automatically generated

**Test case 5:**

When made change to the ImageSize X and Y the result will end up in an error if the matrix is not change or made into the size change to the selected number it will give an error output.

private final static int IMGSIZEX = 45;

private final static int IMGSIZEY = 45;

output message:

Failed to execute goal org.codehaus.mojo:exec-maven-plugin:3.0.0:exec (default-cli) on project CMSC405Priject1: Command execution failed.: Process exited with an error: 1 (Exit value: 1) -> [Help 1]

Image:

Graphical user interface, text, application

Description automatically generated

**Summary/Explanation:**

This week Project 1 was really interesting and full of knowledge, I decided to leave my shapes really simple and easy to understand with a matrix of 25 both in X and Y. I added three different shapes a Square, Circle and Triangle the code make a simple command where it will change the shapes of the figures like in a small animation between 5 frames. The shapes have 3 different colors and generate all the steps that was require for the project. The code was really simple so as for encounter problems only small ones, but I look up information to help me fix the problems and able to make my code work perfectly fine. This week project I was able to learn to create 3 simple, images and use Java 2D graphic methods to rotate, scale and translate each of the images. This project gave me the ability to practice more on this type of problems and how to make animations type code to advance in my coding skills.