CS3841 Computer Graphics Assignment 2 6pts

2 points for a program which compiles and has the correct structure and methods

1 point for correctly reading and processing the data file

1 point each for correct transformation methods

Due: midnight Feb 13th, show it to me in class or email it to me by the deadline to [rickjoyce@landmark.edu](mailto:rickjoyce@landmark.edu). If you email it make sure to put both your last name and the string cs3841 in the subject line of the email.

TAL

Triangle Animation Language

~~Use the Java Point class to hold a vertex, and write three methods:~~

~~void rotate(Point p1, double d); //rotate the point d radians clockwise about the origin~~

~~void scale (Point p1, double sx, double sy); //scale the point by factors of sx, sy~~

~~void translate(Point p1, int dx, int dy); //translate the point by dx, dy~~

Now use these to create the TAL movie player. Your program will open a data file which contains the 3 starting vertices of a triangle, followed by a series of transformations, 1 per line, like this:

1 1 31 2 11 11

T 3 2

S 1.1 0.9

R 0.1

R 0.1

The first line defines the initial triangle, in this case P1 = (1,1) P2 = (31,2) and P3 = (11,11). Draw a line from P1 to P2, another from P2 to P3, and a third from P3 back to P1 to draw the triangle. You can use the drawLine() method from Graphics2D (no need to use your previous code).

Now reading the file line by line: translate all three vertices by 3 in the x direction and 2 in the y direction. Erase the initial triangle and draw the newly translated one. Read another line, this time scale all three vertices by 1.1 in the x direction and by 0.9 in the y direction. Erase the previous triangle picture and draw the newly scaled triangle. Continue until end of file. Read and render ten lines per second, where **R** means rotate, **T** means translate, and S means scale, thus playing the triangle film.

Use the extended JPanel as you did for the Bresenhem line drawing work, and do the drawing of the triangle in your overridden paintComponent() routine. Use the Java Swing timer to get your 10fps frame rate (call the repaint() method to redraw).

myNote - Call “paintComponent” 10 time a sec

Run your program like this:

Java Tal triangleMovieFile