

Assignment 4 -- MiniMathPad CAP6105

Due: 10/26/09 11:59pm

The purpose of this assignment is to give you experience with mathematical sketching. You will use an existing mathematical expression recognizer to create an application that combines math and drawings together to form simple animations.

Requirements

This is a very open ended assignment as I would like to see what you can accomplish during the time given to do MiniMathPad. At a minimum your application should be able to

1. Let the user write down several mathematical expressions
2. Make drawings such as circles, lines, squares, etc...
3. Provide a way to scribble erase math and drawings
4. Provide a way to associate the mathematical expressions to drawing elements
5. Animate the drawing elements based on the mathematical specification
6. You should be able to create animations that translate object and/or rotate them through time.

Some things to note.

1. You should use starPad's math recognizer for this assignment. Do NOT create your own.
2. When you create a mathematical sketch you will have to translate the mathematics to create data that is used to animate the drawings. This data will be either position and/or orientation data. Using WPF's animation system should make it easy for you to do this.
3. You are going to have to figure out a method to take the data generated from the mathematics and transform it into pixel space for the animation.
4. If you run into problems, consult the MathPad paper (SIGGRAPH 2004) for more information.

Testing

To test your MiniMathPad application you should create several mathematical sketches and save them out to a file so you can easily load them in and view the animations. Saving the math expressions and the drawings are probably sufficient.

Deliverables

You must submit a zip file containing your source and any relevant files needed to compile and run your application. Also include a README file describing what works

and what does not, any known bugs, and any problems you encountered. To submit, you can email me your zip file.

Grading

Grading will be loosely based on the following:

80% correct implementation

20% documentation