Oliver Flatt

Criterion E: Evaluation

The project overall met the criteria for success. It is a functioning visualization of the step by step process of solving a problem using Chinese remainder theorem. The objects used represent modular numbers and display them in mathematical and visual form. Steps are visualized relatively effectively, primarily through checking solutions. Helpful notes are included that explain and expand on the presentation.

I see many possible improvements for the future. Choosing Java for this project had its advantages and disadvantages. The strongly typed nature helped the code stay more hygienic and safe, but for writing slides it was necessary to declare many new variables, which felt clunky due to the robust syntax. In the future, it perhaps would have been better to create the slides in some other data format, and then read the values from the data file in code.

Another improvement would be to transform it from a presentation to an interactive tool for teaching. Applications like these can be powerful tools for teaching because they can adapt. It would be relatively easy to allow the user to input their own practice problem. I imagine that adaptive comments to the problem would be helpful. If the user inputted a problem in which the moduli were not coprime, it would raise a notification, and help the user learn.

This project has helped me gain experience with Java and the object oriented programming language in general. In the future, it could be a better tool for teaching. Currently it is fairly static, but is effective for use in a small lecture. It could be expanded to be used for many different kinds of modular arithmetic problems. Thinking about things visually will help me and other math students learn to tackle more difficult problems.