CS 105 Assignment 4

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1   Introduction

The assignment was to tackle multiple tasks in agena:

Simple programming
File processing / text manipulation
Array/numeric processing
Drawing
Mandelbrot

Most of these are fairly trivial for me as a 4th year CS student, but still interesting in the context of the nature of the language. I focused on finding ways to help the others start to learn programming languages like agena, and tasking them the work that would be reasonable for them. I then tackled the more complicated tasks like drawing and graphics, and tried to build the work based of the other basic tasks, so I could explain to the other member what was going on, and that they may learn something.

2 Documentation of Results

Attached are the output of the grapics/drawing portion of the assignment, including screenshots.

3 Conclusion

Agena is an interesting new language. The style is fairly straightforward, similar in my experience to Icon. There were a few features like 'remember' that were interesting to me, but I didn't have a need yet to implement. The graphics is short and sweet, and to do anything more complicated, one would need more libraries or to start building them yourself. However, some graphically pleasing ones like drawing fractals are present.

4 Skill Level

I am a 4th year UI CS student, and I work in the IBEST Computing Core. I have maintained and developed parallel applications, and have worked on at least one research project directly.

5 Programming Log

First, I started some simple array-numeric programs, and some simple file io ones as well. I then set the other members out to add to them, while I played with graphics. Then, I reviewed the graphic portion of the code with the other members, touching on some of the principles of recursion, functions, and modularization. Some of these topics were first exposures for the members. I then expanded the graphics further with more functionality, and reviewed it again and helped everyone else out with finalizing their code.

6 Agena Evaluation

Agena is a new, sleek language without a big user base yet. This is an advantage over some language like Java, which have huge user contributions that try to do everything. The downside to this is that all the documentation and

tricks are in the developer's manual, and using the language is like starting from scratch with other languages. The plus is that it is relatively easy to know what is going on, and despite potential rework, some of the features could allow clear and quick development.

The comparison to C++ is pretty start; Agena does have OOP, but is an interpreter, not a compilation. This could be a bit costly on big applications. The plus is that handling data is easier that C++, but I didn't feel that it had the power as other things like R. That being said, it is much clearer than R. It does share R's unclear error reporting at times, but for me is not too hard to work out.