Project 5: The Clone Machine

Story

As none of the previous traps has worked, Wile is going to give it one last chance. This time the idea is that if one Wile cannot catch the Roadrunner, then perhaps 16 can!

Wile has bought a clone machine from ACME. The idea is that Wile can clone himself in nine more versions, and then the lot of them can easily catch the Roadrunner.

Since Wile is a cartoon character a clone machine is in fact simply a ray-tracer, and a parallel version of this will allow Wile to quickly generate the nine clones so that the hunt can begin.

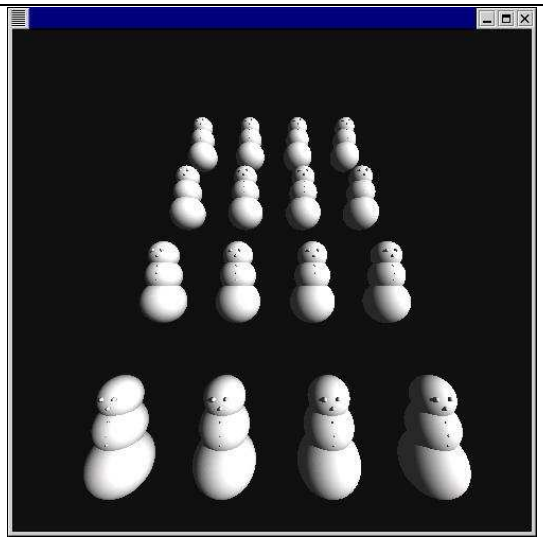

Figure 1 The clone machine

Programming Task

The solution should be implemented using TSpaces or another Tuple Space implementation, and based on the sequential version below. The code should be run on from one through eight nodes.

The report should identify the various choices that has been made as well as individual techniques that has been applied to improve performance. And the impact of each should be documented. In addition the scalability of your implementation should be discussed and the achieved performance curve should be discussed.

Introduction to raytracing

Pipelined applications

Oct tree versions

Similarity to Sieve

Real World Relevance

Raytracing/Rendering

- Directly usable
- Simulations of optics