
CS 702, Spring 2007
Assignment #3
Distributed Programming with Jelly Beans

Due 4/25/07, in class

Introduction

Centralized algorithms are easy to write and understand, but have the drawback that they have a single point of failure. Truly distributed algorithms are harder to write and understand, but lack this “central” drawback. Write a program for truly distributed jelly bean balancing (at some point each house has the same number of jelly beans) in a neighborhood of five houses.

Hints

- (1) You might want to write a more formal problem statement.
- (2) You might want to write the centralized version first.

What to hand in

- (1) A 2-up listing of your well-formatted program.
You might use something like

```
a2ps -T 4 -q -Avirtual -2 -o mycode.ps <files>
```

and then preview the page breaks and general appearance using `gv mycode.ps`.
- (2) Some 2-up **annotated** sample output. Each output line should be prefixed with the time and house name. This allows all outputs to be easily merged sorted and annotated.
- (3) (Extra Credit: at what point can you expect each house have the same number of jelly beans?)
- (4) (More Extra Credit: run your program on a heterogeneous collection of machines. Does this have any effect?)

Notes

- (1) Each house starts with a random number of jelly beans.
- (2) Test you program using five different machines.
- (3) I used the command line arguments “`my_number[0...n-1] host0 host2 host3... hostn-1`”.
- (4) Socket are part of the Java library. I have some C socket code. For other language your on your own :)