**JPeNS – Java Petri Net Simulator**

**By Chris Hobbs and Jonathan Babbitt – CMPT 166 Spring 2012**

Our program is designed to simulate the operation of a Petri Net for the purpose of teaching and understanding the concepts of Petri Net problems. A Petri Net is directed bipartite graph that is used to represent states and transitions in a logical circuit or computer program. Our program will have the ability to import and export saved network files. This will allow users to share different networks between colleagues. For example, a teacher may upload a batch of example networks to something like MyCourses for their students to download as a supplement to in-class notes. Moreover, it could also be used as a more hands-on way for students to answer problems and allow them to export networks to submit to their teacher for viewing. It will be able to run the network and show the current active and non-active states as well as transitions.

We hypothesize that JPeNS will aid in the teaching of this sometimes-difficult topic to people with little to no experience in programming or logical circuits. It will allow the user to learn in a more hands on fashion through practical applications and receive real time feedback when they step through their network.

**Materials and Methods**

For this project we will be using a library called JFern and possibly a plotting library. We will be using methods in these libraries to do the following:

* Load and save files
* Edit networks (Adding and removing nodes)
* Create new networks
* Step through networks
* Run network simulations
* Display visual network representation

**Schedule**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Task** | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 |
| File I/O (import/export) | X | X |  |  |  |  |  |
| Editing (add/remove nodes while program is running) |  | X | X |  |  |  |  |
| Display (visually represent networks) |  |  | X | X | X |  |  |
| Simulate (visually run through simulations) |  |  |  | X | X | X | X |
| Problem solving (demonstrate problems being solved with the program) |  |  |  |  | X | X |  |
| Plug-ins (time permitting, extend the program to other use-cases) |  |  |  |  |  | X | X |