LAB 7. Intro to Petri Nets

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Petri Nets Review

***PN* = {*P*, *T*, *A*, M_0}, where**

- **quadruple:**
  - ***P* is a finite set of *places***
  - ***T* is a finite set of *transitions***
  - ***A* is a finite set of directed *arcs* (arrows) connecting places to transitions and transitions to places**
  - **M_0 is the *initial marking* of PN**

Agenda

1. Learn software tool for Petri Nets - PIPE
   - network drawing
   - model execution
   - network analysis

Petri Nets

Software

- information about the software
  - PIPE4 is installed through the LAB (Linux only)
    - you can also download it from Internet and install at home
      - » http://sourceforge.net/projects/pipe2/
      - » It is free ☺
      - » source code and/or API's are provided, so you can extend the software if you ever need
- first, you will familiarize yourself with the interface and usage of the software

Running PIPE

1. Log in to any of the Linux machines in the lab
2. Open Computer on the desktop
3. Go to Filesystem
4. Navigate to /opt/ece321/PIPEv4.3/ sub-folder
5. Open the installed PIPE
6. Run launch.sh in Linux (in lab)
7. Run launch.bat in Windows

PIPE

Working with the software

- open the program and start with learning the interface
- then learn to add and edit components of the network
- finally build a simple network and simulate the possible sequences of states
  - fill out lab report: task 1
- build and simulate the 2-process semaphore network
  - fill out lab report: task 2 (save the network it will be used in task 4!)
- build and simulate the 3-process semaphore network
  - fill out lab report: task 3
- next you will work on very simple network analysis tasks
  - fill out lab report: task 4

Petri Nets

Remember to fill out the lab report while working on the assigned tasks

- **group work**
- **return it when asked by the lab instructor**
- **grade will be individual (equal for each team member)**

Homework and Next Time

prepare yourself for the next LAB

- **review the Petri Nets theory**
  - **next time you will analyze more advanced models using the PN tools you learned in this lab**