Instructions for using Turing Machine Simulator software

Downloading and Installing

The software can be found here:

http://www.cogsci.rpi.edu/~heuveb/research/BB/downloads.html

(at the bottom of this page are zip files. You want the OwenTMSimulator.zip (for Windows) or OwenTMSimulator.tar.gz (for Linux)).

More recent version can be found on LMS under Software. In all cases, just unzip the package

Running and Using

To run program, just go into OwenTMSimulator folder to find run-windows and double-click.

Using the program is pretty intuitive:

- Use the buttons on the left to create nodes and transitions between them.
    - The 'Node' button creates a new node: just click on canvas where you want it
    - The 'Transition' button creates a new transition (hold mouse button to drag transition)
    - Use the 'Select' button to select nodes or transition arrows (once created) and move them around
    - 'Delete' for delete
    - You can also set starting, halting, and current state
- The buttons at the bottom left control the speed of the TM:
    - 'Start' and 'stop' speak for themselves.
    - 'Step' takes one step
- 'Speed' can be set to 'Slow', 'Fast', and 'Very Fast'. If you set the speed to 'Compute', the program will simulate the machine internally, and only show the output tape when done
- At the bottom right are some more controls:
    - 'Load Input String' will put the string of symbols you type into the box onto the tape
    - 'Clear Tape' clears the tape
    - 'Reset Machine' sets the state of the machine at the starting state
    - 'Quadruple' or 'Quintuple' sets the type of formalization of Turing-machines
- The 'Transitions' at the far right show the Turing-machine program in terms of 4-tuples
- And, of course, at the very top is the tape.

Saving your machine

- 'Save' will save the transitions of your machine and the graphical layout of your machine. It will save the machine as a .tm file.
- 'Save Graph' only saves the transition table; when you load this machine, the nodes are randomly placed on the canvas! This will save the machine as a .tmo file.