

**Title:** Finite State Machine Creation and Editing Utility

**Project:** Our application will allow users to quickly and easily create finite state machines. Creation will be done through a visual interface that will allow users to specify each diagram's layout. It will allow for the creation of both basic machines (consisting of just states and transitions) and more complex machines that incorporate guards. The application will also allow users to enter sample input, and then to observe the step-by-step traversal that results from this input.

**Problem:** Finite state machines are incredibly useful diagrams for modeling software and many other types of complex systems. Diagramming such machines by hand is often unwieldy, since there is no easy way to correct errors or add elements. General diagramming software can make this task easier, but tends to include many options that are unnecessary to a user constructing an FSM, and to lack features like automated traversal that allow for direct use and testing of the FSM.

**Impact:** Our application will help programmers and engineers to model and visualize finite state machines in a two-dimensional environment. It will also greatly increase the accuracy and usefulness of industry FSMs by allowing users to incorporate guards and to perform systematic checking of FSM validity when provided with sample data.