1 Comparison with other tools

Like most tools of the domain, the tool gives the ability to the user to draw automata. However, unlike its friends, the user has more freedom in *choosing the shape of the transitions*, though Visual Automata Simulator is great for this, and thanks to the tight integration of Graphviz, automata can be *(re)drawn automatically* and have a *familiar look*.

Like most others tools, the program comes with basic common algorithms related to automata. However, it comes with *far more algorithms* than its friends and *lets the user write its own algorithms easily*, providing a language close to Javascript with sets as first-class citizens, which makes it suitable for manipulation of automata.

The program is designed with the user in mind: everything is thought to be the more pleasant and natural possible, appearance not being set aside. An example of this is the graphical execution of a word: current states are seen in yellow, transitions being taken right now are brown and current final states are green. If a word runs out of the automaton, its states are drawn in red. The execution can be made *step by step* or not and animations were designed to ease the visualization of the execution.

What also make the program stand out is the Quiz Feature: it gives the ability to teachers and students to *write quiz for students* and these quizzes are run by the tool, using its automata manipulation capabilities. Questions of the quiz can be mere multiple choices questions as well as asking the user to write automata or regular expressions.

Another thing that can be said is that unlike others tools, this one is written with web technologies, which makes the program usable without any installation and will make the port on tablets easy. Thanks to web technologies, the program should work on any desktop operating system, provided a recent browser is installed, and the support for mobile operating systems should follow quickly.

The following table[1] compares Aude with some other tools of the domain.

Feature	**Aude**	**jFAST**	**jFLAP**	**Visual Automata Simulator (VAS)**	**Finite Automata Tool (FAT)**
Finite-state automata	✔	✔	✔	✔	✔
Turing Machine	✘	✘	✔	✔	✘
Mealy Machine	✘	✘	✔	✘	✘
More Machine	✘	✘	✔	✘	✘
Pushdown automaton	✘	✘	✔	✘	✘
Grammar Manipulation	✘	✘	✔	✘	✘
Draw automata	✔	✔	✔	✔	✘
Regular expression to FSA	✔	✘	✔	✘	✘
Run a word	✔	Complete DFA only	✔	no epsilon transition	✘
Apply basic algorithms	✔	✘	Determinization, minimization, completion	Determinization	Union, Intersection, Complementation, Minimization, Determinization
Combine two automata	✘	✘	✔	✘	✘
Quiz	✔	✘	✘	✘	✘
Games	✘	✘	Pumping Lemma	✘	✘
User's algorithms	✔	✘	✘	✘	✘
Consult built-in algorithms	✔	✘	✘	✘	✘
Automatic automaton drawing	✔	✘	✘	✘	✘
Automaton code input	✔	✘	✘	✘	✔
Run online	✔	Java RE	Java RE	Java RE	Java RE
Requires	A Web browser	Java	Java	Java	Java

[1]Icons in the table come from the Oxygen theme: http://www.oxygen-icons.org/