

Agentsheets

Contact Information

U.S.A: Agentsheets Inc.
Prof. Dr. Alexander Repenning, ralex@cs.colorado.edu
<http://www.agentsheets.com/development/>

Europe: Fraunhofer Institute, Computer Graphics
Dr.-Ing. Stefan Noll, noll@igd.fhg.de
<http://www.igd.fhg.de/www/igd-a9/>

Applications

Agentsheets is an agent-based spreadsheet that can be used to create SimCity™-like interactive simulations, domain-oriented visual programming environments, games and cellular automata. Combined with Visual AgenTalk, Agentsheets is a versatile computational medium for a variety of computer **end users** ranging from K-12 students to professionals.

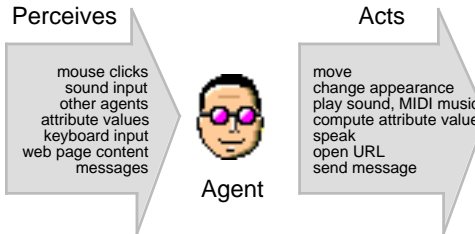


Over 100 applications have been created with Agentsheets in areas including education, fine art, computer science, and engineering.



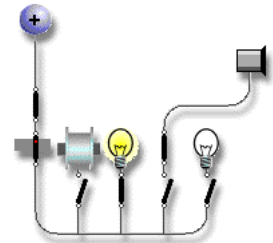
Agents

In Agentsheets, agents are autonomous processes that are imbued with the capability to *perceive* and *act* in their environment.



Agentsheets

Agents are organized in a grid called the *agentsheet*. Agents communicate with each other directly or via spatial relationship provided by the agentsheet.



Agents can represent interactive and autonomous domain components such as switches, wires and light bulbs.

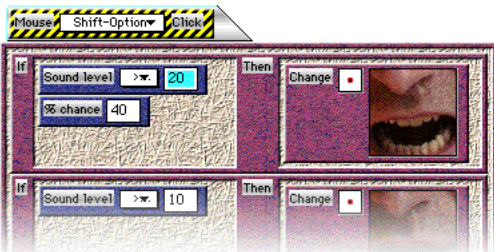
Visual AgenTalk

Visual AgenTalk is a rule-based end user programming environment for Agentsheets. It employs a new approach to end user programming called *Tactile Programming*. Tactile Programming primitives and programs not only have enhanced visual representations to help program readability, but also have interactive interfaces to assist with program writability. Tactile programming eases program *composition, comprehension* and *sharing*.

Composition

Programs can be decomposed and composed incrementally along clearly defined boundaries.

Triggers define when to match rule groups

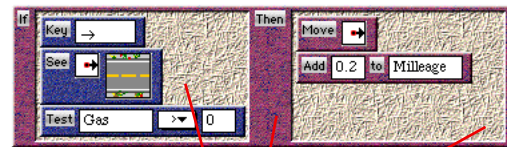


Conditions define perceivable situations

Actions change the state of the world

Comprehension

Perception by manipulation allows end users to efficiently examine functionality. Any language component at any time can be dragged and dropped onto any agent. The component will execute with visual feedback revealing conditions that are true or false and showing the consequences of executed actions.



condition list rule action list



action or condition

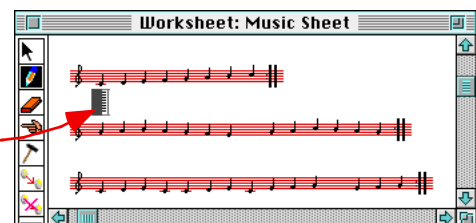


Sharing

Tactile programming supports a migration from solitary to social programming. Entire simulations, individual agents, rules and new language primitives can be shared via the World Wide Web by simply dragging them from the web page into Agentsheets. No plug-ins required.



Embedded Web Agents include look and behavior. Users can access rules and icons to modify them once the agent is in Agentsheets.

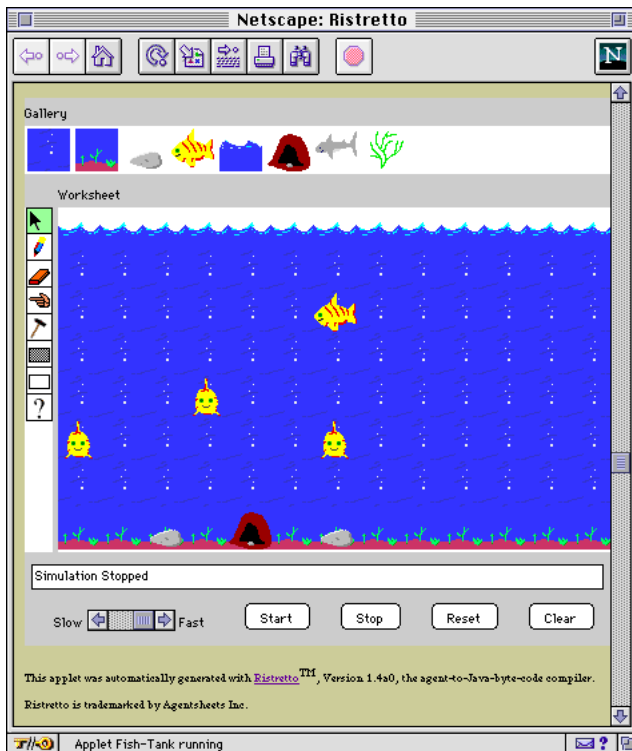


Center for LifeLong Learning and Design
University of Colorado at Boulder



Ristretto™

Ristretto (ris-tret-oh) n. A 'short pull' (stronger) espresso. A Ristretto is an espresso made with less (half) the water used for a regular espresso **adj.** condensed, constrained



Ristretto™ is the name of a new compiler technology allowing end-users to compile Agentsheets projects directly into Java applets. Without the need to understand Java programming end-users, at the push of a single button, create SimCity™-like interactive simulations that can easily be embedded into web pages. Ristretto generated simulations can be used via the web from a wide variety of machines including PC/Windows, Macintosh, and Unix computers.

Ristretto includes two types of compilers. The Resource compiler will directly convert resources such as icons produced by end-users into formats compatible with Java. At the incredibly speed of > 10000 lines of code per second the behavior compiler translates the Visual AgenTalk language directly into Java byte codes. The ease of use of programming afforded by Visual AgenTalk combined with the transparent use of Java compiler technology enable end-users - not professional programmers - to create running interactive simulations for the web in a matter of minutes.

<http://www.cs.colorado.edu/~corrina/mud/>

Award:

WebQuest was named "Best Application of the WWW to Education" at WWW5 - Paris '96.



WebQuest

Contact Information

Corrina Perrone
corrina@cs.colorado.edu
<http://www.cs.colorado.edu/~corrina>

WebQuest

WebQuest is a design environment for the creation of interactive simulation games that use the World Wide Web (WWW) as a research tool. WebQuest blends a programmable quest game, based on the Agentsheets programming substrate, with the Netscape Navigator WWW browser to provide middle school students with a constructionist virtual workbench. Students are not only players of quest games in WebQuest, they become authors as well.

VAT WebQuest

Visual AgenTalk WebQuest is a new project at the Center for LifeLong Learning and Design. The focus of VAT WebQuest will be to use the visual programming characteristics of Visual AgenTalk to broaden the capabilities of students to design new game environments which include backgrounds, pieces, and objects which correspond to their research themes.

Research Sponsors

This research is supported by the National Science Foundation under grant number RED 925-3425, the Defense Advanced Research Projects Agency under Cooperative Agreement No. CDA-940860, Apple Computer, Inc., and PFU.



Ristretto is trademarked by Agentsheets Inc.