SimBionic

Rapid Development of Game AI

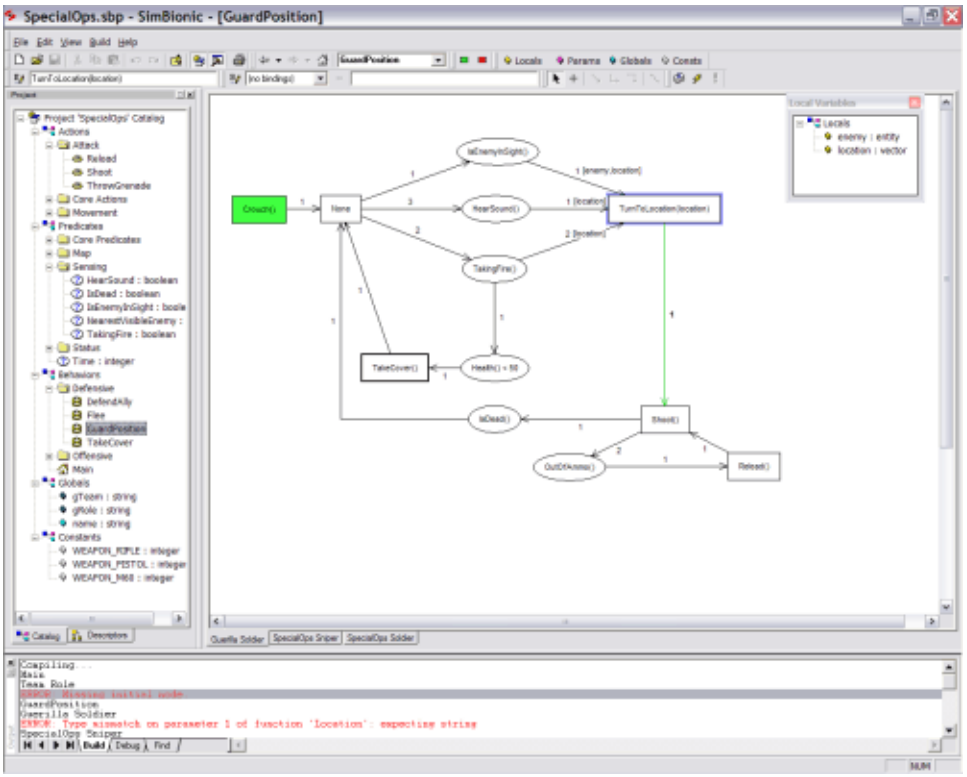
SimBionic is composed of two basic components - a visual editor for authoring AI programs, and a state-of-the-art run-time engine for executing those programs.

SimBionic Editor: Creating Intelligent Behaviors

SimBionic's editing system makes it a breeze for you to specify all of your virtual world's characters-that is, all the beings and objects that perform actions in that world.

The editor also makes it simple for you to articulate each character's behavior via four programming constructs: *actions*, which define all the different actions an entity can perform; other *behaviors* you've previously created (**SimBionic** lets any behavior invoke any other behavior, enabling you to build up a library of behaviors and efficiently reuse your work); *conditions*, which set the conditions under which each action and behavior will happen; and *connectors*, which control the order in which conditions are evaluated, and actions and behaviors take place.

With **SimBionic**, you can create game AI with exceptional ease by *drawing* it as flow-chart diagrams on the right side of your editing window. Specifically, actions are represented as rectangles, behaviors as boldfaced rectangles, conditions as ovals, and connectors as lines. You can attach as many variable assignments, complex expressions, and explanatory comments as you like to any of these elements.



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This highly intuitive visual approach allows you to see your program's logic at a glance, and quickly spot potential bugs or other difficulties. The visuals also make it a snap for you to show and discuss your work with other members of your development team including typically non-technical members such as conceptual designers and illustrators.

Some key features of **SimBionic**'s IDE include:

- A comprehensive **integrated development environment** incorporating editor, debugger, and run-time engine.
- A highly intuitive **visual editor** accessible to the development team.
- A fully-integrated **debugger** that features code stepping, breakpoints, watch lists, arbitrary expression evaluation, and remote debugging ability.

SimBionic Engine: Running Intelligent Behaviors

Notable features of **SimBionic**'s sophisticated engine, which is the *brains* driving the behaviors of the entities you've created, include:

- Impressive speed, backed by a load-balancing scheduling system that minimizes impact on frame rate.
- Efficient use of memory, thanks to both a small footprint and the engine's own memory management system.
- A thin API for easy integration with virtually any C++ game, Java applet, or web server application.
- Stack-based hierarchical execution, which lets any behavior invoke any other behavior, which in turn can invoke any other behavior, ad infinitum, allowing you to construct sophisticated behaviors from simpler ones and efficiently reuse your work.
- Built-in commands supporting communication between entities via both message queues (that allow entities to join groups and exchange team messages) and virtual blackboards (that allow any entity to post messages that can be read by any other entity).
- Powerful API methods that let you precisely control when each entity is created, how often it executes, which behaviors it executes, and how extensively its activities are recorded.

Support for polymorphic indexing of behavior, allowing the game engine to dynamically select the appropriate behavior to perform based on the entity's object description.

System Requirements

The SimBionic authoring tools and runtime engine are compatible with Windows 2000/XP.

Contact

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