

Using the Agent Simulator

2013

Installation

Please follow instructions specified for your platform.

GNU/Linux

1. Using your distribution's package management system, install libraries SDL and SDL_gfx. In Ubuntu, libraries can be installed by issuing this command as user root:

```
# apt-get install libsdl1.2debian libsdl-gfx1.2-4
```

In OpenSUSE, you can run this command:

```
# zypper install libSDL-1_2-0 libSDL_gfx13
```

In Gentoo, this command will install the necessary packages:

```
# emerge -av media-libs/libsdl media-libs/sdl-gfx
```

2. The directory in the second line of the file `run.lisp` must be changed to match the project root directory, e.g.

```
(cd "~/agentsim")
```

If you have 64-bit architecture and want to use 32-bit LispWorks Personal Edition, make sure you have the libraries mentioned above compiled for the 32-bit architecture. You might have to compile the libraries for the different architecture yourself.

Windows

Libraries for the 32-bit architecture are bundled with this software. Just change the second line of the file `run.lisp` to match the project root directory, e.g.

```
(cd "c:\\Users\\user\\Documents\\agentsim")
```

Usage

1. Load the file `run.lisp` in your favourite Common Lisp implementation. Tested working implementations include LispWorks 6.1 Personal Edition on Windows and 32-bit GNU/Linux, CLISP on GNU/Linux and SBCL also on GNU/Linux. For LispWorks 6.1 Personal Edition on 64-bit GNU/Linux see the note above.
2. Choose the game, you want to play, and run it. E.g. the game Hide&seek with `ask-user-agent` can be started by:

```
(run-gui (make-hs-world6))
```

Substitute `hs` with `tl` for Touch-last or `bs` for Blind-seek game.

3. Window shows up looking like Figure 1.
4. In Hide&seek, you can use keys *Q*, *W* and *E* to move north-west, north and north-east. Keys *A* and *D* turn the agent to the left and to the right. Pressing *P* causes the agent to pyky, *S* stops the game. For details consult the rules of the chosen game.

Implementing your own agent

1. Create a Lisp file for your agent in the directory `agent` with the name like `hide-seek6-FITusername.lisp` and contents from the template as shown in the game file, e.g. `hex/hide-seek6.lisp`.
2. Inside the game file, e.g. `hex/hide-seek6.lisp`, change the environment definition at the top to include your agent instead of the `ask-user-agent`.

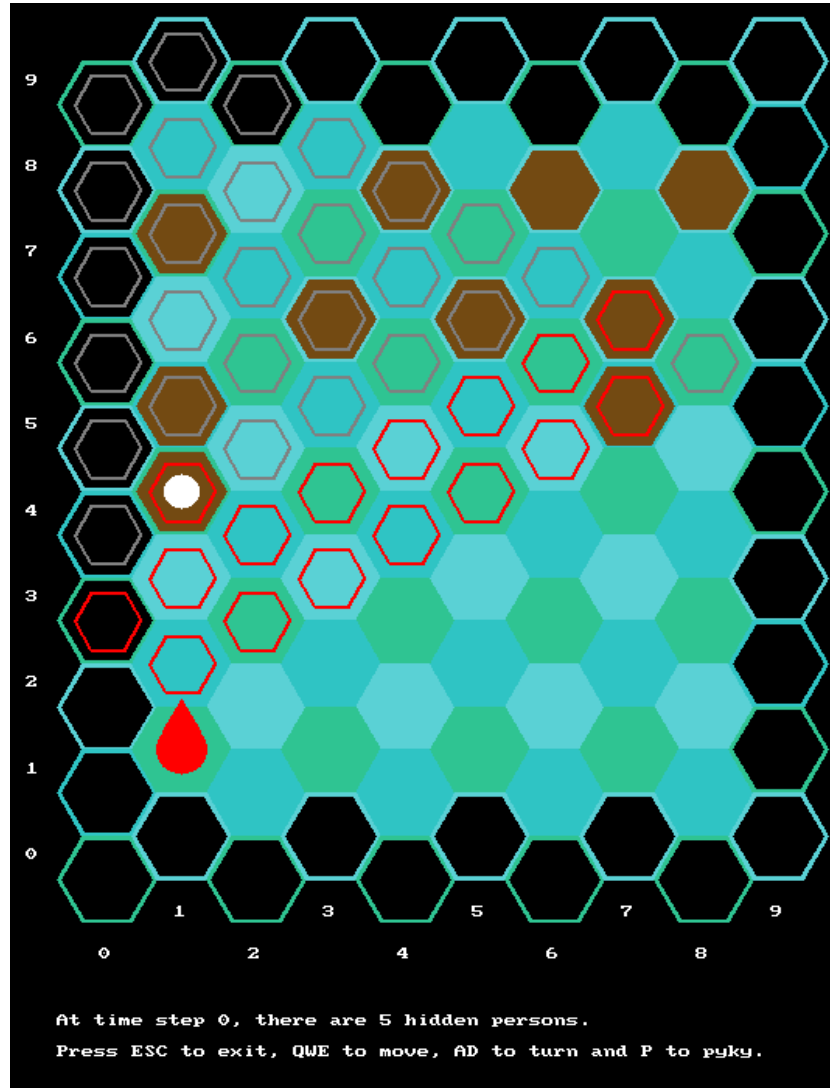


Figure 1: Running the ask-user-agent. Empty hexagons with red border mark a visible cell in percept. Grey border marks a cell in a shadow (dark).

3. Add a line to load the file containing your agent to the file `loadfiles.lisp`. Then load `run.lisp` or just `loadfiles.lisp`, if you have already loaded `run.lisp` before.
4. Start the simulation with your agent by running e.g.:

```
(run-gui (make-hs-world6))
```

5. You can now see, what your agent does at each time step. Control the simulation by performing one of the following actions:
 - (a) Press *Escape* to exit the simulation.
 - (b) Press numeric keys *1* to *9* to forward the time by *n* steps.
 - (c) Press *0* to forward the time by 10 steps.
 - (d) Press *H* to forward the time by 100 (*H*undred) steps.
 - (e) Press *T* to forward the time by 1000 (*T*housand) steps.
 - (f) Pressing any other key will forward the time by 1 step.