

Lesim-Mode: Edit Learning Simulator Scripts in Emacs

Stefano Ghirlanda

May 19, 2023

Lesim-Mode is an Emacs major mode to write and run Learning Simulator scripts. To learn more about the Learning Simulator, see this short article and the online documentation.

Lesim-Mode does not understand the full Learning Simulator syntax. That is a job for Superman, that is, Learning Simulator chief software architect Markus Jonsson.

```
###
title: A simple test script
author: Stefano Ghirlanda
date: 2023-05-03
summary: Just to show off lesim-mode
###

n_subjects      = 1
mechanism       = sr
behaviors       = response, no_response
stimulus_elements = background, stimulus, reward
start_v         = 0.1
start_w         = 0.1
alpha_v         = 0.1
u               = reward:10, default:0

@phase training stop: stimulus==10
START_TRIAL stimulus | response: REWARD(.5) | NO_REWARD
REWARD reward | START_TRIAL
NO_REWARD background | START_TRIAL

@run training

@figure v(stimulus->response)
@subplot 111 {'xlabel':'exposures to stimulus', 'ylabel':'v-value'}
@vplot stimulus->response
```

Figure 1: Sample screenshot

1 Installing

Install from here for now, hopefully from MELPA later. It's enough to put `lesim-mode.el` somewhere in your Emacs load path and then `(require 'lesim-mode)` in your `.emacs.d/init.el`.

2 Using

- Syntax coloring is enabled automatically.
- Parameter assignments are validated automatically and highlighted to reflect if they are correct and incorrect.
- `C-c C-c` runs the script in the Learning Simulator, highlighting any errors.
- `TAB` and `Shift-TAB` move between fields in phase blocks, and by word elsewhere. They also align phase blocks as `|` signs and parameter blocks at `=` signs. In phase blocks, they also highlight misspelled stimuli, behaviors, and phase line names.
- `C-c C-t` inserts a template script (see 3).

3 Configuration

Using `M-x customize-group lesim` you can configure:

- The command used to run the Learning Simulator (default: `lesim.py`).
- The key binding to run scripts.
- The key binding to align code.
- The key binding to insert a template script.
- Whether to insert a template script automatically upon opening an empty `.les` file (default: `nil`).

4 Bugs and planned features

Please use issues on Github for bug reports and feature requests.