

Lesim-mode: Edit Learning Simulator Scripts in Emacs

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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 helps to ensure that a script is correct by highlighting common syntax errors and typos, like misspelled keywords and stimulus elements. However, it does not understand the full Learning Simulator syntax. That is a job for Superman, that is, Learning Simulator chief software architect Markus Jonsson.

You can run Learning Simulator scripts directly from lesim-mode buffers. Errors are reported in the minibuffer and highlighted in the script buffer.

For integration with org-mode, see ob-lesim mode.

```
# title: A test script for lesim-mode
# author: Stefano Ghirlanda
# date: 2023-05-03
# summary: Just to show off. Contains errors and won't run.

n_subjects      = 1 # end of line comment
mechanism       = sr
behaviors       = response, no_response
stimulus_elements = background, stimulus, reward
start_v         = 0.1
start_v         = 0.1
alpha_v         = 0.1
u               = reward:10, default:0
beta            = 1x # invalid value

###
Multiline comment
###

@phase training stop: stimulus==500
START TRIAL stimulus | x=2, response: REWARD(.5) | NO_REWARD
REWARD reward | START_TRIAL
NO_REWARD background | START_TRIA # misspelled line name

# these are wrong:
@run xtraining
@run my_run xtraining

# these are correct:
@run training
@run my_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 add the `lesim-mode` directory to your Emacs load path and `(require 'lesim-mode)` in your `.emacs.d/init.el`.

2 Using

- Syntax highlighting is enabled automatically.
- Parameter assignments and other constructs are validated automatically and highlighted to reflect if they are correct or not.
- `C-c C-c` runs the script in the Learning Simulator, highlighting any errors.
- `TAB` and `Shift-TAB` in move between fields in phase blocks, and by word elsewhere. They also align phase blocks as `|` signs and parameter blocks at `=` signs.
- `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.