Useful Emacs and Lisp Hints

1) For those unfamiliar with Emacs, the manual is online here:

http://www.gnu.org/software/emacs/manual/emacs.html

You can also read the tutorial built into Emacs by starting Emacs and then typing C-h t (Control key and h, then press t).

2) A lot of the problems in writing the grammar will be caused by mismatched parentheses. You can get Emacs to show you what parenthesis goes with which, by typing:

`M-x show-paren-mode`

Then when you put the cursor after a close parenthesis or on an open parenthesis, it will highlight the corresponding opening or closing parenthesis. (show-paren-mode works much better when Emacs is open in a separate window, but unfortunately we have to open Emacs in the console window in the Lab.)

3) Instead of typing in the commands to load the parser file (v4-8-rt.lisp and sys:chdir, etc.) each time you start Lisp, you can put them into a file called init.lsp, which Lisp will automatically load when it starts. The init.lsp file needs to be in the same directory that you start Emacs and Lisp from.

A sample init.lsp is:

```
(load "/afs/cs.cmu.edu/project/cmt-55/lti/Lab/Modules/GNL-721/parser/v8-4-rt.lisp")
(system:chdir "/afs/cs.cmu.edu/user/myaccount/mygrammardir")
;(compgra "project")
```

The last line `(compgra "project")` is optional, but useful if you also want to load your grammar project whenever you start. Remove the semi-colon to uncomment it.

4) According to Erik Peterson, Allegro Lisp for Windows is also capable of running the parser, with one small change. When you load the v8-4-rt.lisp file it will stop with an error saying that a variable is being redefined. If you tell it to continue anyway, you can work normally from there.

5) .emacs File

A .emacs file (notice the dot) is an initializations file that Emacs reads each time Emacs starts up. You can put all kinds of useful commands in your .emacs file. The .emacs file should be located in your home directory (ie /~), and if it doesn't exist you can create one.

Here are some useful commands to have in a .emacs file:

```
(show-paren-mode t)      ; turns on paren matching
(transient-mark-mode t) ; selected text is highlighted

(cond ((fboundp 'global-font-lock-mode)  ; colors different kinds of text
           ;; Turn on font-lock in all modes that support it
           (global-font-lock-mode t)
           ;; Maximum colors
           (setq font-lock-maximum-decoration t)))
; Automatically go into Lisp mode whenever you load a .gra file
(setq auto-mode-alist (cons '("\\.gra\\'" . lisp-mode) auto-mode-alist))
```

6) lisp-mode

The grammars files are a lot like lisp code and Emacs has a special mode for editing Lisp files. In particular, it will help you indent each line to match up with preceding and following lines. To indent just hit the Tab key while on a line.

You can enter lisp mode two ways:

If you have already loaded the grammar file, you can type:

```
M-x lisp-mode
```

If you want Emacs to automatically go into Lisp mode whenever you load a grammar (.gra) file, you can add the following line to your .emacs file.

```
(setq auto-mode-alist (cons '("\\.gra\\'" . lisp-mode) auto-mode-alist))
```

7) Lisp Debug Mode

When lisp encounters an error it goes into a debug mode, represented by 2 or more angle brackets at the prompt:

```
>>
```

To get out of debug mode and return to the regular interpreter,
type a colon followed by a "q"

```
:q
```


8) Running Emacs in a Separate Window

From a computer using Unix or Linux as its operating system you can run Emacs as a separate window instead of inside a console window. Before logging into shaggy.speech.cs.cmu.edu, type:

```
xhost +shaggy.speech.cs.cmu.edu
```

Then log into the Unix/Linux machine, and type:

```
setenv DISPLAY codeine.weh.andrew.cmu.edu:0
```

replacing "codeine.weh.andrew.cmu.edu" with the name of the Linux or Unix machine you are logged into. Be sure to include the colon and zero at the end.

Now you can start emacs by just typing "emacs &" on the LTI machine and it should appear as a separate window.

From a windows machine that has X-Win32 installed it is also possible to run Emacs as a separate window. Unfortunately the Lab machines do not have X-Win32 installed.