

the Controller is almost entirely Emacs Lisp code. Lisp primitives manipulate buffer contents (the Model) and the window layout. Redisplay code (the View) updates the display without explicit guidance from the Lisp code. Neither the buffer's implementation nor the redisplay code can be customized by Lisp code.

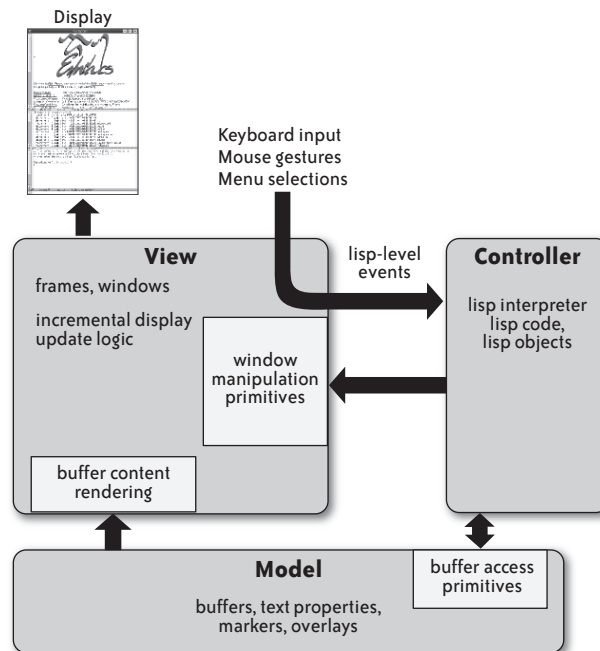


FIGURE 11-2. The Model-View-Controller pattern in Emacs

The Model: Buffers

Emacs edits text files, so the heart of Emacs's Model is the *buffer* type, which holds text. A buffer is simply a flat string, where newline characters mark line endings; it is not a list of lines, nor is it a tree of nodes, like the document object model that web browsers use to represent HTML documents. Emacs Lisp has primitive operations on buffers that insert and delete text, extract portions of buffer text as strings, and search for matches of exact strings or regular expressions. A buffer can hold characters from a wide variety of character sets, including those needed to write most Asian and European scripts.

Each buffer has a *mode*, which specializes the buffer's behavior for editing a given kind of text. Emacs includes modes for editing C code, XML text, and hundreds of other kinds of content. At the Lisp level, modes use *buffer-local key bindings* to make mode-specific commands available to the user, and use *buffer-local variables* to maintain state specific to that buffer.