Date, Time and Number Formats

The following sections discuss the enormous differences in the forms of dates, times, and numbers. These differences should all be considered and accounted for when using worldwide system software, particularly the Macintosh Script Management System.

Date and Time

Formatting dates and times for a particular script and region requires the specification of the elements in the date or time, the number of digits used for each numeric element (for example, 3/01/90 or 3/1/90), the names of the months and the days of the week, and other characteristics such as the order of the elements and the use of A.M. and P.M. instead of a 24-hour clock.

Each 'itl0' resource contains short date and time formats. Each 'itl1' resource contains long date formats. With system software version 7.0, the 'itl1' resource can be optionally extended to contain a list of extra day names for calendars with more than 7 days, a list of extra month names for calendars with more than 12 months, a list of abbreviated day names, a list of abbreviated month names, and a list of additional date separators. See **The 'itl0' Resource** and **The 'itl1' Resource** for details.

Currency and Measurement

Currency formats include the specification of the currency indicator (for example, $, £, or DM) and whether it precedes or follows the value. Units of measurement can be specified as metric or imperial (inches and miles). Each 'itl0' resource contains formats for currency and indicates the preferred measurement unit. See **The 'itl0' Resource** for details.

Calendars

Although it is very accurate and on the whole conforms to natural phenomena, the standard **Gregorian calendar** used in Europe and the Americas is not universally accepted. For example, different calendar systems are often used in Japan and the Arabic world.

For instance, the **Arabic calendar** is lunar rather than solar. The months are alternately 29 and 30 days long, so the Arabic calendar year is about 11 days shorter than the Gregorian year. The months have no fixed relation to the sun, so they slowly rotate through all of the seasons of the year (that is, every three years the months shift forward one month). The Arabic calendar is used extensively throughout the Middle East. Examples of other calendars include Chinese, Coptic, Japanese, and Jewish.

The Macintosh represents dates in memory as the absolute number of seconds since January 1, 1904. For more on this topic, see the discussion "Working With Date Formats and Calendar Conversion" in *Macintosh Worldwide Development: Guide to System Software*.

With system software version 7.0, the 'itl1' resource has been extended to contain an optional calendar code. Multiple calendars may be available on some systems, and it is necessary to identify the particular calendar for use with the 'itl1' resource. Constants for the various calendars are listed in **Script Manager Data**.

Numbers

Scripts differ in many aspects of the representation of numbers, so you need to make allowances for different formats of numbers. The Japanese script, for instance, uses the standard ASCII Western digits, double-byte encodings of the same Western digits, and native Japanese number characters, which occur in both a standard and a nonforgeable form-that is, a form that cannot be converted into another digit by the addition of strokes (used for financial instruments and so forth). Each 'itl0' resource contains formats for numbers.