

To test whether `str1` is less than or equal to `str2`, we'd write

```
if (strcmp(str1, str2) <= 0)    /* is str1 <= str2? */
    ...
```

By choosing the proper relational operator (`<`, `<=`, `>`, `>=`) or equality operator (`==`, `!=`), we can test any possible relationship between `str1` and `str2`.

`strcmp` compares strings based on their lexicographic ordering, which resembles the way words are arranged in a dictionary. More precisely, `strcmp` considers `s1` to be less than `s2` if either one of the following conditions is satisfied:

- The first i characters of `s1` and `s2` match, but the $(i+1)$ st character of `s1` is less than the $(i+1)$ st character of `s2`. For example, "abc" is less than "bcd", and "abd" is less than "abe".
- All characters of `s1` match `s2`, but `s1` is shorter than `s2`. For example, "abc" is less than "abcd".

As it compares characters from two strings, `strcmp` looks at the numerical codes that represent the characters. Some knowledge of the underlying character set is helpful in order to predict what `strcmp` will do. For example, here are a few important properties of the ASCII character set:

ASCII character set ► Appendix E

- The characters in each of the sequences A–Z, a–z, and 0–9 have consecutive codes.
- All upper-case letters are less than all lower-case letters. (In ASCII, codes between 65 and 90 represent upper-case letters; codes between 97 and 122 represent lower-case letters.)
- Digits are less than letters. (Codes between 48 and 57 represent digits.)
- Spaces are less than all printing characters. (The space character has the value 32 in ASCII.)

PROGRAM Printing a One-Month Reminder List

To illustrate the use of the C string library, we'll now develop a program that prints a one-month list of daily reminders. The user will enter a series of reminders, with each prefixed by a day of the month. When the user enters 0 instead of a valid day, the program will print a list of all reminders entered, sorted by day. Here's what a session with the program will look like:

```
Enter day and reminder: 24 Susan's birthday
Enter day and reminder: 5 6:00 - Dinner with Marge and Russ
Enter day and reminder: 26 Movie - "Chinatown"
Enter day and reminder: 7 10:30 - Dental appointment
Enter day and reminder: 12 Movie - "Dazed and Confused"
Enter day and reminder: 5 Saturday class
Enter day and reminder: 12 Saturday class
Enter day and reminder: 0
```