`country:` This allows for the mapping of the 2 letter ISO country codes (such as GB and FR) onto locally meaningful strings such as, for english speakers, Great Britain and Germany.

```
country:AU Australia
country:AT Austria
country:BE Belgium
```

There are a number of miscellaneous variables which may be set.

`maxPersons:` If a lot of matches are found, DE will display the matches in a short form, showing email address and telephone number only. Otherwise full entry details are displayed. This variable allows the number of entries which will be displayed in full to be set — the default is 3.

```
maxPersons:2
```

`inverseVideo:` Prompts are by default shown in inverse video. Unset this variable to turn this off.

```
inverseVideo:on
```

`delogfile:` Searches are by default are logged to the file *de.log* in `ISODE`s LOGDIR. They can be directed elsewhere by using this variable.

```
delogfile:/tmp/delogfile
```

`remoteAlarmTime:` A remote search is one where the country and organisation name searched for not the same as the defaults. If the search has not completed within a configurable number of seconds, a message is displayed warning the user that all may not be well. The default setting is 30 seconds. The search, however, continues until it returns or is interrupted by the user.

```
remoteAlarmTime:30
```

`localAlarmTime:` As for *remoteAlarmTime*, except for local searches. The default setting is 15 seconds.

```
localAlarmTime:15
```

Chapter 7

FRED

FRED is a DUA optimised for White Pages queries; it is actually implemented as an interface to DISH, hence the name FRED — **FR**ont **E**nd to **D**ISH.

7.1 Giving Commands to FRED

After invoking *fred* you are prompted with `fred>` indicating that FRED is ready.

If FRED is invoked interactively, it will look for a file in your home directory called *.fredrc*. It will execute the commands contained in this file just as if you had typed them directly to FRED. Following this, you are given the `fred>` prompt.

7.2 Let Your Fingers Do the Walking

Although FRED has several commands, the most interesting command is `whois`, which performs a white pages query.

Let's begin with some simple examples and introduce the other commands along the way. If you already know the handle of the person you are interested in finding out about, just give the handle:

```
fred> whois @c=US@cn=Manager
Manager (1)
```

```
Handle:        @c=US@cn=Manager
```

7.2.1 The Alias Command

Since handles are long strings, FRED will automatically maintain a list of aliases of the entries you have seen in the current session. The alias is always a number. When an entry is displayed, it appears on the first line in parenthesis after the name of the object. In the example above, the alias is `1`.

To find out what aliases are currently defined, use the `alias` command:

```
fred> alias
1    @c=US@cn=Manager
```

Thus, the previous `whois` command could have been shortened to simply:

```
fred> whois !1
Manager (1)

Handle:        @c=US@cn=Manager
```

Each time you invoke FRED, its list of aliases is empty. If there are few handles which you use often, you might wish to define them in your *.fredrc* file, e.g.,

```
alias "@c=US@o=DMD@cn=Manager"
```

Of course, the ordering of aliases is important. FRED will start numbering from 1 starting with the first `alias` command.

7.2.2 Back to Searching

Suppose however, that you don't know the handle for the person. In this case, you need to specify some search parameters. Logically, the first step is to ascertain the organisation which the person is likely to be associated with, e.g., "Performance Systems International". This is done as:

```
fred> whois organization psi
Performance Systems International (1)  +1 800-836-0400 (Operations)
     aka: PSI

PSI Inc.
```

```
  Reston International Center
  11800 Sunrise Valley Drive
  Suite 1100
  Reston, VA 22091
  US

PSI Inc.
  5201 Great American Parkway
  Suite 3106
  Santa Clara, CA 95054
  US

PSI Inc.
  165 Jordan Road
  Troy, NY 12180
  US

Telephone: +1 800-836-0400 (Operations)
           +1 800-82PSI82 (Sales)
           +1 703-620-6651 (Corporate/Reston Office)
           +1 518-283-8860 (Troy Office)
           +1 408-562-6222 (Santa Clara Office)
FAX:       +1 703-620-4586
           +1 518-283-8904
           +1 408-562-6223

value-added provider of networking services

Locality:    Reston, Virginia

Name:     Performance Systems International, US (1)
Modified: Mon Jul 30 05:18:24 1990
      by: Manager, Performance Systems International,
            US (2)
```

Second, to search for a particular person, you might use:

```
fred> whois rose -area 2
Marshall Rose (3)             mrose@psi.com
     aka: mtr
     aka: Marshall T. Rose

Principal Scientist
PSI, Inc.
```

```
    POB 391776
    Mountain View, CA 94039
    US

PSI, Inc.
    5201 Great American Parkway
    Suite 3106
    Santa Clara, CA 95054
    US

Telephone: +1 415-961-3380
           +1 408-562-6222 x6221
FAX:       +1 415-961-3282
           +1 408-562-6223

Mailbox information:
    internet: mrose@psi.com
    internet: mrose@cheetah.ca.psi.com

Principal Implementor of the ISO Development Environment

Beleaguered Manager of the PSI White Pages Pilot Project

A savvyNerd according to noSauce

Locality:    Santa Clara, California

Drinks:       Iced Tea (and lots of it...)

Name:     Marshall Rose, Mountain View,
            Research and Development,
            Performance Systems International,
            US (3)
Modified: Mon Sep 24 14:43:36 1990
      by: Manager, US (5)
```

Note the use of the alias 2. The command could also have been:

```
fred> whois rose -area "@c=US@o=Performance Systems..."
    ...
```

Double-quotes are used so that the DN appears as a single token to FRED.

Of course, this two-step process, whilst logical, is tedious. Thus, you can combine them like this:

```
fred> whois rose -org psi
    ...
```

which says to look for any organisations with "psi" in its name. Then, for each one, look for something called "rose".

7.2.3 The Area Command

Suppose you want information on several persons belonging to an organisation. You can use the `area` command, by itself, to tell FRED where to search for subsequent commands. For example,

```
fred> area "@c=US@o=Performance Systems International"
```

or simply

```
fred> area 2
```

Both tell FRED the default area used by the `whois` command. Of course, you can still use the '`-area`' area with the `whois` command to override the default area. Thus,

```
fred> whois alan -area "@c=US@o=Columbia University"
```

will do what you expect.

If you use the `area` command without any arguments, FRED will tell you what its default area is:

```
fred> area
@c=US@o=Yoyodyne
```

This indicates the default area for all commands, *including* any subsequent `area` commands. Thus, issuing

```
fred> area @c=US@o=Yoyodyne
@c=US@o=Yoyodyne

fred> area ou=Research
@c=US@o=Yoyodyne@ou=Research
```

is equivalent to

```
fred> area @c=US@o=Yoyodyne@ou=Research
@c=US@o=Yoyodyne@ou=Research
```

because a leading "@"-sign was not used before `ou=Research`.

As you might expect, there is a special string "`..`" which may be used to move up one level:

```
fred> area ..
@c=US@o=Yoyodyne
```

Combinations are possible as well, such as

```
fred> area ..@"o=Performance Systems International"
@c=US@o=Performance Systems International
```

which moves up a level and then down to
`o=Performance Systems International`

7.2.4 Getting Help

For a brief summary of FRED commands, type:

```
fred> help ?
```

This will list the commands that FRED knows about along with a one-line summary of their function.

For help on a particular command, type the name of the command followed by '`-help`', e.g.,

```
fred> alias -help
```

If you need more help, try

```
fred> manual
```

which is the same as

```
% man fred
```

from the shell.

7.2.5 Quitting

To terminate FRED, simply use:

```
fred> quit
```

7.3 Advanced Usage

This chapter has given a very brief overview of the basic FRED commands. For full details you should consult [Ros90a], which tells you how to make more complex search requests, edit your own entry, and how to use FRED to compose mail addresses using the MH mail system.

Chapter 8

SD

SD is a simple directory user agent for X.500 directory services.

SD supports the following directory operations:

- read
- list
- search

SD is limited in it's flexibility and does not allow modification of entries. If you want to use the full power of X.500 you should use the DISH interface described in Chapter 4.

SD is curses based, and splits the users screen up into a number of small areas called "widgets". Each widget is used to enter information.

8.1 Types of Widget

There are various types of "widget" used by the SD program, these are described in the following sections.

Each widget (except label widgets) have an identification "letter" associated with them, this is indicated by the left most character in the widget, for example, the widget below is identified by the letter "`b`".

```
h help
```

8.1.1 Label Widgets

Label widgets are used to simply write information to the screen, they do not accept any form of input.

8.1.2 Command Widgets

A command widget is used to make the program take some kind of action, such as send a *list* operation to the directory, or to change the set of widgets displayed.

To issue the command type the letter indicated in the widget.

8.1.3 Dialog Widgets

Dialog widgets are used to get information from the user. To use a dialog widget, press the letter associated with the widget. Any further input from the keyboard will be entered into the widget, a "return" character is used to end the input.

8.1.4 Toggle Widgets

Toggle widgets are used to select one of a set of pre-determined values. Simply enter the widget letter, and the value will change the next value in the circular list.

8.2 Using SD

The SD interface is invoked with the *sd* command. Help is given at any stage by typing "?", type "q" to quit.

8.2.1 Main Options

The "main options" set of widgets, presents the users with *quit, help, list, widen, history, search for* and *goto* commands.

The *search area* label widget informs the user of the currently visited directory entry. All directory operations are performed relative to the current *search area*.