

dimensional array. To search the `planets` array for strings beginning with the letter M, for example, we could use the following loop:

```
for (i = 0; i < 9; i++)
    if (planets[i][0] == 'M')
        printf("%s begins with M\n", planets[i]);
```

## Command-Line Arguments

When we run a program, we'll often need to supply it with information—a file name, perhaps, or a switch that modifies the program's behavior. Consider the UNIX `ls` command. If we run `ls` by typing

```
ls
```

at the command line, it will display the names of the files in the current directory. But if we instead type

```
ls -l
```

then `ls` will display a “long” (detailed) listing of files, showing the size of each file, the file's owner, the date and time the file was last modified, and so forth. To modify the behavior of `ls` further, we can specify that it show details for just one file:

```
ls -l remind.c
```

`ls` will display detailed information about the file named `remind.c`.

### Q&A

Command-line information is available to all programs, not just operating system commands. To obtain access to these *command-line arguments* (called *program parameters* in the C standard), we must define `main` as a function with two parameters, which are customarily named `argc` and `argv`:

### Q&A

```
int main(int argc, char *argv[])
{
    ...
}
```

`argc` (“argument count”) is the number of command-line arguments (including the name of the program itself). `argv` (“argument vector”) is an array of pointers to the command-line arguments, which are stored in string form. `argv[0]` points to the name of the program, while `argv[1]` through `argv[argc-1]` point to the remaining command-line arguments.

`argv` has one additional element, `argv[argc]`, which is always a *null pointer*—a special pointer that points to nothing. We'll discuss null pointers in a later chapter; for now, all we need to know is that the macro `NULL` represents a null pointer.

null pointers ► 17.1

If the user enters the command line

```
ls -l remind.c
```

then `argc` will be 3, `argv[0]` will point to a string containing the program