

# File Handling in C

## Writing and Reading Text Files

### Writing Text Files

Writing data to files (either floppy or hard disk), is not very different from writing data to the screen. But since there is only one screen, and many possible files, we need to specify the file we want to use and create something to point to it.

Writing to a file is done in three steps:

- 1) Specify the file name, its location and open the file
- 2) Print the information to the file
- 3) Close the file

**1) Specify the file name, its location and open the file.** This is in two parts which

a) requires the creation of a pointer to a file:

```
FILE *out_file;      /* out_file is NOT a special word it is */
                    /* your choice (it is a variable name). */
/* NOTE: The type name FILE must be in capitals as shown
here.*/
```

b) opening it in the 'write to' mode.

```
out_file = fopen("c:\\tc3\\my_dir\\datafile.dat","w");
/* NB since \ is a special character, */
/* we must use 2 (\\) to specify it. */
```

( *out\_file* is the pointer to the file, here with the full path. The "w" means open for writing. )

**IMPORTANT:** The directory to which you are writing the file **MUST** exist first.

**2) Print the information to the file or Write the data to file.**

```
fprintf( out_file, " %d,", an_int );
/* 'fprintf' writes the integer 'an_int' to file, as ASCII
characters. You will need a separator (a comma)
in the format string. eg "%d,"
The file is now specified by the pointer out_file,
and NOT the file name. */
```

**3) Close the file - all files must be closed or the data will not be able to be read.**

```
fclose( out_file );
/* again we simply specify the file by its pointer
(out_file).*/
```

## Reading Text Files

Reading data from a file (either floppy or hard disk), involves three steps similar to that of writing data to a file.

Reading from a file:

- 1) Specify the file name, its location and open the file
- 2) Read the information from the file
- 3) Close the file

**1) Specify the file name, its location and open the file.** This is in two parts which

a) requires the creation of a pointer to a file:

```
FILE *in_file;          /* in_file is NOT a special word it is */
                        /* your choice (it is a variable name). */
/* NOTE: The type name FILE must be in capitals as shown
here. */
```

b) opening it in the 'read from' mode.

```
in_file = fopen("c:\\tc3\\my_dir\\datafile.dat", "r");
/* NB since \ is a special character,
we must use 2 (\\) to specify it. */
```

(in\_file is the pointer to the file, here with the full path. The "r" means open for reading.)

**IMPORTANT:** The directory to which you are writing the file **MUST** exist first.

2) Read the information from the file.

```
fscanf( in_file, " %d,", &an_int );
/* 'fscanf' reads the integer 'an_int' from the file, by
translating the ASCII characters.
NOTE: You will need the separator (a comma)
which must correspond to that used when the file
was written.
The file is now specified by the pointer in_file,
and NOT the file name. */
```

3) Close the file - all files must be closed or it may be corrupted.

```
fclose( in_file );
/* again we simply specify the file by its pointer
(in_file). */
```