

Latex Resources for Writing Programming Books

劉邦鋒
臺灣大學資訊工程學系

June 19, 2020

Chapter 1

Examples

`programmingbook` is a package that I use to write programming books. It requires `listing` package and you can use it to write books in Chinese (with CJK). The latex source will look like this.

```
\documentclass[11pt,twoside]{book}

\usepackage{CJK}
\usepackage{programmingbook}

\begin{document}
\begin{CJK}{UTF8}{bsmi}
% your book here.
\end{CJK}
\end{document}
```

1.1 Program Listing

1.1.1 List the entire program

Use `programlisting` to list a program. The first argument is the file name, and the second argument is the caption.

```
\programlisting{scan-print.c}{從鍵盤讀入再顯示}
```

The previous code will produce the following.

範例 1.1: (`scan-print.c`) 從鍵盤讀入再顯示

```
1 #include <stdio.h>
```

```

2  /* main */
3  main()
4  {
5      int i;
6      scanf("%d", &i);
7      printf("%d\n", i);
8  }
9  /* mainend */

```

Note that you can refer to a program listing by `ex:filename`. For example you can refer to the previous example by `範例~\ref{ex:scanf-print.c}`, which will produce 範例 1.1.

1.1.2 List a part of a program

Use `programlistingrange` to list a part of a program. The first argument is the file name, and the second argument is the caption. The third and the fourth arguments specify the range (within comments) to print. For example you can print the main program of 範例 1.1 using the following.

```
\programlistingrange{scan-print.c}{從鍵盤讀入再顯示}{main}{mainend}
```

The previous code will produce the following.

程式片段 1.2: (scan-print.c) 從鍵盤讀入再顯示

```

3  main()
4  {
5      int i;
6      scanf("%d", &i);
7      printf("%d\n", i);
8  }

```

You can refer to a program segment listing by `ex:filename-start`. The `start` is the starting point (the third argument) of your `programlistingrange` command. For example you can refer to the previous example by `程式片段~\ref{ex:scan-print.c-main}`, which will produce 程式片段 1.2.

1.2 Input/Output Listing

Use `programinput` and `programoutput` to list program input and output. Note that the package uses `file.in` and `file.out` as the default file names to print if given the name `file`.

```
\programinput{scan-print}  
\programoutput{scan-print}
```

The previous code will produce the following.

輸入

```
1 100
```

輸出

```
1 100
```

1.3 Headers and Prototype

1.3.1 Fucntion Prototype

Use `prototype` to list the prototype of a function. The only argument is the file name.

```
\prototype{strlen.h}
```

The previous code will produce the following.

函式原型 1.3: (strlen.h)

```
1 int strlen(char *string);
```

You can refer to a prototype by `prototype:filename`. For example you can refer to the previous prototype by 函式原型~\ref{prototype:strlen.h}, which will produce 函式原型 1.3.