

Programming with C

Terry Marris December 2010

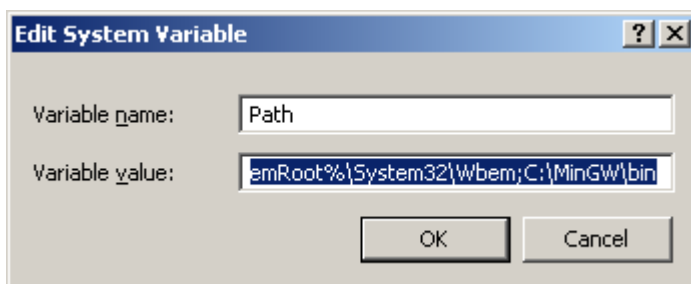
21 Program Development Environment

We see how to download a C compiler and how to pimp the Command window and Notepad, a text editor.

21.1 The GNU C Compiler

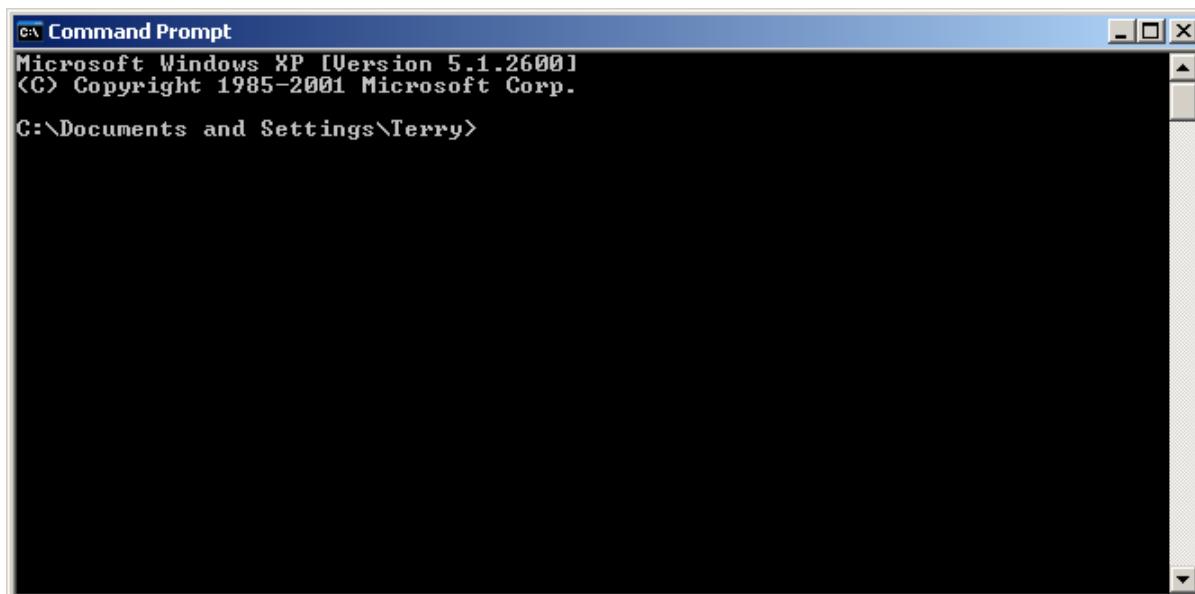
To obtain the GNU C Compiler for Windows visit www.mingw.org, select *Downloads* and download the current version. Accept the defaults.

Add `;C:\MinGW\bin` to the system path. In Windows XP choose: *Start, Settings, Control Panel, System, Advanced, Environment Variables*. Select *Path, Edit*. Then add `;C:\MinGW\bin` onto the end of the Variable value. Remember the semi-colon just before the C. *OK*.



21.1 Command Prompt

In Windows XP choose *Start, Programs, Accessories, Command Prompt*



That looks pretty ugly. We change the font. Right click on the Command Prompt title bar and choose *Properties, Font, Lucinda Console, OK*. Select *Modify shortcut that started this window. OK*.

At the command prompt enter *help* and, in the list of commands, look for *CD, CLS, DIR* and *PROMPT* in the list of commands

To obtain help on a particular command enter *<command> /?* e.g. *CLS /?*

The prompt, the point at which you issue commands, is a bit long. We seek to shorten it. Entering *prompt /?* we get

```

C:\Documents and Settings\Terry>prompt /?
Changes the cmd.exe command prompt.

PROMPT [text]

    text    Specifies a new command prompt.

Prompt can be made up of normal characters and the following special codes:

$A  & (Ampersand)
$B  | (pipe)
$C  ( (Left parenthesis)
$D  Current date
$E  Escape code (ASCII code 27)
$F  ) (Right parenthesis)
$G  > (greater-than sign)
$H  Backspace (erases previous character)
$L  < (less-than sign)
$N  Current drive
$P  Current drive and path
$Q  = (equal sign)
$S  (space)
$T  Current time
$V  Windows XP version number
$_  Carriage return and linefeed
$$  $ (dollar sign)

If Command Extensions are enabled the PROMPT command supports
the following additional formatting characters:

$+  zero or more plus sign (+) characters depending upon the
    depth of the PUSHd directory stack, one character for each
    level pushed.

$M  Displays the remote name associated with the current drive
    letter or the empty string if current drive is not a network
    drive.

C:\Documents and Settings\Terry>prompt $$
$

```

Here I have chosen to set the \$ as my command prompt.

21.2 Notepad

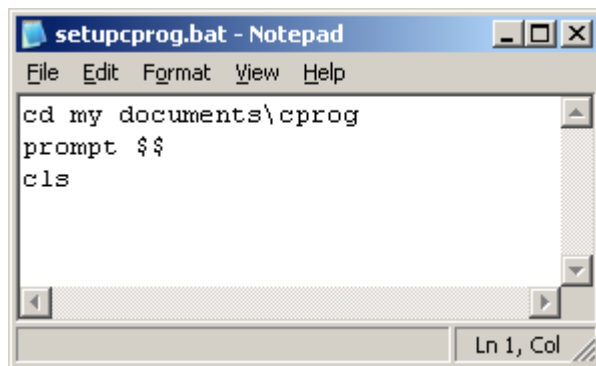
Notepad is the editor of choice. With it you can enter and amend C program text. In Windows XP choose *Start, Programs, Accessories, Notepad*.

We set the font: choose *Format, Font* and select *Courier New, Regular, 10, OK*.

We need to see line numbers for our coding. Choose *View* and select *Status Bar*. The current line and column number appear in the bottom right hand corner.

21.3 Batch Files

We can list a sequence of commands in a batch file. The name of the batch file must end in *.bat*.



This batch file is named *setupcprog.bat*. The line

```
cd my documents\cprog
```

changes the directory (or folder) to the once named *cprog*.

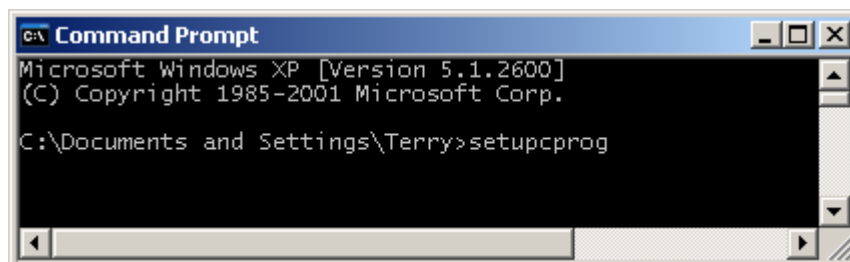
```
prompt $$
```

changes the command prompt to a dollar sign.

```
cls
```

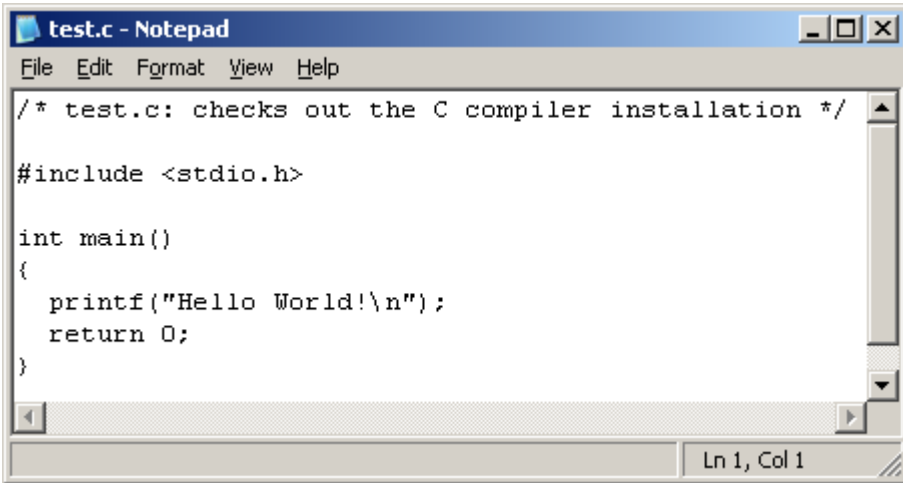
clears the screen.

To run this program we enter the batch file's name at the command prompt.



21.4 Compiling, Linking and Running

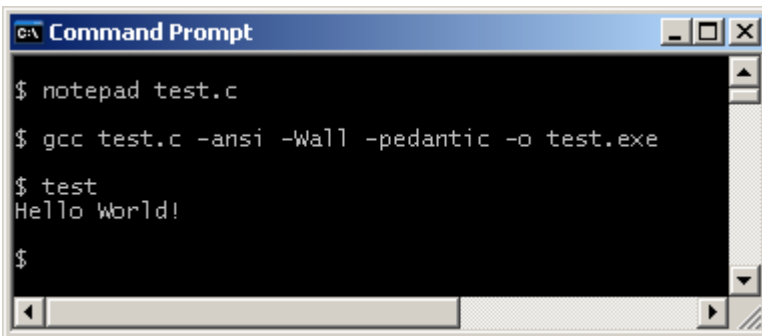
Load Notepad by entering *Notepad test.c* at the command prompt. Enter a simple program and choose File, Save.



```
test.c - Notepad
File Edit Format View Help
/* test.c: checks out the C compiler installation */
#include <stdio.h>
int main()
{
    printf("Hello World!\n");
    return 0;
}
Ln 1, Col 1
```

Load the compiler and linker with

```
gcc test.c -ansi -Wall -pedantic -o test.exe
```



```
c:\ Command Prompt
$ notepad test.c
$ gcc test.c -ansi -Wall -pedantic -o test.exe
$ test
Hello World!
$
```

Run the program with

```
test
```

gcc loads the MinGW C Compiler. *test.c* is the text file to be compiled. *-ansi*, *-Wall* and *-pedantic* are switches to the compiler requesting that statements not conforming to the ANSI C standard are reported as errors. *-o* is for output. The output is named *test.exe*.

You can use the \uparrow and \downarrow keys on the keyboard to revisit previous commands issued by yourself.

Any problems? Let me know.

Bibliography

www.mingw.org accessed December 2010.