App. Note Code: 4-V

APPLICATION NOTE

Collecting and Displaying Weather Data on the Web

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Collecting and Displaying Weather Data on the Web

This application note describes creating Web pages that contain tabular and other charts of weather station data. The note assumes the reader is familiar with Campbell Scientific's PC208W and RTDM software, batch file programming, and HTML programming. Appendix A includes an example HTML file.

NOTE

Before you begin, contact your Network Administrator, MIS department, or ISP to determine what file type and limitations are necessary for your server. They can identify the correct file extension (.htm vs .html), server case sensitivities (all caps, no caps, mixed, etc.), and provide information for file format.

Tabular Display Procedure

1. Install a weather station.

2. Program the datalogger to measure the sensors and process the data by using Edlog (part of PC208W) or SCWIN.

3. Set up PC208W to collect data on a schedule and to append the data to a data file.

4. Create two HTML files. (The HTML code will need to be saved into two separate files, and eventually the Split file created in step 5 will be placed in-between.) The basic structure of an HTML file looks like this:

   <!DOCTYPE…>
   <html>
   <head>
   <title></title>
   </head>
   <body>

   Your data

   </body>
   </html>

   Save the structure as two separate files, including <!DOCTYPE…> through <body> in the first file, and the

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closing tags </body> and </html> in the second file. In our example (Appendix A), we've added some additional tags to define format, fonts, color, etc.

5. Run Split (part of PC208W) to create a tabular report of the data.

6. Combine the two HTML files and the Split file using batch file commands in the following order: first HTML file, Split file, second HTML file.

Chart Procedure

1. Follow steps 1 - 3 of the tabular display procedure.

2. Use RTDM to create a chart of the data.

3. Set up RTDM to make a .JPG image of the chart which allows the chart to be displayed on the Web page.

4. Enable RTDM to update the chart and output a new .JPG image whenever a data file associated with the chart changes.

Tabular Display Example

The HTML code used to create the tabular weather data web page, "Logan - 24 Hour Table" are provided as a unit in Appendix A. We have broken them out and described them below.

The first HTML file is named LC24A and it contains the code that's listed below.

NOTE

Comments are entered in italics. For just the HTML code, see Appendix A.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">
<HTML>

<HEAD>
<TITLE>Logan - 24 Hour Table</TITLE>
<META NAME="author" CONTENT="Campbell Scientific, Inc.">
<META NAME="description" CONTENT="Logan -24 Hour Table">
<META HTTP-EQUIV="refresh" CONTENT="300">
</HEAD>
```


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Not all browsers support the "refresh" META tag. This tells the browser how often to reload the page, in seconds.

```
<BODY BACKGROUND="back.gif" BGCOLOR="#ffffff"
TEXT="#000000" LINK="0000ff"
VLINK="#800080" ALINK="#ff0000">
<FONT FACE="Arial">
```

This code determines how your page will look—the background color and/or image, as well as the color and text typeface.

```
<H1 ALIGN="center">Logan - 24 Hour Table</H1>
</FONT><HR>
```

The code that follows will affect the data table when all of the files are combined. We've defined how we want the data to look using <CENTER> and <PRE>. Only the start tags of these are included in this file. The end tags </PRE> </CENTER> need to be included in the second html file so they appear after the data table when the files are combined.

```
<CENTER><PRE><B>
```

Date	Time	Wind Speed (mph)	Wind Dir (deg)	Air Temp (F)	Rel Hum (%)	Total Precip (in)	</B>

The column headings that are entered here need to be a maximum of eight characters if the default field width was used in the Split parameter file. You can either cut-and-paste the Split headings or type them in. If you cut-and-paste the field headings, some spaces will need to be deleted from the front of each line to reduce the first field to eight characters.

The second HTML file is named LC24C, and contains the following commands.

```
</PRE></CENTER>
```

Only the end tags are included for the /PRE and /CENTER commands because the start tags are included in the first HTML file.

```
<FONT FACE="Arial">
<HR>
```

```
<H3 ALIGN="center"><A HREF="csiweath.html#lc">Back to
Weather Station's Page</A></H3>
```

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The A HREF code specifies a hypertext link back to a web page named csiweath.html. We've specified the font used (Arial), the size of the text (H3), and that it is centered on the page (align="center").

<CENTER><P>Copyright &#169 2000 Campbell Scientific, Inc.</P></CENTER>

This simply states the page is copyrighted.

</FONT>
</BODY>
</HTML>

Only the /BODY and /HTML end tags are included here since the start tags are included in the first html file.

Execute Split and create an output file named LC24 that contains hourly data arrays.

If you're using batch file programming to run Split, the commands will be the following (provided you installed PC208W in the default installation directory):

C:\> CD C:\PC208W\BIN
C:\PC208W\BIN > START /WAIT SPLITR C:\PC208W\LC24/R

The Windows 95/NT START command with the /WAIT command line option is used so that the rest of the batch file will not be executed until SPLITR is terminated. The newly created file will be the body of the Web page.

Use batch file commands to combine the files:

C:\PC208W\BIN > CD \C:\PC208W
C:\PC208W > COPY LC24A.HTM+LC24B.HTM+LC24C.HTM
C:\HTML\LC24.HTML /B

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Appendix A. Example HTML Code

The following file is created when the three files have been combined.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">
<HTML>

<HEAD>
<TITLE>Logan - 24 Hour Table</TITLE>
<META NAME="author" CONTENT="Campbell Scientific, Inc.">
<META NAME="description" CONTENT="Logan -24 Hour Table">
<META HTTP-EQUIV="refresh" CONTENT="300">
</HEAD>

<BODY BACKGROUND="back.gif" BGCOLOR="#fffff"
TEXT="#000000" LINK="0000ff" VLINK="#800080"
ALINK="#ff0000">
<FONT FACE="Arial">

<H1 ALIGN="center">Logan - 24 Hour Table</H1>
</FONT><HR>

<CENTER><PRE><B>
```

Date	Time	Wind Speed (mph)	Wind Dir (deg)	Air Temp (F)	Rel Hum (%)	Total Precip (in)
3 9	1600	1.5	255	39.0	46	0.0
3 9	1700	3.4	266	36.5	64	0.0
3 9	1800	3.0	289	35.3	69	0.0
3 9	1900	2.5	316	32.9	81	0.0
3 9	2000	1.8	2	30.9	87	0.0
3 9	2100	2.6	94	28.8	88	0.0
3 9	2200	3.7	170	26.4	90	0.0
3 9	2300	4.4	177	27.6	77	0.0
3 9	2400	4.1	182	27.4	83	0.0
3 10	100	3.2	183	25.5	86	0.0
3 10	200	3.0	303	24.5	86	0.0
3 10	300	0.9	121	24.3	87	0.0
3 10	400	2.4	35	25.7	87	0.0
3 10	500	1.8	334	26.5	84	0.0
3 10	600	2.6	13	27.3	87	0.0
3 10	700	2.7	19	28.4	82	0.0

```
</B>
```

```
3  10    800   4.4     45   29.8   75    0.0
3  10    900   6.2      9   32.1   73    0.0
3  10   1000   9.8    352   33.8   67    0.0
3  10   1100   7.9      6   35.8   64    0.0
3  10   1200   5.4     21   38.1   58    0.0
3  10   1300   6.6      6   40.6   56    0.0
3  10   1400   8.7    354   41.0   64    0.0
3  10   1500   6.6      6   42.5   55    0.0
3  10   1600   4.9     12   43.4   53    0.0

</PRE></CENTER>

<FONT FACE="Arial">
<HR>

<H3 ALIGN="center"><A HREF="csiweath.html#lc">Back to
Weather Station's Page</A></H3>

<CENTER><P>Copyright &#169 1998 Campbell Scientific,
Inc.</P></CENTER>
<HR>
</FONT>
</BODY>
</HTML>
```


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