

Web Viewer Reports: Using the Data URI

FMUG

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Skills you should have

- Familiarity with the Web Viewer object
- HTML
- Scripting and calculations

What is the Web Viewer?

- A object introduced in v8.5 that can be added to layouts
- Calls the browser engine that is bundled with the FileMaker user's operating system:
 - Internet Explorer for Windows
 - Safari for Mac
- Allows user to access the URL that you specify from within your FileMaker database

The URI Naming Structure

- Uniform Resource Identifier
 - `<scheme name> : <hierarchical part> [?<query>] [#<fragment>]`
- Examples of schemes:
 - http
 - file
 - ftp
 - data
- URLs are a form of URI
 - Generally represent web site addresses
 - The terms are often used interchangeably

Data URLs

- Data URLs embed the code right in the URL itself, rather than pointing to an externally located file.
- Web URLs look like this:
 - <http://web.mit.edu>
 - For example, <http://web.mit.edu/ist/help/filemaker/fmug/pres/dude.html>
- Data URLs have this format:
 - **data:[<mediatype>][;base64],<data>**
 - You will most likely leave out the “;base64” part
 - base64 is typically used for URL obfuscation or encoding images
 - » often represents binary data
 - by default, the coding will be ascii plus encoded characters
 - For <mediatype>, you will most likely insert “text/html”
 - if you leave it out, it will default to text/plain (ascii)
 - Don’t forget the comma!
 - Example:
 - <data:text/html,<html>Dude!</html>>

Data URL Constraints

- Browser limitations for Data URI scheme
 - Works on Safari and Firefox
 - Does not work (yet) on Internet Explorer
 - But it does work with the Web Viewer in FileMaker v9 on Windows...
 - Apparently, FileMaker creates a temp file of the code and then points the Web Viewer object at it
(<http://www.mydatabasesupport.com/forums/filemaker/256931-web-object.html>)
- Code length limitation
 - Limited for browser rendering but not for Web Viewer

Displaying a Data URL

- Create your Web Viewer object and name it
- Under the Format menu, select Web Viewer Setup
 - In the Web Address field,
 - hardcode your URI, e.g., "data:text/html, <html>Dude!</html>"
 - or make it dynamic by grabbing data from a field
- Or script it:

```
# Set Variable [$data; Value:"<html> <body>" & Web_utilities::code & "</body> </html>"]  
# Set Web Viewer [Object Name: "dataviewer"; URL: "data:text/html," & $data]
```

How to Assemble a Web Page

- It's all in the script
 - Find your desired record set
 - Assemble your rows of data
 - Store a data table in a script variable
 - Be mindful of local vs. global variables
 - Wrap a template around the data table
 - Store the combined template and data table code in a variable
 - Insert the complete page variable contents into your Web Viewer object

Assembling the Data Rows

- Script snippet:
 - Go to Record [First]
 - Loop
 - Set Variable `$rows`; Value: `$rows & "<tr><td width=\"10%\">" & Contacts::First Name & "</td><td width=\"10%\">" & Contacts::Last Name & "</td><td width=\"30%\">" & Contacts::Title & "</td><td>" & Contacts::Email & "</td></tr>"`
 - Go to Record [Next; Exit after last]
 - End Loop

Wrap Template Around the Data

- Script step:
 - Set Variable `$$webpage`; Value:

```
"<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
  "http://www.w3.org/TR/html4/loose.dtd">
<html>"
```

```
/*calls CSS*/
```

```
& "<link rel="stylesheet" href="http://web.mit.edu/ist/styles/isstyles.css"
  type="text/css">"
```

```
/*inserts banner*/
```

```
& "<body>" & Web_utilities::banner;
```

```
& "<h4>DCAD Contact List</h4>
<table border="0" cellpadding="3" align=center width="100%">"
```

```
/*inserts data */
```

```
& $$rows
```

```
&"</table></body></html>"
```

Plug Code into Web Viewer

- Script steps:

✦ Go to Layout ["Web Viewer Examples" (Web_utilities)]

✦ Go to Object [Object Name: "dataviewer"]

✦ Set Web Viewer [Object Name: "dataviewer"; URL: "data:text/html," & \$\$webpage]

Finessing it

- Use CSS for styles, not deprecated tags or coding that is difficult to maintain
- Be a good scout and use valid code
 - Deprecated code may not work as browser engines evolve
 - Escape your quote marks
 - Add a doctype, and all standard tags like `<head>` and `<title>` if you are going to export your pages
 - Point to external files where possible for ease of maintenance, e.g., style sheets

Exporting your Viewer Contents

- Don't export as HTML
- Store the assembled page in a global field
- Export field contents
 - ✦ `Set Field [Web_utilities::page; $$webpage]`
 - ✦ `Export Field Contents [Web_utilities::page; "directory.html"]`

Why would you do this?

- Should you build html reports in FileMaker?
 - You can generate data-filled pages that match your web site look and feel
 - without having to manually edit the pages
 - without having to attach your database directly to the web
 - This may not be practical if your pages need to be updated frequently
 - Allows you to preview pages before uploading
 - But remember, you're only previewing on one platform and browser!
 - Check for expected behavior in other browsers
 - Check the code for end of line characters
 - If your page isn't rendering properly or using valid code, you should not export and upload it.

Creating a Bar Chart

- Doesn't require scripting
 - Just put it all in the Web Viewer object web address calculation
 - Example:
 - "data:text/html," &
 - Let(
 - [max = Max(STUDENT::z_frosh_total; STUDENT::z_soph_total; STUDENT::z_junior_total; STUDENT::z_senior_total);
 - height_1 = STUDENT::z_frosh_total / max;
 - height_2 = STUDENT::z_soph_total / max;
 - height_3 = STUDENT::z_junior_total / max;
 - height_4 = STUDENT::z_senior_total / max];
 -
 - "<html>
 - <style>div { background: blue; position: absolute; width: 15%; bottom: 0; float: left;}</style>
 - <body style=\"border: 0; margin: 0;\">
 - <div style=\"left: 5; height: " & (height_1 * 100) & "%\"></div>
 - <div style=\"left: 26%; height: " & (height_2 * 100) & "%\"></div>
 - <div style=\"left: 53%; height: " & (height_3 * 100) & "%\"></div>
 - <div style=\"left: 79%; height: " & (height_4 * 100) & "%\"></div>
 - </body>
 - </html>"
 -)

Resources

- Web Viewer presentation
 - <http://web.mit.edu/ist/help/filemaker/fmug/pres/WebViewer.pdf>
- RFC 2397
 - <http://www.faqs.org/rfcs/rfc2397.html>
- URI Scheme
 - http://en.wikipedia.org/wiki/Data:_URI_scheme
- FileMaker Training Series
 - <http://www.filemaker.com/support/training/fts.html>
- Charting Example from Six Fried Rice
 - <http://sixfriedrice.com/wp/filemaker-9-tip9-web-viewers-without-the-web/>