xmCHART 4 Important Notes

IMAGE QUALITY

To get good looking drawings for the screen make sure that FileMaker does not rescale the image created in xmCHART. So, most important, the size of the FileMaker container field must be identical with the width and height in xmCHART's `OpenDrawing()` function. In File-Maker 13 and higher take the padding values (in Layout Mode: Inspector > Appearance > Advanced Graphic > Padding) properly into account when calculating the drawing size or set padding to 0. Set the container format (in Layout Mode: Inspector > Data > Data Formating > Format) to "Crop to frame".

The image resolution can be controlled with the 3rd argument "resolution" in the `OpenDrawing()` function. If there is no 3rd argument or resolution=screen, the drawing will be created as a PNG bitmap with a resolution optimized for screen display. That means Apple's Retina or Windows HighDPI display resolutions, but also the current Zoom Level set in FileMaker will be properly taken into account.

Examples:
```
OpenDrawing(800;600)        /* PNG bitmap, optimized for screen display. */
OpenDrawing(800;600;screen) /* Same as OpenDrawing(800;600) */
OpenDrawing(800;600;0)      /* Same as OpenDrawing(800;600) */
OpenDrawing(800;600;print)  /* PNG bitmap, opt. for printing (300 dpi) */
OpenDrawing(800;600;-1)     /* Same as OpenDrawing(800;600;print) */
OpenDrawing(800;600;3.5)    /* High resolution PNG bitmap: 2800x2100 */
```

xmCHART supports image resolution factors from 0.25 (very coarse and pixelated) to 4 (high resolution). A high resolution bitmap, for example, `OpenDrawing(800;600;print)` is recommended for FileMaker script steps such as [Save Records As PDF] or [Export Field Contents] and all types of barcodes.

ENTERING TEXTS IN FILEMAKER'S "Specify Calculation" DIALOG BOX

It is important to note that double quotes should be escaped with a backslash (\").
For example:

```
xmCH_DrawChart(
"OpenDrawing(180;50)
   AddText(20;30;\"Company Universal Exports\")
 CloseDrawing()")
```

To place double quotes in a string of text, escape them twice, once for xmCHART (\") and again for FileMaker (\\\"). For example:

```
xmCH_DrawChart(
"OpenDrawing(180;50)
   AddText(20;30;\"Company \\\"Universal Exports\\\"\")
 CloseDrawing()")
```

COMMENTS IN FILEMAKER'S "Specify Calculation" DIALOG BOX

In FileMaker's "Specify Calculation" dialog box "//" comments are not automatically limited by the end of the line, making the single-line comments extend to the end of the script! Instead, use multi-line comments /* ... */ or add a paragraph sign "¶" at the end of "//" comments.

FILE PATH SYNTAX

In xmCHART 4 the file path syntax becomes more compliant with Unix standards. A leading slash means in xmCHART 4 an absolute path (full path), in opposite to xmCHART 3 where a file path with a leading slash defines a path relative to the current database's location.

● Absolute File Paths

macOS:
Syntax variant 1: /users/user_name/folder_path/file_name
Syntax variant 2: /Volumes/volume/folder_path/file_name

Examples:
```
SaveAsPNGFile("/users/john/desktop/graph123.png")
SaveAsPNGFile("/Volumes/Macintosh HD/users/john/desktop/graph123.png")
SaveAsPNGFile("/Volumes/Backup HD/graphs/graph123.png")
SaveAsPNGFile("/Volumes/Macintosh HD/Users/Shared/graph123.png")
SaveAsPDFFile("/Volumes/Macintosh HD/Library/FileMaker Server/Data/Documents/
graph123.pdf")
```

Windows:
Syntax: `/drive:/folder_path/file_name`
A slash in front of the drive letter is optional and can be omitted.

Examples:
```
SaveAsPNGFile("/C:/users/john/desktop/graph123.png")
SaveAsPNGFile("C:/users/john/desktop/graph123.png")
SaveAsPNGFile("/Z:/graphs/graph123.png")
SaveAsPNGFile("Z:/graphs/graph123.png")
SaveAsPNGFile("/C:/Users/Public/Documents/graph123.png")
SaveAsPDFFile("/C:/Program Files/FileMaker/FileMaker Server/Data/Documents/
graph123.pdf")
```

● Relative File Paths

Path relative to current directory
Syntax: `./folder_path/file_name`
The file path is relative to the current database's location.
"./" in front of the path is optional and can be omitted.

Examples:
```
SaveAsPNGFile("graph123.png")
SaveAsPNGFile("./graph123.png") /* Same as line above. */
SaveAsPNGFile("sub_directory/graph123.png")
SaveAsPNGFile("./sub_directory/graph123.png") /* Same as line above. */
SaveAsPNGFile("/sub_directory/graph123.png")  /* Error: xmCHART 3 syntax. */
```

Path relative to parent directories
Syntax: `../folder_path/file_name`

Examples:
```
SaveAsPNGFile("../graph123.png")
SaveAsPNGFile("../sub_directory/graph123.png")
SaveAsPNGFile("../../graph123.png")
SaveAsPNGFile("../../sub_directory/graph123.png")
SaveAsPNGFile("../../../../sub_directory/graph123.png")
```

Path relative to user's home directory
Syntax: `~/folder_path/file_name`

Example:
```
SaveAsPNGFile("~/graphs/graph123.png")
```
Same as:
```
SaveAsPNGFile("/users/john/graphs/graph123.png")    /* macOS */
SaveAsPNGFile("/C:/users/john/graphs/graph123.png") /* Windows */
```

● FileMaker Server

Please note that relative file paths are not supported in FileMaker Server. Instead, use abso-lute file paths. For example:

macOS:
```
SaveAsJPGFile("/Volumes/Macintosh HD/Users/Shared/plot_01.jpg")
SaveAsSVGFile("/Volumes/Macintosh HD/Library/FileMaker Server/Data/Documents/
plot_01.svg")
```

Windows:
```
SaveAsJPGFile("/C:/Users/Public/Documents/plot_01.jpg")
SaveAsSVGFile("/C:/Program Files/FileMaker/FileMaker Server/Data/Documents/
plot_01.svg")
```

EXTERNAL FUNCTION xmCH_GetMouse(resultFormat)

Argument "resultFormat" can be any text string with %1 and %2 as placeholders for the x and y coordinates. `xmCH_GetMouse()` returns the current mouse coordinates measured in pixels with the origin in the top-left corner of the FileMaker layout area. The returned coor-dinates do not include any horizontal or vertical scroll offsets.

Examples:
```
xmCH_GetMouse("")           /* Returns an empty string. */
xmCH_GetMouse("%1")         /* Returns, for example: "241" */
xmCH_GetMouse("%1 %2")      /* Returns, for example: "241 188" */
xmCH_GetMouse("y:%2")       /* Returns, for example: "y:188" */
xmCH_GetMouse("(x=%1 y=%2)") /* Returns, for example: "(x=241 y=188)" */
```

DEPRECATIONS

The import of images from the clipboard has been deprecated. Instead, import images from a file or directly from FileMaker by using a base64 encoded PNG image stream.

The export of images to the clipboard has been deprecated. Instead, use FileMaker's built-in [Copy] script step.

The built-in gradients have been deprecated in favor of the much more flexible color gradi-ents.

```
OpenDrawing(width;height;format;antialiasing;targetName)
```
The arguments "antialiasing" and "targetName" are ignored in xmCHART 4. "targetName" has been replaced by the 2nd parameter "fileName" of the external function `xmCH_Draw-Chart()`.

The last 3 arguments "location", "adjustment" and "isProportional" in `BackgroundPict()`, `ChartBackgroundPict()` and `AddPicture()` are ignored.

The fileFlag constant "throwError" has been deprecated in all "`SaveAs...`" functions. Furthermore, the 3rd argument "creatorType" is ignored in all "`SaveAs...`" functions.

The last 2 arguments "creator" and "keywords" in function `SaveAsPDFFile()` are ignored in xmCHART 4.

The argument "shadowPattern" has been removed in function `ShadowStyle()` and in all background functions.

The schemeIndex constant "none" has been deprecated in all color scheme functions. Instead, use the new constant "classic" or simply set the argument "schemeIndex" to 0 for future projects.

The obsolete macOS PICT format has been removed in xmCHART 4. As a consequence, the output function `SaveAsPICTFile()` is ignored.

Thanks for reading!