Membership Database “Printed Directory”

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The main way the congregation interacts with the membership data is through the “printed” directory. (I include the quote marks because the document is typically passed around as a PDF these days.)

It may be in the new system that a directory document will be less important as everyone will have an iOS or Android app through which they will get the data.[[1]](#footnote-1) Or perhaps a web front end. In any case, the logic used to cull the publicly available data and present it is important, and is documented here. Before describing that logic, I’ll explain briefly how the directory is created today.

# How the directory is created today

Today’s “printed” directory is created in three steps:

1. The proper data are culled and placed into an in-memory XML document.
2. That document tree is transformed into XML formatting objects[[2]](#footnote-2) via an XSLT translation, creating a new in-memory XML document.
3. The formatting objects document is rendered into PDF via a Formatting Objects Processor, or FOP.[[3]](#footnote-3)

To quote Wikipedia on XSL-FO:

The general idea behind XSL-FO's use is that the user writes a document, not in FO, but in an XML language. … Then, the user obtains an [XSLT](https://en.wikipedia.org/wiki/XSLT) transform, either by writing one themselves or by finding one for the document type in question. This XSLT transform converts the XML into XSL-FO.

Once the XSL-FO document is generated, it is then passed to an application called an FO processor. FO processors convert the XSL-FO document into something that is readable, printable or both. The most common output of XSL-FO is a [PDF](https://en.wikipedia.org/wiki/PDF) file…

This means that there are three pieces of software involved:

1. The code that extracts the data from the database and creates an initial XML document
2. The XSLT transform (itself an XML document that would not change)
3. The FOP

Piece 1 would be completely different in the new system, but would embody the business rules I’ll lay out in the next section. Piece 2 could be re-used intact. Piece 3 is open-source from Apache. Conclusion: you could continue to create today’s “printed” directory in the new system.

# Culling the data for the directory

Actually, the Java code for culling the data (com.tamelea.pm.DirectoryExporterPDF) is straightforward. There is no point to creating pseudocode for it.

1. If we do a mobile or web app for the members, we *must* include an easy way for folks to send updates to the clerk, i.e., updates of their data. Or all the updates must be “moderated” or “curated” by the clerk. [↑](#footnote-ref-1)
2. To read about XSL-FO, see <https://en.wikipedia.org/wiki/XSL_Formatting_Objects>. The present software uses version 0.94 of the specification. [↑](#footnote-ref-2)
3. We use the Apache FOP; see https://en.wikipedia.org/wiki/Formatting\_Objects\_Processor. [↑](#footnote-ref-3)