u3a Computing Group

Alan Hopwood, 1 June 2023

Presentation
Using PDF files

So simple on the surface
So much going on underneath

Presentation Agenda

Using PDF Files

- What is PDF?

- The Technical Detail

- What are PDF files used for?

- Creating a PDF document & a PDF form

- Using PDFs "normally"

- A little diversion - copy & paste

- PDF Tools and what they can do

- A selection of PDF tools

What is a PDF?

Using PDF Files

- PDF - Portable Document Format - a file format to present documents, including text formatting and images, independent of application, hardware, and operating systems.

- Each PDF file encapsulates a complete description of a fixed-layout flat document, including the text, fonts, vector graphics, raster images and other information needed to display it.

  - Developed by Adobe Systems led by Adobe co-founder John Warnock in early 1990s

  - At the time, Mac, Windows, UNIX, and MS DOS all had their own file formats. The only certain way of distributing a consistent document was to print it.

  - Adobe made the proprietary PDF spec available free of charge in 1993.

  - Released as an open standard in 2008 - published as ISO 32000-1:2008

  - Adobe published a Public Patent License to ISO 32000-1 granting royalty-free rights for all patents owned by Adobe necessary to make, use, sell, and distribute PDF-compliant implementations.
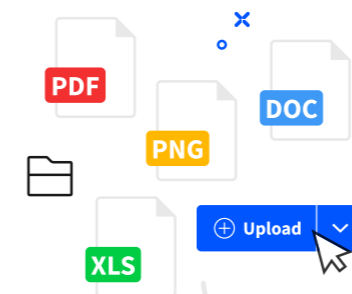
What is a PDF?

Using PDF Files

- PDF documents can contain text and images of any appearance.

Welcome to Smallpdf

Ready to take document management to the next level?

1 Digital Documents—All In One Place

With the new Smallpdf experience, you can freely upload, organize, and share digital documents. When you enable the 'Storage' option, we'll also store all processed files here.

2 Enhance Documents in One Click

When you right-click on a file, we'll present you with an array of options to convert, compress, or modify it.
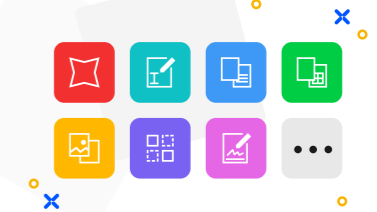
3 Access Files Anytime, Anywhere

You can access files stored on Smallpdf from your computer, phone, or tablet. We'll also sync files from the Smallpdf Mobile App to our online portal

4 Collaborate With Others

Forget mundane administrative tasks. With Smallpdf, you can request e-signatures, send large files, or even enable the Smallpdf G Suite App for your entire organization.

Sign here

pdfy@small.com

The Technical Detail

Using PDF Files

- A PDF file is often a combination of vector graphics, text, and bitmap graphics.

- The basic types of content in a PDF are:
  - Typeset text stored as content streams (i.e., not plain text);
  - Vector graphics for illustrations and designs that consist of shapes and lines;
  - Raster graphics for photographs and other types of images
  - Multimedia objects in the document.
  - A PDF document can also support links (inside document or web page), forms, JavaScript, or any other types of embedded contents.

- PDF combines three technologies:
  - An equivalent subset of the PostScript page description programming language but in declarative form, for generating the layout and graphics.
  - A font-embedding/replacement system to allow fonts to travel with the documents.
  - A structured storage system to bundle these elements and any associated content into a single file, with data compression where appropriate.

The Technical Detail
Using PDF Files

- This is the PDF internals for a document showing "Hello World"
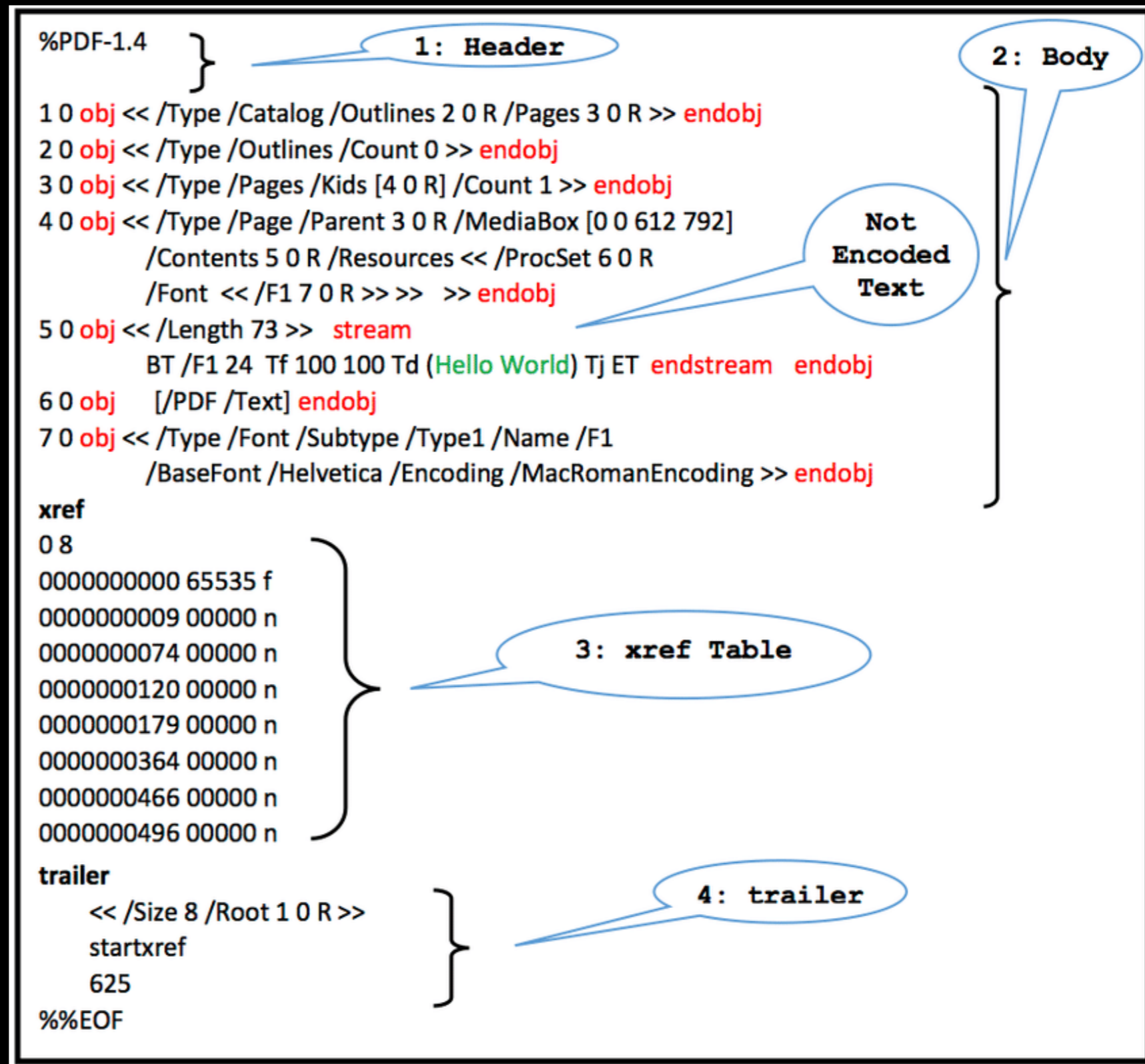
What are PDFs used for

Using PDF Files

PDFs are used where we might have used paper:

- To share a document

  - Without needing the recipients to have a specific application.

  - Knowing that everyone will see the same content in the same format regardless of their device or reader.

  - With the ability to lock the document so that anyone receiving it second hand would receive the original document.

- To share a form that can be completed (and signed) without needing to be printed.

- To send a document that is encrypted and requires a password to be viewed.

- As a common standard format for brochures, manuals, documents to be sent to printers….

Creating a PDF document

Using PDF Files

- Export document from the document creation/editing application:

  - Microsoft Word, Excel, PowerPoint, Publisher all provide an Export to PDF/XPS option (under File). Make sure you select the PDF file type! XPS is Microsoft's own equivalent

  - Apple Pages, Numbers, Keynote all provide an Export to PDF option. Options for quality, password +.

  - LibreOffice Writer, Calc, Impress all provide export to PDF

- I don't know of a modern document app that doesn't have the capability of exporting to PDF!

Creating a PDF document

Using PDF Files

- Use a PDF Converter:

  - input a document file: docx, rtf, odt, xls, ods, html, ppt, odp - depending on the capability of the tool

  - Usually select options for file size/quality, locking, encryption.

  - Output a pdf file

- Many PDF converters available - on line or applications

Creating a PDF document
Using PDF Files

- Use a document scanner:

  - Most copier/scanners will offer a choice of output - jpg or PDF

  - The content of a PDF from a scanner will be raster graphics - an image of the text - rather than the text itself.
    (unless OCR is used)

    - The disadvantage is that text in the PDF document cannot be selected or copied.

    - The advantages that the document cannot be altered!

Creating a PDF Form
Using PDF Files

- A PDF form is the electronic equivalent of a paper form.

- It has fields (boxes) that anyone with a PDF reader can fill out by typing or writing. Documents can be signed.

- Most standard document tools (Word, Excel, Pages, Numbers) are *not* able to create PDF forms.

- LibreOffice does have this capability - produce a form in Writer and export to PDF.

- Use a PDF converter tool to create a form from a document created in Word or other application.

PDF security

Using PDF Files

Although PDF files are intended to be as published. They can be altered.

Unless you receive a PDF document from a trusted source, you cannot be sure of contents

Unless…

- PDF Permissions can be set:
    - Can prevent any changes to the document
    - Can prevent document from being copied or printed

    (but there are work-arounds for both of these)
- PDFs can be encrypted:
    - All content can be encrypted
    - Need a password to open the file

Using PDFs "Normally"

Using PDF Files

- Viewing:

  - Every device should have a PDF viewer - double click on the file.

  - Web browsers such as Google Chrome, Firefox, Safari, Edge all have PDF viewers built in.

- Annotation. Adding comments, highlighting etc. on top of the document:

  - Many PDF viewers will allow annotation. (I checked Safari, Edge, Chrome) - search for annotation tool.

  - This does not change the underlying document - but can be saved as changed or new PDF file.

- Completing a PDF form:

  - Standard PDF viewer should allow you to fill in a document created as a PDF form

  - Adds your text in the form's fields.

- Copying content from a PDF document:

  - Depends on format of internal content

  - A scanned document will not allow a section to copy (unless using OCR)

  - Formats may alter - particularly tables

How does copy and past work?

A diversion - Copy and Paste

An example of complexity totally hidden from the user!

- The challenge:
  - We copy all sorts of different things: text, numbers, images, graphical objects, text formats, table formats.
  - From browsers, MS Excel, Apple Pages - almost any application - including PDF viewers.
  - We paste them into an entirely different application from a different supplier.
  - and it (generally) works

How does copy and past work?

A diversion - Copy and Paste
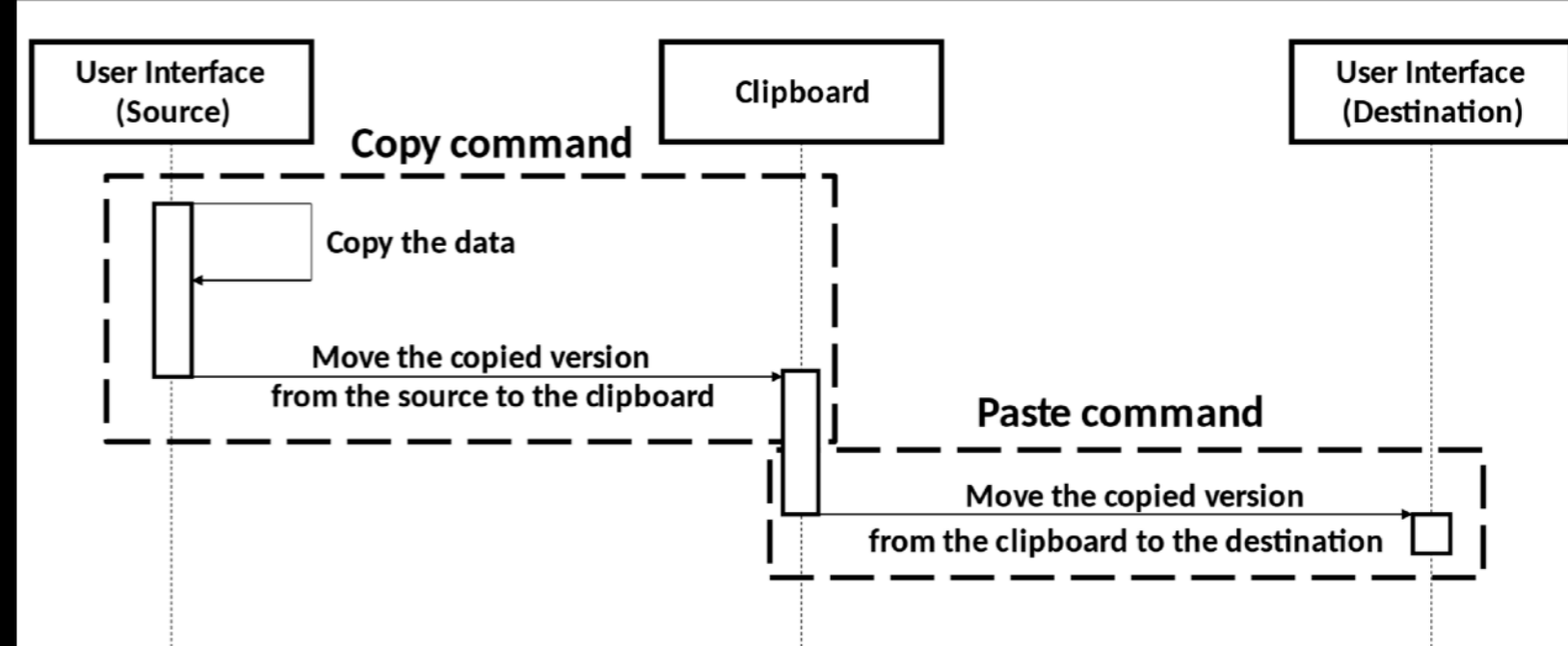
- The Operating System provides the data exchange protocol
- Windows, Linux, macOS, Linux, Android, iOS work in slightly different ways with the same results:
- MS Windows
  - holds one item in multiple available formats.
  - types of format:
    - standard formats - defined and provided by Microsoft e.g. bitmap, Unicode text.
    - registered formats - an application provider has defined a format and registered it with MicroSoft
    - private formats - allowing an application to use a format it provides

PDF Tools - Capability

Using PDF Files

Tool functionality:

- View and Read (much better than reading a document in a word processing app)

- Review and annotate

- Redact

- Create, convert and export PDFs

- Edit the content

- Set security

PDF Tools - Annotation

Using PDF Files

- Annotation is the most common need for changing a PDF

- Most PDF viewers can annotate

- ***Redact with care.***

  - Not that covering text with a black black box does not prevent text from being extracted

  - Some tools have redaction functionality which show the redaction and remove the text.

- Some Browsers have annotation tools built in - Safari, Edge

- And there are lots of free annotation tools:

  - UPDF

  - Adobe Acrobat Reader

  - PDF Annotator (Windows only)

PDF Annotation
Using PDF Files

- excellent tool for reviewing documents

Welcome to the University of the Third Age (U3A) an international organisation of learning for people who are in their third stage of life. Your membership card to the Dorchester U3A group is enclosed. We hope that you will enjoy your membership and if possible are able to contribute something to our organisation. This note explains something about how we operate.

The Dorchester & District U3A is a financially independent charity with the objects of the education of middle aged and older people not in full time employment. Our activities are all organised voluntarily by our members who do not receive any remuneration for their work.

Full information on all our activities can be found on our web site www.dorchesteru3a.org.uk and in our newsletter produced at the beginning of every term. If you do not have a copy of our newsletter please get in touch with our Membership Secretary details below.

We have a general meeting on the first Monday of the month with a speaker, display and announcements about the coming month's activities. This costs £1 which includes a cup of tea/coffee and biscuit. There are over 40 groups covering particular subjects or activities. Each Group is organised by a group leader. If you wish to attend a group for the first time it is important and courteous to contact the group leader in advance to ensure that places are available, your knowledge is appropriate for the group and to confirm arrangements for the meeting. Similarly let the Group Leader know if for any reason you wish to stop attending the group.

There is a charge normally of 50p for each attendance at every group and everyone must record their attendance. Group leaders are asked to verify that attendees are members of the U3A by sight of their membership cards so please remember to bring yours and correct change for the attendance fee. Please remember that a group leader has to set up the room and any equipment, collect the fees, control the meeting often delivering a difficult presentation and then clear up afterwards so please help them as much as possible. In particular remember that if you start talking to them afterwards without helping they still have to clear up in time for the next group or meeting. One other important thing: do NOT unplug any projection equipment unless specifically asked as the fans must be kept running to cool down or very expensive damage may result.

PDF Tools - Capability (PDF Gear)
Using PDF Files

- This is the set of most used tools provided by PDF Gear.

Compress
Reduce PDF file size by 90% or without quality loss

Merge
Combine multiple PDF documents into one

Edit
30+ tools to edit, merge, crop, highlight, etc. PDF

Convert
Convert between PDF, Word, Excel, PPT, JPG, etc.

Split
Separate PDF pages into multiple PDF files

Read
Read and view PDF files and add bookmarks

Sign
Electronically sign PDF and fill out forms

OCR
Extract text information from image-based PDFs

Organize
Insert, delete, rearrange, and rotate PDF pages

Print
Print images and documents to PDF

Annotate
Add customizable comments and annotations

Highlight
Highlight text in PDF and document areas

PDF Form
Create and fill out fillable PDF forms

Batch Workflow
Convert, compress, and split multiple PDFs in bulk

PDF Tools

Using PDF Files

- There are lots of PDF apps available online and for every device and operating system.

- This table shows examples.

Adobe Acrobat Pro	available for most operating systems	£200
PDF Candy	Windows/online	Free version
PDF Gear	Windows/Mac	Free version
Apple Preview	Mac	Built in
iAnnotate	iPad	£10

Thank You