PDF in Xojo

Christian Schmitz
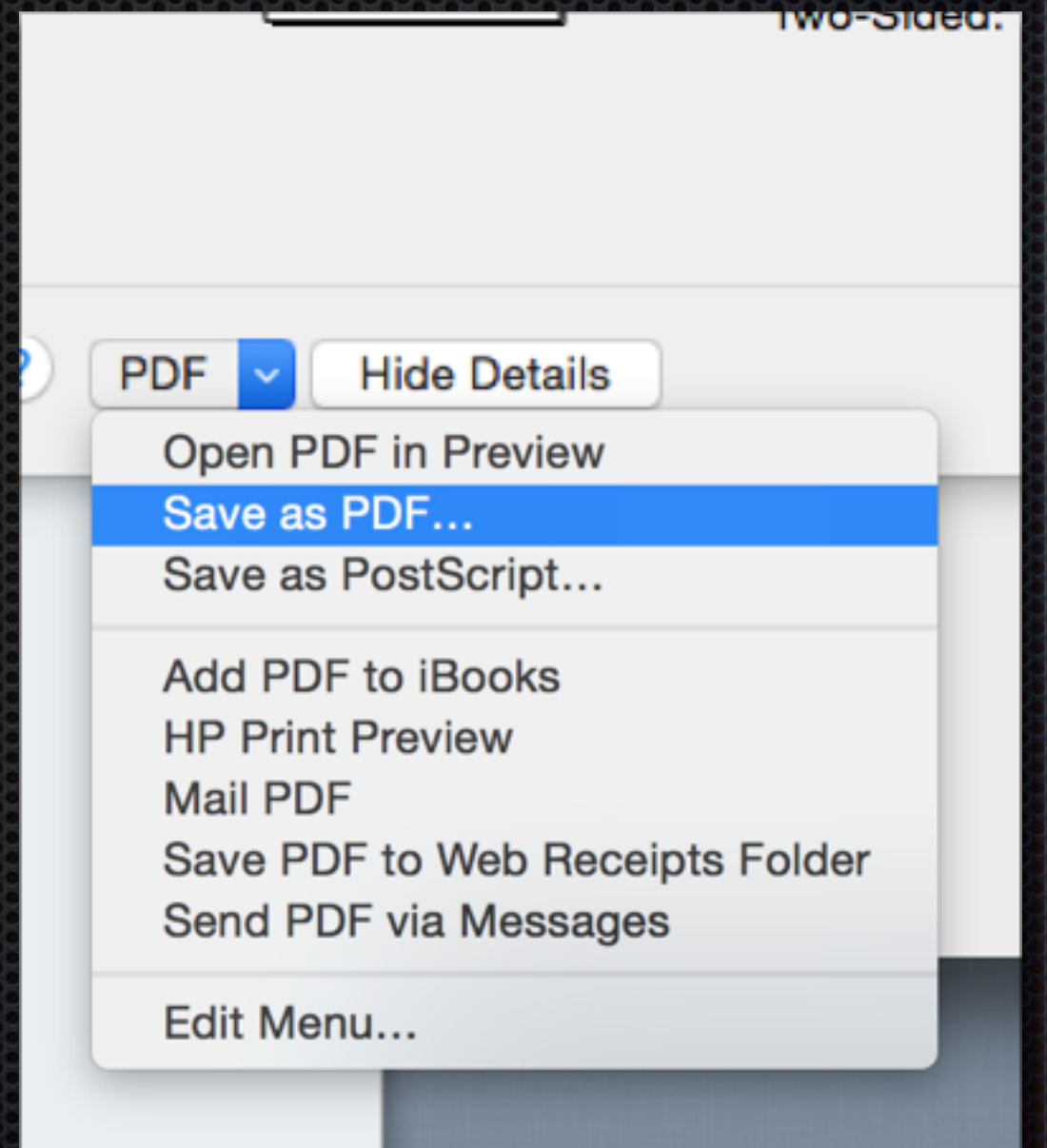CEO
Monkeybread Software

Xojo PDF Support

- No built-in PDF support.

  - Feedback case 10701

- Operation System PDF Features

- Command line tools

- Declares

- Plugins

OS PDF Features

Print to PDF built into Print Dialog

OS PDF Support

- Mac OS X & Linux:

  - Print to PDF built-in

- Windows

  - User installs PDF Printer

  - Adobe Acrobat installs PDF Printer

Command line tools

- OS X has Automator Scripts

  - 16 PDF related actions

- Use ghostscript (GPL/Commercial)

  - ps2pdf test.ps test.pdf

- cupsfilter

  - cupsfilter test.jpg > test.pdf

Command line tools

- wkhtmltopdf

  - Render HTML to PDF pages

  - Using QT WebKit.

  - wkhtmltopdf http://google.com google.pdf

  - Used in project for Invoice HTML to PDF

Declares

- You can use Declares yourself to access Apple's frameworks.

- PDFKit: High level PDF framework

- CoreGraphics: Low level drawing framework

- e.g. in MacOSLib

PDF Plugins from MBS

- CoreGraphics classes

- PDFKit classes

- HTMLViewer PDF functions

- Cocoa PDF functions

- DynaPDF Plugin

CoreGraphics

- Framework from Apple for OS X and iOS

- Create new PDF files

- Open existing PDF files

- Draw a page from a PDF

- Draw into new PDF pages

Create PDF

- CGPDFContextMBS class

  - Normal Context for drawing

  - PDF Functions like BeginPage/EndPage

- Create via CGNewPDFDocumentMBS

  - Write to file or CGDataConsumerMBS

  - Supports some metadata and some encryption

Create PDF

```
// create pdf
dim file as FolderItem =
SpecialFolder.Desktop.Child("test.pdf")
dim r as new CGRectMBS(0,0,500,500)
dim c as CGContextMBS = file.NewCGPDFDocumentMBS(r,
     "My Title", "My Author ", "My Creator")
c.BeginPage r // create page
c.SetRGBFillColor(1.0, 0.0, 0.0, 1.0) // draw something
c.FillRect CGMakeRectMBS(100,100,100,100)
c.EndPage  // close page
c = nil     // flush and show in PDF viewer
file.Launch
```

Read PDF content

- CGPDFDocumentMBS class

  - Open from File, URL, data provider, String or Memoryblock containing PDF data

  - Query page count, page sizes, rotation

  - Query permissions like printing allowed

- CGPDFPageMBS for individual pages

PDF Features

- Create new PDF

- Draw page into other CGContext

  - e.g. draw in new PDF

- Draw page into Xojo graphics objects

  - DrawCGPDFDocumentMBS
    (pdf as CGPDFDocumentMBS, r as CGRectMBS, page
    as integer)

- Merge & Split pages

HTMLViewer

- WebKit on OS X offers PDF functions

- Make PDF from current visible content in PDF

- May preserve links

- WebPreferencesMBS.shouldPrintBackgrounds

HTMLViewer

- RenderPDFMBS as Memoryblock

  - Current view as PDF data

HTMLViewer

- RenderDocumentToPDFMBS as Memoryblock

  - Whole document as one big PDF

HTMLViewer

- PrintToPDFFileMBS

  - print to file with page breaks

  - Custom margins possible

Cocoa PDF on OS X

- NSPrintOperationMBS class

  - Print to printer or PDF file

  - shows print panel on/off

  - shows progress panel on/off

- printOperationWithView or PDFOperationWithView

  - with NSView or HTMLViewer

NSPrintInfo

- Options for printing

- SetSaveDestination(file as folderitem) for Print to PDF

- Margins

- Orientation

- Job Title

- Paper name and size

OpenPrinter

```
// print to PDF in Xojo Cocoa app

// change print info to go to
dim s as NSPrintInfoMBS = NSPrintInfoMBS.sharedPrintInfo
dim d as MemoryBlock = s.data // save old
s.SetSaveDestination SpecialFolder.Desktop.Child("test.pdf")

// now print something
dim g as Graphics = OpenPrinter
if g<>Nil then
  g.DrawString "Hello World PDF", 20, 20
end if

s.data = d // restore original settings
```

PDFKit

- Frameworks from Apple

- Classes to create, read and edit PDFs

- Including annotations

- Controls for displaying PDF

- Not supported for Windows/Linux

PDFKit Controls

- PDFViewControlMBS / PDFViewMBS

  - zoom, scroll and navigate pages

- PDFThumbnailViewControlMBS / PDFThumbnailViewMBS

  - Pages list like in Preview application

PDF Document

- Open PDF with PDFDocumentMBS

- Query pages, annotations, permissions, metadata

- Insert/Delete pages

- Find/Extract Text

PDF Page

- PDFPageMBS class

- Get Text & Annotations

- Render page to picture

- Add annotations

- Draw into NSGraphicsMBS

Custom PDF Page

- Empty page or self drawn content:

  - dim p as new PDFPageMBS

  - set boundsForBox with kPDFDisplayBoxMediaBox

  - Optionally draw content with drawRect event.

- PDF page with image

  - Constructor(image as NSImageMBS)

Print

- PDF Document can be printed

- PrintOperation(PrintInfo as variant, AutoRotate as boolean = true, scalingMode as integer = 0) as variant

- Provides NSPrintOperationMBS object

- Print PDF with/without dialogs

- Select printer in code via NSPrinterMBS class.

DynaPDF

- Crossplatform PDF Engine

- Mac OS X, Windows & Linux

- Plugin license useable in C/C++, Delphi, Visual Basic, PHP and other environments.

- Biggest PDF library available for Xojo

- Editions: Starter, Lite, Pro & Enterprise

DynaPDF Starter

- Entry level for writing PDFs

- Text formatting, multi-column text

- Vector graphics, line dash patterns, shadings, patterns

- Tables

- Font Subsetting

- Use standard PDF fonts, system fonts or own fonts

- Creation of Tagged PDF files

DynaPDF Starter

- File Attachments

- RGB, Gray, CMYK color spaces

- Add images

  - with alpha channel support

  - from multi page TIFF files

- Named Destinations

- Web links, File links, Page links, Bookmarks

DynaPDF Lite

- Import of PDF files

- Merge PDF Files

- 40 Bit RC4, 128 Bit RC4/AES, 256 Bit AES Encryption

- Create Interactive Forms

- Read form values and modify forms

- Creation of Layers (Optional Content)

DynaPDF Lite

- Creation of Portable Collections (PDF Packets)

- Digital signatures (internal and external)

- EMF Conversion

- Creation of PDF/A and PDF/X files

- Output Intents (specifies the destination color space)

- Conformance check for PDF/A creation

DynaPDF Pro

- Rendering Engine

- Single Page Import of external PDF Pages

- Split PDF files

- Support for external CMaps

- Text Extraction, search and replace text

- Extraction images and vector graphics

- Flatten Interactive Forms (conversion to text and vector graphics)

DynaPDF Pro

- 16 Blend Modes, ability to set the overprint mode

- Soft masks, Transparency Groups

- 3D Annotations

- Additional color spaces CalGray, CalRGB, Indexed, ICCBased, Lab, Separation, DeviceN

- Convert inline color operators to gray

DynaPDF Enterprise

- Including source codes

  - for DynaPDF C/C++ library

- Static Library for C/C++ available

Create PDF Example

```
dim pdf as new MyDynapdfMBS
dim f as FolderItem = SpecialFolder.Desktop.Child("Create PDF.pdf")

call pdf.CreateNewPDF f

call pdf.SetPageCoords pdf.kpcTopDown
call pdf.Append

call pdf.SetFont "Times", pdf.kfsItalic, 40.0, true, pdf.kcp1252
call pdf.WriteFText pdf.ktaCenter, "My first Xojo PDF!"

call pdf.EndPage
call pdf.CloseFile
f.Launch
```

Create PDF Example

My first Xojo PDF!

Angle Text Example

```
call pdf.SetStrokeColor 0 // black

dim alpha as double = 0.0

call pdf.SetFont( "Arial", pdf.kfsNone, 20.0, true, pdf.kcp1252)
dim pageCenter as double = pdf.GetPageWidth / 2.0
dim y as double = -(20.0 + pdf.GetDescent) / 2.0 // Font size + descent

for i as integer = 0 to 11
    call pdf.SetFillColor( BitwiseOr(&h00C08080, alpha * 128))
    call pdf.WriteAngleText("Circular Text", alpha, pageCenter, 500, 24, y)
    alpha = alpha + 30.0
next
```

Angle Text Example

Formatted Text Example

```
dim text as string, height as double, TimesBoldHandle, TimesHandle as integer
// load fonts
TimesBoldHandle = pdf.SetFont("Times", pdf.kfsBold, 20.0, true, pdf.kcp1252)
TimesHandle = pdf.SetFont("Times", pdf.kfsItalic, 20.0, true, pdf.kcp1252)

text = "In Italic font: Left aligned text, this is left aligned text, this is " + _
        "left aligned text...\ju#\FC[255]This is justified text, this is " + _
        "justified text, this is justified text, this is justified text, this " + _
        "is justified text, this is justified text, this is justified text, " + _
        "this is justified text...\re#\FC[165536]This is right aligned text, " + _
        "this is right aligned text, this is right aligned text..." + _
        "\le#\FC[233512]Back to left aligned text, we go back to left " + _
        "aligned text... \FT["+str(TimesBoldHandle)+"]Now we use bold text."

call pdf.SetTextRect(50, 50, 150, -1)
call pdf.WriteFText(pdf.ktaLeft, text)
height = pdf.GetPageHeight - pdf.GetLastTextPosY - 50
call pdf.Rectangle( 50, 50, 150, height, pdf.kfmStroke)
```

Formatted Text Example

In Italic font: Left aligned text, this is left aligned text, this is left aligned text...

This is justified text, this is justified text, this is justified text, this is justified text, this is justified text, this is justified text, this is justified text, this is justified text, this is justified text...

This is right aligned text, this is right aligned text, this is right aligned text...

Back to left aligned text, we

Table Example

```
// create a table, 500 pixels wide and 100 pixel default cell height
// preallocate space for 3 rows and 3 columns
dim tbl as DynaPDFTableMBS = pdf.CreateTable(3, 3, 500.0, 100.0)

// set some options for all cells with -1 for column and -1 for row
call tbl.SetBorderWidth(-1, -1, 1.0, 1.0, 1.0, 1.0)

// set grid width to one pixel horizontally and vertically
call tbl.SetGridWidth( 1.0, 1.0)
```

Table Example

```
dim rowNum as integer
dim text as string = _
"The cell alignment can be set for text, images, and templates..."

rowNum = tbl.AddRow(-1.0)
call tbl.SetCellText rowNum, 0, pdf.ktaLeft,   tbl.kcoTop, text
call tbl.SetCellText rowNum, 1, pdf.ktaCenter, tbl.kcoTop, text
call tbl.SetCellText rowNum, 2, pdf.ktaRight,  tbl.kcoTop, text

rowNum = tbl.AddRow(-1.0)
call tbl.SetCellText rowNum, 0, pdf.ktaLeft,   tbl.kcoCenter, text
call tbl.SetCellText rowNum, 1, pdf.ktaCenter, tbl.kcoCenter, text
call tbl.SetCellText rowNum, 2, pdf.ktaRight,  tbl.kcoCenter, text

rowNum = tbl.AddRow(-1.0)
call tbl.SetCellText rowNum, 0, pdf.ktaLeft,   tbl.kcoBottom, text
call tbl.SetCellText rowNum, 1, pdf.ktaCenter, tbl.kcoBottom, text
call tbl.SetCellText rowNum, 2, pdf.ktaRight,  tbl.kcoBottom, text
```

Table Example

```
// Draw the table now
call pdf.Append
call tbl.DrawTable(50.0, 50.0, 742.0)

while tbl.HaveMore
    // Switch to new page
    call pdf.EndPage
    call pdf.Append
    call tbl.DrawTable(50.0, 50.0, 742.0)
wend
call pdf.EndPage
```

Table Alignment Example

Web Edition:
PDF for Download

```
dim pdf as new MyDynapdfMBS
call pdf.CreateNewPDF nil
// create PDF here
call pdf.CloseFile

CurrentFile = new WebFile
CurrentFile.Filename = "test.pdf"
CurrentFile.MIMEType = "application/pdf"
CurrentFile.Data = pdf.GetBuffer
CurrentFile.ForceDownload = true

ShowURL CurrentFile.url
```

Pricing

- DynaPDF

  - 149 € Starter

  - 449 € Lite

  - 799 € Pro

  - 1199 € Enterprise

- For people here at conference 10% discount!

There is one more thing...

- Working on printing PDF

- Without Adobe Reader

- Demo

- PDF Printing on Windows!

Q & A

- Questions?