Map Exports with Python

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Map Exports with Python

Saving you time and money…

Imagine if you will…

- County Road Maps
  - 77 Counties
  - 103 Map Sheets!!!
- City Road Maps
  - 598 Incorporated Places
  - 699 Map Sheets!!!
- **802 Road Map Sheets!!**
- Reroll All Maps for Live Data

Two Choices

Hand Export all Maps

~ 67 Working Hours

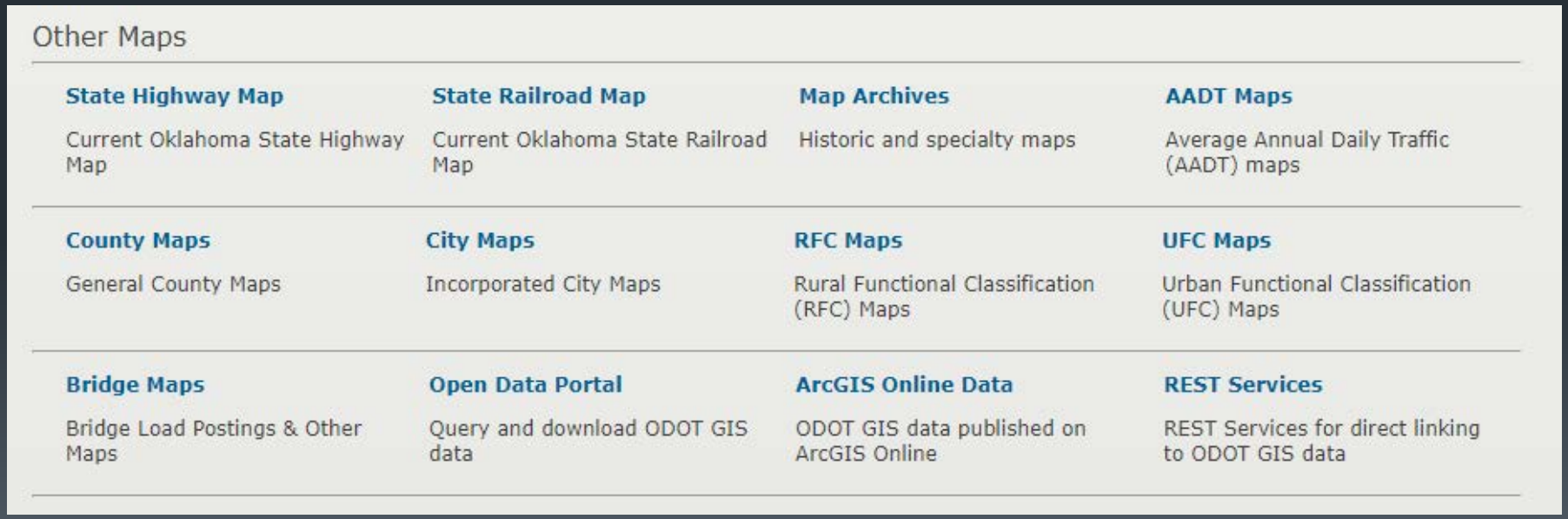
OR

Python Export all Maps

~ 8 Hours

Shameless Plug

- All Maps Available Online
- ODOT Map and Data Portal
  - http://okdot.maps.arcgis.com



arcpy.mapping.ExportTo???

- AI – Adobe Illustrator
- BMP – Windows Bitmap
- EMF – Enhanced Metafile
- EPS – Encapsulated Postscript
- GIF – Graphic Interchange Format
- JPEG – Joint Photographic Experts Group
- PDF – Portable Document Format
- PNG – Portable Network Graphics
- SVG – Scalable Vector Graphics
- TIFF – Tagged Image File Format

Start with the Basics

- Bare Bones – 3 Lines of Code

```
import arcpy
mxd = arcpy.mapping.MapDocument(r"mxd path")
arcpy.mapping.ExportToPDF(mxd, r"export path")
```

- Needs the Map Document Object
- Include “.pdf” in the exported file name

Parameters

- Required
  - Map Document
  - Export Path
- Optional
  - Data Frame
  - Export Width*
  - Export Height*
  - Resolution
  - Image Quality
  - Color Space
  - Compress Vectors
  - Image Compression
  - Picture Symbol
  - Convert Markers
  - Embed Fonts
  - Layers Attributes
  - Georef Info
  - JPEG Compression Quality

* Only used when specifying a Data Frame

Example

- 500 dpi Resolution
- CMYK Color Space
- No Layer Attributes

- `arcpy.mapping.ExportToPDF(mxd, r"export path", "", "", "", 500, "", "CMYK", "", "", "", "", "", "NONE")`

- `arcpy.mapping.ExportToPDF(mxd, r"export path", resolution = 500, colorspace = "CMYK", layers_attributes = "NONE")`

Folder Full of MXDs

- Export All MXDs in a Folder to PDF

```
import arcpy
import os

for root, dirs, files in os.walk(r"mxd folder path"):
  for f in files:
    mxd = arcpy.mapping.MapDocument(r"mxd folder path" + f)
    arcpy.mapping.ExportToPDF(mxd, r"export folder path" + f[:-4] + ".pdf")
```

Negative/Backwards Indexing

- `f[:-4]`

- `S o m e t h i n g . m x d`
- `0 1 2 3 4 -4 -3 -2 -1`

- `path + f + ".pdf" =` Something.mxd.pdf

- `path + f[:-4] + ".pdf" =` Something.pdf

Folder Full of Similar MXDs

- Export All MXDs in a Folder to PDF

```
import arcpy
import os

for root, dirs, files in os.walk(r"mxd folder path"):
  for f in files:
    mxd = arcpy.mapping.MapDocument(r"mxd folder path" + f)
    arcpy.mapping.ExportToPDF(mxd, r"export folder path" + f[:-4] + ".pdf")
```

OR

```
for f in os.listdir(r"mxd folder path")
 mxd = arcpy.mapping.MapDocument(r"mxd folder path" + f)
 arcpy.mapping.ExportToPDF(mxd, r"export folder path" + f[:-4] + ".pdf")
```

Folder Full of Different MXDs

- MXDs mixed together, Export Road Map MXDs
- All Road Map MXDs end with “_road.mxd”

```
import arcpy
import os

for root, dirs, files in os.walk(r”mxd folder path”):
 for f in files:
  if f.endswith(“_road.mxd”):
   mxd = arcpy.mapping.MapDocument(r”mxd folder path” + f)
   arcpy.mapping.ExportToPDF(mxd, r”export folder path” + f[:-4] + “.pdf”)
```

- Can use any Python String search options on file name
  - .endswith(), .startswith(), If statement with ‘in’ operator

Exporting and Merging PDFs

- Tools built in to Append or Modify PDFs
- 2 MXDs that need to result in 1 PDF
- Export the MXDs as normal
- Create and Open an Empty PDF Document
  - `PDF = arcpy.mapping.PDFDocumentCreate(r"PDF path")`
- Append PDFs exported from the MXDs
  - `PDF.appendPages(r"export1 path")` `*Note: Path and not PDF Object*`
  - `PDF.appendPages(r"export2 path")`
- Save and Close the PDF VERY IMPORTANT!!!
  - `PDF.saveAndClose()`

Merging Example

- Suggestion: Use a Working Folder

```
import arcpy
import os

for root, dirs, files in os.walk(r"mxd folder path"):
 for f in files:
  mxd = arcpy.mapping.MapDocument(r"mxd folder path" + f)
  arcpy.mapping.ExportToPDF(mxd, r"working folder path" + f[:-4] + ".pdf")

finalPDF = arcpy.mapping.PDFDocumentCreate(r"export folder path" + "name" + ".pdf")
for root, dirs, files in os.walk(r"working folder path"):
 for f in files:
  finalPDF.appendPages(r"working folder path")
finalPDF.saveAndClose()

for fileToDEL in os.listdir(r"working folder path")
 arcpy.Delete_management(r"working folder path" + fileToDEL)
                          OR
 os.remove(r"working folder path" + fileToDEL)
```

More Advanced Ideas

- Use raw_input() to take user input
  - Endless While Loop inside a Function
  - Add Names to List to Loop through later
  - Export Specific Map Names
  - Export All Maps of a Certain Theme
- Create a Function to Empty the Working Folder
  - Dynamically pull name from files in Working Folder
  - Merge and Export
  - Clean out the Folder
  - Call Function when needed
- Create a Single Script to Export MXDs located in different locations

- Questions?
- ¿Preguntas?
- Fragen?
- 有问题吗？
- Вопросов?
- 質問ですか？
- 질문이 있으십니까?

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