



FEU Institute of Technology

(INTEGRATIVE PROGRAMMING AND
TECHNOLOGIES)

EXERCISE

6

(Image to PDF)

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Data Performed	Date Submitted

Why do you need to convert image to pdf?

The size of the image file can vary widely depending on the resolution of the image but pdf takes up a lot less memory on computer hard disk than image.

The scalability of images also creates issues in printing. The print quality of image depends on the resolution, and the printout may have a different form factor than the on screen image.

JPG images do not scale down to small size well. This creates problem if the image contains icons, symbols or text.

The Portable Document Format (pdf) was created to present a document (formatted text and image combined together) independent of application software, hardware, and operating systems. The content in pdf format looks same everywhere with same styles and same quality. Pdf has become the industry standard as the best format for the display and printing of data. It has a wide range of capabilities, such as non-lossy compression, interactive elements, multiple layers usage, encryption, digital signatures and much more.

Feature of img2pdf Module

It provides lossless conversion of raster images to PDF. You should use **img2pdf** if your priorities are (in this order):

1. Always lossless: the image embedded in the PDF will always have the exact same color information for every pixel as the input
2. Small: if possible, the difference in filesize between the input image and the output PDF will only be the overhead of the PDF container itself
3. Fast: if possible, the input image is just pasted into the PDF document as-is without any CPU hungry re-encoding of the pixel data

Installing img2pdf

Install the required module `img2pdf` using the following command from the command line tool. Make sure you open the command line tool in administrator mode.

Once successfully installed you will get the success message as shown in the below image:

```
Microsoft Windows [Version 10.0.18362.418]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>pip install img2pdf
Collecting img2pdf
  Downloading https://files.pythonhosted.org/packages/e0/c6/7cd14232a1b10bf884c1
/img2pdf-0.3.3.tar.gz (80kB)
    |████████████████████████████████████████| 81kB 1.0MB/s
Requirement already satisfied: Pillow in c:\python-3.7.4\lib\site-packages (from
Building wheels for collected packages: img2pdf
  Building wheel for img2pdf (setup.py) ... done
  Created wheel for img2pdf: filename=img2pdf-0.3.3-cp37-none-any.whl size=32768
95c6b1343224ce3e207f6b92bb2cf265
  Stored in directory: C:\Users\SoumitraSarkar\AppData\Local\pip\Cache\wheels\98
Bad36873f8080b374
Successfully built img2pdf
Installing collected packages: img2pdf
Successfully installed img2pdf-0.3.3

C:\WINDOWS\system32>_
```

Converting Image to PDF

We will see here different ways of converting image to pdf file. We will convert both jpg or jpeg and png format images and write to pdf files. We will also convert multiple images to pdf files.

First you need to import `img2pdf` module.

here we will see how to convert jpeg and png images into pdf files from their file names.

```
with open("gentleman.pdf","wb") as f:
    f.write(img2pdf.convert('gentleman.png'))
```

The input image name is **gentleman.jpg** and the output file name is **gentleman.pdf**.

```
with open("sample.pdf","wb") as f:  
    f.write(img2pdf.convert('sample.jpg'))
```

Input file name is **sample.jpg** and output file is **sample.pdf**.

Next we will see how to convert multiple images and write to a single pdf file. You can use same types or different types of images to convert. For example, here I have used both jpg and png images to write to pdf file.

```
with open("output1.pdf","wb") as f:  
    f.write(img2pdf.convert("gentleman.png", "sample.jpg"))
```

In the above code two input images will be written to a single pdf file – **output1.pdf**. Another alternative approach to convert multiple images into pdf file is as follows:

```
with open("output2.pdf","wb") as f:  
    f.write(img2pdf.convert(["gentleman.png", "sample.jpg"]))
```

If you need to specify the paper size, for example, you want that your image should be written to A4 paper size then you can do in the following way:

```
a4inpt = (img2pdf.mm_to_pt(210),img2pdf.mm_to_pt(297))  
layout_fun = img2pdf.get_layout_fun(a4inpt)  
with open("paper_size.pdf","wb") as f:  
    f.write(img2pdf.convert('sample.jpg', layout_fun=layout_fun))
```

There is another library called ImageMagick which is used to convert image to pdf file but using ImageMagick library it takes twice memory of using img2pdf library.

There is also another library pdflaTeX but it unnecessarily increases the size of the output pdf file.

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 23:11:46) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> import img2pdf
>>> pic = open('C:\\Users\\Justine Guillermo\\Google Drive\\PROG\\PYTHON\\Notes\\windows.jfif','rb')
>>> pdf = open('C:\\Users\\Justine Guillermo\\Google Drive\\PROG\\PYTHON\\Notes\\windows.pdf','wb')
>>> pdf.write(img2pdf.convert(pic))
18487
>>> pic.close()
>>> pdf.close()
>>>
```

