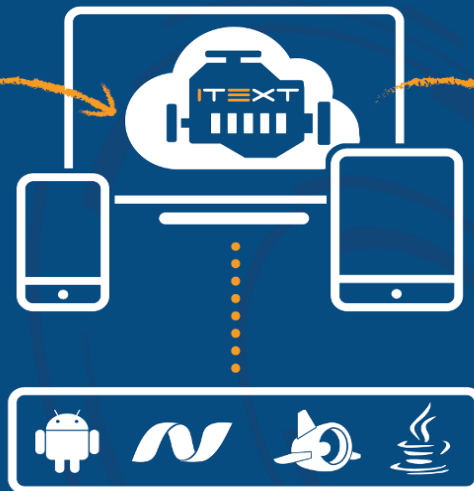




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PDF/A
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The Best iText Questions on **stackoverflow**

by **Bruno Lowagie**

The Best iText Questions on StackOverflow

iText Software

This book is for sale at http://leanpub.com/itext_so

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This is a [Leanpub](#) book. Leanpub empowers authors and publishers with the Lean Publishing process. [Lean Publishing](#) is the act of publishing an in-progress ebook using lightweight tools and many iterations to get reader feedback, pivot until you have the right book and build traction once you do.

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This book is written by a developer for developers.

It is dedicated to all the developers who take pride in writing good code.

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introduction

A couple of years ago, I decided to self-publish new books about iText, as opposed to working with a publisher as I did before for the “iText in Action” books. This led to a book about digital signatures that is [available for download](http://itextpdf.com/book/digitalsignatures)¹ on the iText site, and a book called “The ABC of PDF”² published on LeanPub. The goal of “The ABC of PDF” was to start with a book that looks at PDF at the lowest level, examining the syntax of a PDF file and a PDF page, and then to continue writing a series of books that explain how to use iText on a higher level, answering questions such as:

- How to create a PDF from scratch?
- How to create PDF from HTML?
- How to fill out PDF forms?
- How to parse a PDF file?
- ...

However, in spite of the fact that more than 15,000 people downloaded “The ABC of PDF”, it turned out that people really wanted me to write a different kind of book. I’ve received many comments through LeanPub from people who were disappointed that the ABC-book didn’t explain *how to use iText*. They expected a book with more practical examples, instead of examples that helps them understand the PDF specification. Some people even used the feedback form to ask me technical questions. Unfortunately, I was unable to answer these questions, because the people posting them didn’t realize that I received these questions anonymously. Even if I knew the answers, I didn’t know who or where to send them to.

All of this faced me with a dilemma: do I stop writing “The ABC of PDF” and start writing one of the other books that were planned? If so, which part of iText is most important to iText users? The plan for the ABC was to write a book of about 150 pages, but much to my surprise, I was only half way when I finished writing page 150. Didn’t I have other writing priorities?

Then suddenly I had an idea: why not write a book with questions and answers? Why not create a book entitled “The Best iText Questions on StackOverflow?”

Why StackOverflow?

I joined StackOverflow on August 24, 2012. Up until then, I had been answering many questions on the iText mailing-list. This mailing-list hosted on SourceForge used to be an important source

¹<http://itextpdf.com/book/digitalsignatures>

²https://leanpub.com/itext_pdfabc/

of inspiration. I composed two “iText in Action” books for Manning Publications, simply by reorganizing the many answers and examples written in answer to question into a real book.

However, at some point I got tired of the mailing-list. When I referred to an example in one of my books, people would accuse me for trying to “trick them into buying my book.” The mailing-list was also used by people spreading false allegations, such as “iText is no longer open source.” One could explain that these people were wrong, for instance by [providing a link to the source code](#)³, but there was no way to award people for providing good answers and to discourage people from posting bad answers. It felt as if the ungrateful were winning the debate.

Then I discovered [StackOverflow](#)⁴ where people build a reputation getting reputation points when they ask good questions and provide good answers, losing points when they post bad questions or bad answers. I took me 2 years and almost 2 months to become a *Trusted User*, a status that requires 20,000 reputation points. Since I registered on StackOverflow, I have posted answers to more than 1,000 questions. Looking back at some of the more elaborate answers, I thought it would be a good idea to bundle those questions and answers that are of “book quality”.

Acknowledgments

I have selected nothing but questions I have answered [myself](#)⁵, but it goes without saying that I can’t answer every single question about iText personally. For instance: when I am travelling, I am off-line for many hours. As unanswered questions about iText give me stress, I am always happy to see that other people jump in when I’m away from my keyboard.

I want to thank Alexis Pigeon for editing many iText questions in order to clarify what is asked. I rely on Chris Haas for answering questions that require the C# skills that I am missing. I notice that I skip questions about digital signatures, because I know that Michael Klink’s answer will be much more accurate than mine.

I also want to thank the many people who accepted one of my answers, because that’s how one builds a reputation on StackOverflow. I know that some people down-vote me because my style can be harsh at times. Somebody once tweeted: *“Spent a lot of time today on StackOverflow and realized that Bruno Lowagie is kind of a dick.”* Ah well, I hope that the balance is positive.

Please understand that it is hard for me when people talk about “Lowagie” as if it’s a thing, not a person. Sometimes people start by saying that they are *using* “Lowagie software” and then they start cursing at me if I give them an answer they don’t like, for instance: please use a more recent version instead of a version that has been declared “End of Life” more than five years ago. So it goes... Not every developer realizes that I’m on their side and that their job is much easier if only their boss would purchase a commercial iText license so that they can use the most recent version.

³<https://github.com/itext/itextpdf>

⁴<http://stackoverflow.com>

⁵<http://stackoverflow.com/users/1622493/bruno-lowagie>

How to use this book?

I've tried organizing the questions and answers in different categories. This wasn't always simple. If somebody asks a question about adding an image to a table, should this question be categorized under "images" or under "tables"? If there's a question about XHTML content that needs to be added to a column, is that an "XML" or a "ColumnText" question? A book isn't a web site where you can easily introduce a taxonomy. That's why I took great care when creating the table of contents.

In many cases, I rephrased the original question so that you understand what a question is about at a glance, just by browsing the bookmarks. In some cases, I even had to rewrite the question.

All the questions are marked with a question mark icon like this:



this is a question

At times, I throw in a question of myself to clarify things. These questions are marked with an information icon:



This is an extra question added by myself

Sometimes, it was important to add a comment that was made on StackOverflow. I have marked comments like this:



This is a comment

I hope you enjoy this book, and that it helps you solving all your iText problems. If not, please post a question on [StackOverflow](http://stackoverflow.com)⁶ and, who knows, maybe your question will be added to this book.

⁶<http://stackoverflow.com>

Questions about PDF in general

When posting a question on StackOverflow, people can tag their posts as iText or iTextSharp questions. This allows me to quickly find those questions by performing a simple query for [posts tagged as itext* questions](#)⁷. This includes the tags `itext`, `itextsharp`, `itextpdf` and `itextg`.

However, not all questions tagged this way are iText-related. Sometimes, people using iText have questions that are about PDF in general.

What is the difference between iText, JasperReports and Adobe LC?



Actually I want to know the difference or comparison between different PDF creation / generation techniques. For Example: iText, Adobe LC, Jasper Reports, etc.

I would like to know the exact advantage / disadvantage of using each of them.

Currently I am using Adobe LC ES2 and would like to also know the advantage of using Adobe software over other techniques.

Posted on StackOverflow on [Mar 19, 2013](#) ⁸ by [user2185226](#)⁹

That's a very broad question and I see that it already has a vote to close the question for this reason. Let me give the nutshell version of the answer. I could easily write a book on this topic (and maybe one day I will).

- iText is a library that can be used by developers to enhance their web and other applications with PDF functionality: create PDF, fill out PDF forms, examine and manipulate existing PDFs.
- JasperReports is a Business Intelligence / Reporting tool that uses an old iText version to create reports. It is distributed by JasperSoft / TIBCO. JasperReports only uses a limited part of the complete iText functionality. Creating PDF is just one of many features of JasperReports, and JasperSoft uses iText to implement that feature.

⁷http://stackoverflow.com/questions/tagged/itext*

⁸<http://stackoverflow.com/questions/15492738/difference-between-itext-and-adobe-lc>

⁹<http://stackoverflow.com/users/2185226/user2185226>

- Adobe LC is a suite of modules, some of which can only be provided by Adobe. For instance: no third party can “Reader enable” PDF documents because Reader enabling requires a private key that is proprietary to Adobe. However: iText competes with Adobe LC in some areas, for instance digital signing (read [the white paper from the Office of Legislative Counsel on digital signatures](#)¹⁰) and form filling (iText has an add-on called [XFA Worker](#)¹¹ that can convert your dynamic XFA forms into static PDF, e.g. PDF/A)

Does a PDF file have styles, headers and footers?



Does a PDF file have styles, headers and footers information as is the case with docx files that have separate xml files with extra information?

Posted on StackOverflow on [Jan 21, 2014](#) ¹² by [Prakhar](#)¹³

Regular PDFs don’t have styles, but different fonts (for instance Helvetica is one font, Helvetica-Bold is another font of the same family). They don’t have headers and footers, just like they don’t have paragraphs, section titles, table rows or table cells. Everything you see in a PDF page, is just a bunch of glyphs, paths and shapes drawn on a canvas.

However: if your PDF is a **Tagged PDF**, the PDF contains something that is known as the StructTreeRoot. This means that, apart from the presentation of the content, you also have a tree structure that stores the semantics of the content. This structure contains references to the content on the different pages, allowing you (for instance) to find out which lines belong together in a paragraph, which parts of the page are “artifacts” (such as a repeating page header or a footer with a page number), which content is organized as a table, etc...

Tagged PDF is a requirement for PDF/A Level A and PDF/UA documents. A majority of the PDF files you can find in the wild aren’t tagged (or aren’t tagged properly).

¹⁰http://www.mnhs.org/preserve/records/legislative/records/docs_pdfs/CA_Authentication_WhitePaper_Dec2011.pdf

¹¹http://itextpdf.com/product/xfa_worker

¹²<http://stackoverflow.com/questions/21259333/does-pdf-has-styles-headers-and-footers-information-as-docx>

¹³<http://stackoverflow.com/users/1881995/prakhar>

Getting started

The most popular iText example is the “Hello World” example, explaining the five steps to create a PDF from scratch using iText:

```
// step 1
Document document = new Document();
// step 2
PdfWriter.getInstance(document, new FileOutputStream(filename));
// step 3
document.open();
// step 4
document.add(new Paragraph("Hello World!"));
// step 5
document.close();
```

Obviously, iText is capable of doing much more than creating a PDF that shows the words “Hello World”, but let’s take a look at some basic questions to get started.

How to generate and design PDFs with iText or iTextSharp?



I’m wondering what is the best/easiest way to design a PDF document? Is it remotely legit to actually design a whole PDF document with iTextSharp with code (i.e not loading external files)? I want the final result to look similar to a web page with various colors, borders, images and everything.

Or do you have to rely on other documents like .doc, .html files to achieve a good design? Originally I thought that I would use HTML markup to generate a PDF, but why even use a HTML markup or a template file to create the PDF design when I could just do it right within the PDF without having to rely on on various files that serves no real purpose.

Is it possible to generate and design big PDF documents using code and are there any more proper guides or similar with all the various commands to generate texts, images, borders and everything since I have no real clue about generating PDF with code.

Posted on StackOverflow on Oct 6, 2014 ¹⁴ by HenrikP¹⁵

¹⁴<http://stackoverflow.com/questions/26218444/generate-and-design-pdf-with-itextsharp-or-similar>

¹⁵<http://stackoverflow.com/users/2914876/henrikp>

The question is very broad, so I can only give you a very broad answer.

Option 1: you create your layout by using iText's high-level objects. There are countless applications out there that are using PdfPTable to generate complex reports. For instance: the time tables for a German Railway company are created from scratch through code; the invoices for a Belgian Telco company are created this way,... The advantage of this approach is that you can really fine-tune the layout. The disadvantage is that you need to change source code as soon as you want to change the layout.

Option 2: you create your layout by creating an AcroForm template. Every field in this template has a name and is visualized at exact positions (defined by its coordinates) on specific pages. The code to fill out such a form consists of only a handful of lines. Whenever you need to change the layout, you alter the AcroForm template. You do not need to change your code. The disadvantage is that AcroForms are very static. Compare it to a paper form: you can't insert a row in a paper form either.

Option 3: you create your data in XHTML format and your styles in CSS. A Belgian printing company responsible for creating invoices for its customers is streaming data into very simple HTML files involving a sequence of tables that never span more than a handful of pages. These files are then fed to iText's XML worker along with a CSS that is different for each of its customers. The advantage of this approach is that no extra programming is needed when a new customer joins. It's just a matter of creating a new CSS. The disadvantage is that you are limited by the HTML format. Elementary logic also tells you that you shouldn't expect URL2PDF: have you ever tried printing a website? Well, the bad quality of that print should give you an indication of the problems you'll encounter when trying to convert HTML to PDF. If you anticipate them, you can get good results. If you don't: it's a poor craftsman who blames his tools...

Option 4: define your template using the XML Forms Architecture (XFA). Such templates are usually created using Adobe LiveCycle Designer. An XSD is fed into LC Designer and the result is an empty form where the PDF format acts as a container for an XML stream. You can then use iText to inject your custom XML containing data that conforms with the XSD into the PDF and you can use XFA Worker to flatten such a form. XFA Worker is only available as a closed source product (givers need to set limits because takers rarely do).

Option 5: right now XML Worker is used to convert XHTML+CSS and XFA to PDF (ordinary PDF, PDF/A, PDF/UA). You could use the generic XML Worker engine to support your own XML format. The advantage would be a very powerful engine that you can tune to meet your exact needs. The disadvantage is that this involves a serious up-front development investment.

Option 6: use a third party tool to define the template and a third party server that uses iText under the hood to create PDFs based on the template. An example of such a third party tool is Scriptura developed by Inventive Designers. There are other tools, but Inventive Designers is a customer of iText and we know that they are using iText correctly whereas we don't have this guarantee from other vendors.

How to create a complex PDF document?



I have an Java/Java EE based application wherein I have a requirement to create PDF certificates for various services that will be provided to the users. I am looking for a way to create PDF (no need for digital certificates for now). What is the easiest and convenient way of doing that? I have tried

1. XSL to PDF conversion
2. HTML to PDF conversion using itext.
3. the crude Java way (using PdfWriter, PdfPTable, etc.)

What is the best way out of these, or is there any other way which is easier and convenient?

Posted on StackOverflow on [Jan 4, 2013](#)¹⁶ by [Ankit](#)¹⁷

When you talk about Certificates, I think of standard sheets that look identical for every receiver of the certificate, except for:

- the name of the receiver,
- the course that was followed by the receiver,
- a date.

If this is the case, I would use any tool that allows you to create a fancy certificate (Acrobat, Open Office, Adobe InDesign,...) and create a static form (sometimes referred to as an AcroForm) containing three fields: name, course, date.

I would then use iText to fill in the fields like this:

```
PdfReader reader = new PdfReader(pathToCertificateTemplate);
PdfStamper stamper =
    new PdfStamper(reader, new FileOutputStream(pathToCertificate));
AcroFields form = stamper.getAcroFields();
form.setField("name", name);
form.setField("course", course);
form.setField("date", date);
stamper.setFormFlattening(true);
stamper.close();
reader.close();
```

¹⁶<http://stackoverflow.com/questions/14151335/creating-complex-pdf-using-java>

¹⁷<http://stackoverflow.com/users/810176/ankit>

Creating such a certificate from code is “the hard way”; creating such a certificate from XML is “a pain” (because XML isn’t well-suited for defining a layout), creating a certificate from (HTML + CSS) is possible with iText’s XML Worker, but all of these solutions have the disadvantage that it’s hard work to position every item correctly, to make sure everything fits on the same page, etc...

It’s much easier to maintain a template with fixed fields. This way, you only have to code once. If for some reason you want to move the fields to another place, you only have to change the template, you don’t have to worry about messing around in code, XML, HTML or CSS.

Please go to the section about interactive forms to learn more about this technology.

How to set the page size to Envelope size with Landscape orientation?



I create a PDF document using iTextSharp and this code:

```
Document pdfDoc = new Document(PageSize.A4.Rotate(), 10f, 10f, 100f, 0f);
```

I googled but I couldn’t find the Envelope size. How do I set the page size as Envelope with Landscape orientation?

Posted on StackOverflow on [Sep 17, 2014](#)¹⁸ by [King_Fisher](#)¹⁹

You are creating an A4 document in landscape format with this line:

```
Document pdfDoc = new Document(PageSize.A4.Rotate(), 10f, 10f, 100f, 0f);
```

If you want to create a document in envelope format, you shouldn’t create an A4 page, instead you should do this:

```
Document pdfDoc = new Document(envelope, 10f, 10f, 100f, 0f);
```

In this line, envelope is an object of type Rectangle.

There is no such thing as **the** envelope size. There are different envelope sizes to choose from. Take a look at the [envelope size chart](#)²⁰.

For instance, if you want to create a page with the size of a 6-1/4 [Commercial Envelope](#)²¹, then you need to create a rectangle that measures 6 by 3.5 inch. The measurement system in PDF doesn’t use inches, but user units. By default, 1 user unit = 1 point, and 1 inch = 72 points.

Hence you’d define the envelope variable like this:

¹⁸<http://stackoverflow.com/questions/25886909/how-do-i-set-page-size-as-envelope-landscape-in-itextsharp>

¹⁹<http://stackoverflow.com/users/3141617/king-fisher>

²⁰<http://www.paper-papers.com/envelope-size-chart.html>

²¹<http://www.paper-papers.com/6-14-Commercial-Envelopes-24lb-WHITE-WOVE-35-x-6.html>

```
Rectangle envelope = new Rectangle(432, 252);
```

Because:

6 inch x 72 points = 432 points (the width)

3.5 inch x 252 points = 252 points (the height)

If you want a different envelope type, you have to do the Math with the dimensions of that envelope format.

Fonts

Simple fonts, composite fonts, embedded fonts, encoding, ttf files, special characters, right to left writing systems,... This chapter is where all your questions about fonts belong.

How to use the font Verdana in PdfStamper?



I want to use Verdana as a font while stamping a PDF file with iText PDF. The original file uses Verdana, which isn't an option in the class BaseFont.

Here is the function to create my font right now:

```
def standardStampFont() {  
    return BaseFont.createFont(BaseFont.HELVETICA, BaseFont.WINANSI, false)  
}
```

I'd like to change that to the Verdana Font, but simply exchanging the Part BaseFont.HELVETICA with "Verdana" doesn't work.

Posted on StackOverflow on Oct 16, 2014 ²² by Alain Sarti²³

iText can support the Standard Type 1 fonts, because iText ships with AFM file (Adobe Font Metrics files). iText has no idea about the font metrics of other fonts (Verdana isn't a Standard Type 1 font). You need to provide the path to the Verdana font file.

```
BaseFont.createFont("c:/windows/fonts/verdana.ttf", BaseFont.WINANSI, BaseFont.EMBEDDED)
```

Note that I change false to BaseFont.EMBEDDED because the same problem you have on your side, will also occur on the side of the person who looks at your file: his PDF viewer can render Standard Type 1 fonts, but may not be able to render other fonts such as Verdana.

Caveat: The hard coded path "c:/windows/fonts/verdana.ttf" works for me on my local machine because the font file can be found using that path on my local machine. This code won't work on the server where I host the iText site, though (which is a Linux server that doesn't even have a c:/windows/fonts directory). I am using this hard coded path by way of example. You should make sure that the font is present and available when you deploy your application.

²²<http://stackoverflow.com/questions/26404418/how-to-use-verdana-font-in-stamper-itext-pdf>

²³<http://stackoverflow.com/users/1817618/alain-sarti>

Why doesn't FontFactory.GetFont() work for all fonts?



If I say:

```
var georgia = FontFactory.GetFont("Georgia Regular", 10f);
```

it doesn't work. When I check the state of the variable georgia, it has its Family property set to the value UNDEFINED and its FamilyName property set to Unknown.

It only works if I actually load and register the font file and then get it like so:

```
FontFactory.Register("C:\\Windows\\Fonts\\georgia.ttf", "Georgia");  
var georgia = FontFactory.GetFont("Georgia", 20f);
```

Why is that?

Posted on StackOverflow on Jun 3, 2014²⁴ by Water Cooler v2²⁵

iText is written in Java, which means it's platform-independent. It ships with 14 AFM files containing the metrics of the 14 Standard Type 1 fonts (4 flavors of Helvetica, 4 flavors of Times Roman, 4 flavors of Courier, Symbol and ZapfDingbats).

As soon as you need other fonts, you need to register the font files by passing the path to the font directory or the path to an actual font. The font directory on Linux is different from the font directory on Windows (there is no "C:/Windows/fonts" on Linux). There's also a method registerDirectories() that looks at the operating system you're currently using and that registers all the 'usual suspects' (iText guesses the font path based on the OS). This method is expensive: it registers *all* fonts it finds and this costs time and memory.

Once fonts are registered, you can ask the FontFactory for the registered names. This is shown in the FontFactoryExample²⁶. You'll notice the difference between the getRegisteredFonts() method and the getRegisteredFamilies() method.

Additional note: the original question is about iTextSharp, written in C#. iTextSharp is ported from Java and tries to stay as close as possible to the original version written in Java. Nevertheless, the same rationale applies: starting up an application would be much slower if iTextSharp would have to scan the fonts directory. In most applications, you only need a handful of fonts; registering all fonts available in the Windows fonts directory would be overkill.

²⁴<http://stackoverflow.com/questions/24007492/why-doesnt-fontfactory-getfontknown-font-name-floatsize-work>

²⁵<http://stackoverflow.com/users/303685/water-cooler-v2>

²⁶<http://itextpdf.com/examples/iiia.php?id=212>

Why aren't my fonts getting registered?



I have a program using iTextSharp that includes the code

```
FontFactory.RegisterDirectories();  
foreach (string fontname in FontFactory.RegisteredFonts) {  
    Log.Info("**** Found registered font: " + fontname);  
}
```

When I run it (using Mono on a CentOS box), the log shows only the core PostScript fonts:

- zapfdingbats
- times-roman
- times-italic
- helvetica-boldoblique
- courier-boldoblique
- helvetica-bold
- helvetica
- courier-oblique
- helvetica-oblique
- courier-bold
- times-bolditalic
- courier
- times-bold
- symbol

But I have 156 TTF files under my `/usr/share/fonts` directory tree (which is one of the directories mentioned in the code for the `RegisterDirectories` function). Why aren't these being registered?

Posted on StackOverflow on [Nov 29, 2013](#)²⁷ by [dan04](#)²⁸

There are subtle differences between iText and iTextSharp.

In iText, `registerDirectories()` looks like this:

²⁷<http://stackoverflow.com/questions/13635212/why-arent-my-fonts-getting-registered>

²⁸<http://stackoverflow.com/users/287586/dan04>

```

public int registerDirectories() {
    int count = 0;
    String windir = System.getenv("windir");
    String fileseparator = System.getProperty("file.separator");
    if (windir != null && fileseparator != null) {
        count += registerDirectory(windir + fileseparator + "fonts");
    }
    count += registerDirectory("/usr/share/X11/fonts", true);
    count += registerDirectory("/usr/X/lib/X11/fonts", true);
    count += registerDirectory("/usr/openwin/lib/X11/fonts", true);
    count += registerDirectory("/usr/share/fonts", true);
    count += registerDirectory("/usr/X11R6/lib/X11/fonts", true);
    count += registerDirectory("/Library/Fonts");
    count += registerDirectory("/System/Library/Fonts");
    return count;
}

```

In iTextSharp however, the method looks like this:

```

public virtual int RegisterDirectories() {
    string dir = Path.Combine(
        Path.GetDirectoryName(Environment.GetFolderPath(
            Environment.SpecialFolder.System)), "Fonts");
    return RegisterDirectory(dir);
}

```

Java is platform independent, so we have to look for the ‘usual suspects’. C# is Windows specific, so we can depend on the environment to tell us where to find fonts. Your question tells us that Mono doesn’t support this, so you’ll have to use `FontFactory.RegisterDirectory("/usr/share/fonts");`

Images

In this section, you'll find the questions related to raster images, such as JPG, PNG, GIF, and so on.

Why aren't images added sequentially?



I am working on a pdf report that contains topics and images (charts). The document is formatted this way:

NR. TOPIC TITLE FOR TOPIC 1

CHART IMAGE for topic 1 (from bytearray)

NR. TOPIC TITLE FOR TOPIC 2

CHART IMAGE for topic 2 ...

Let's assume that I add this information in a loop, and that the loop runs 10 times. I expect 10 topic titles all directly followed by the image.

However, if the page end is reached and a new image should be added, I notice that the image is moved to the next page and the next topic title is printed on the previous page.

So on paper we have:

```
page 1: topic 1
        image topic 1
        topic 2
        image topic 2
        topic 3
        topic 4
page 2: image topic 3
        image topic 4
        topic 5
        image topic 5
```

So the order of the elements on paper, is NOT the same as the order that I used to put the element in the document via the 'document.add()' method. This is really strange. Anyone has any idea?

Posted on StackOverflow on [Mar 26, 2014](#) ²⁹ by [wim boone](#)³⁰

²⁹<http://stackoverflow.com/questions/22664126/image-not-sequentially-added-in-pdf-document-itextsharp-wrong-order-of-elements>

³⁰<http://stackoverflow.com/users/3149519/wim-boone>

If you have a `PdfWriter` instance (for instance `writer`), you need to force iText to use strict image sequence like this:

```
writer.setStrictImageSequence(true);
```

Otherwise, iText will postpone adding images until there's sufficient space on the page to add the image.

How to get the image DPI in PDF?



I'm trying to get information about scanned images that are saved into PDF files through iText (using Java). I can get width and height (either through `Matrix`, or through `BufferedImage`). The idea was to use the answer here to calculate the DPI, but I am a bit lost. Are these values (width and height) in pixels or points? Is there any other way to achieve this? There are a lot of answers on how to scale and save an image to a PDF file, but I didn't find any on how to read the width/height/scale of an image and be confident about the result.

Posted on StackOverflow on Aug 28, 2014 ³¹ by Finik³²

Let's split this problem into two separate problems. To calculate the DPI, you need two sets of values: a number of pixels and a distance in inch.

1. Number of pixels: you obtain the image and the image consists of pixels. You can retrieve the width and height of the image in pixels from the image. Let's say these values are `wPx` and `hPx`.
2. Distance in inch: you obtain the matrix which gives you values expressed in points. As 72 points equal 1 inch, you need to divide these values by 72. Let's say these values are `wInch` and `hInch`.

Now you can calculate the DPI in the x direction like this: `wPx / wInch` and the DPI in the y direction like this: `hPx / hInch`.

³¹<http://stackoverflow.com/questions/25550000/getting-image-dpi-in-pdf-files-using-itext>

³²<http://stackoverflow.com/users/1300529/finik>

How to preserve high resolution images in PDF?



I'm trying to put high quality images into PDF (one per page). But if I set page size to a4, I have to resize my pictures, because they're too large. Then they lose their quality. Is there any way to put big image to a4 page without losing quality?

I'm using iTextSharp library, firstly I'm creating the document

```
document = new Document(PageSize.A4, 0, 0, 0, 0);  
FileStream output = new FileStream(pdfPath + "document.pdf", FileMode.Create);  
PdfWriter writer = PdfWriter.GetInstance(document, output);  
document.Open();
```

then I'm adding each picture

```
document.Add(iTextSharp.text.Image.GetInstance(toSaveImage, System.Drawing.Imaging.ImageFormat.Tiff));
```

and closing the document

```
document.Close();
```

Posted on StackOverflow on [jun 6, 2013](#)³³ by [Com Piler](#)³⁴

First let me clear a couple of misunderstandings:

- a PDF document as such doesn't have a resolution. There is no such thing as DPI in PDF. The resolution only comes into play when a PDF is rendered (to the screen, to paper,...) and that's why there may be a DPI in a PDF viewer (but that's something completely different).
- when you scale an Image object in iTextSharp, you don't lose any information: the number of pixels remains the same. Whereas PDF doesn't have a resolution, the images inside a PDF do. When you scale the image down (that is: you put the same number of pixels on a smaller canvas), the resolution increases; when you scale up, the resolution decreases.

Now for your question: you're not obliged to create A4 pages:

³³<http://stackoverflow.com/questions/16970106/c-sharp-high-resolution-images-in-pdf>

³⁴<http://stackoverflow.com/users/2411220/com-piler>

```
Image img =
    iTextSharp.text.Image.GetInstance(toSaveImage,
        System.Drawing.Imaging.ImageFormat.Tiff);
Rectangle pagesize = new Rectangle(img.ScaledWidth, img.ScaledHeight);
Document document = new Document(pagesize);
img.SetAbsolutePosition(0, 0);
document.Add(img);
```

I created the Document based on the scaled dimensions of the Image. Don't let the method names mislead you: `ScaledWidth` and `ScaledHeight` are the safest methods to use when getting the dimensions of an Image. Not only do they include any scaling operations, you may have done on the image, they also take into account the space needed for the image after rotating it.

Observe that I've set the absolute position to the lower-left corner. That's safer than setting the page margins to 0.

If you don't want to change the page size, then you have to use the `ScaleToFit()` method:

```
Image img =
    iTextSharp.text.Image.GetInstance(toSaveImage,
        System.Drawing.Imaging.ImageFormat.Tiff);
img.ScaleToFit(PageSize.A4);
```

Scale to fit will keep the aspect ratio of the image. If the aspect ratio of the image is different from the aspect ratio of the page, the page will have a margin.

Absolute positioning of text

In this section, we'll discuss problems that can occur when adding text at absolute positions.

How to write a Zapfdingbats character at a specific location on a page?



I want to put a check mark using Zapfdingbats on a specific location in my PDF document.

What I achieved so far is this: I can show the check mark but it's on the side of the document and not on the specific X, Y coordinate that I want it to be.

Posted on StackOverflow on [May 4, 2013](#)³⁵ by [δοῦλος Ἰησοῦς Χριστός](#)³⁶

Let's start with a Font object that knows how to draw a Zapfdingbats character:

```
Font font = new Font(Font.FontFamily.ZAPFDINGBATS, 12);
```

Once you have a Font object, you can create a Phrase:

```
Phrase phrase = new Phrase(zapfstring, font);
```

Where zapfstring is a string containing any Zapfdingbats character you want.

To add this Phrase at an absolute position, you can use the ShowTextAligned() method and PdfWriter's *direct content*:

```
PdfContentByte canvas = writer.DirectContent;  
ColumnText.ShowTextAligned(canvas, Element.ALIGN_CENTER, phrase, 200, 500, 0);
```

Where 200 and 500 are an X and Y coordinate and 0 is an angle expressed in degrees. Instead of ALIGN_CENTER, you can also choose ALIGN_RIGHT or ALIGN_LEFT.

³⁵<http://stackoverflow.com/questions/16370428/how-to-write-in-a-specific-location-the-zapfdingbatslist-in-a-pdf-document-using>

³⁶<http://stackoverflow.com/users/2170392/>

How to reduce redundant code when adding content at absolute positions?



This is part of a vb.net app that uses the itextsharp library:

```
Dim cb As PdfContentByte = writer.DirectContent
cb.BeginText()
cb.SetFontAndSize(Californian, 36)
cb.ShowTextAligned(PdfContentByte.ALIGN_CENTER,
    "CERTIFICATE OF COMPLETION", 396, 397.91, 0)
cb.SetFontAndSize(Bold_Times, 22)
cb.ShowTextAligned(PdfContentByte.ALIGN_CENTER, name, 396, 322.35, 0)
cb.SetFontAndSize(Bold_Times, 16)
cb.ShowTextAligned(PdfContentByte.ALIGN_CENTER,
    _hours + " Hours", 297.05, 285.44, 0)
cb.SetFontAndSize(Bold_Times, 16)
cb.ShowTextAligned(PdfContentByte.ALIGN_CENTER,
    _dates, 494.95, 285.44, 0)
cb.SetFontAndSize(Bold_Times, 16)
cb.ShowTextAligned(PdfContentByte.ALIGN_CENTER, _class1, 396, 250.34, 0)
If Not String.IsNullOrEmpty(_class2) Then
    cb.SetFontAndSize(Bold_Times, 16)
    cb.ShowTextAligned(PdfContentByte.ALIGN_CENTER, _class2, 396, 235.34, 0)
End If
cb.SetFontAndSize(Copper, 16)
cb.ShowTextAligned(PdfContentByte.ALIGN_CENTER,
    _conf_num + _prefix + " Annual Conference " + _dates, 396, 193.89, 0)
cb.SetFontAndSize(Bold_Times, 13)
cb.ShowTextAligned(PdfContentByte.ALIGN_CENTER, "Some Name", 396, 175.69, 0)
cb.SetFontAndSize(Bold_Times, 10)
cb.ShowTextAligned(PdfContentByte.ALIGN_CENTER,
    "Some Company Manager", 396, 162.64, 0)
cb.EndText()
```

Plenty of lines in this snippet look awfully redundant and in my opinion, this can't be the cleanest way to do things. Unfortunately, I can't figure out how to create a separate function to which I can simply pass some parameters, such as string, x_Cord, y_Cord, tilt. Such a function would then perform the necessary operations on the PdfContentByte.

Posted on StackOverflow on Nov 23, 2012 ³⁷ by Skindeep2366³⁸

³⁷<http://stackoverflow.com/questions/13523099/separating-redundant-code-from-pdf-generator-function>

³⁸<http://stackoverflow.com/users/969487/skindeep2366>

You're adding content "the hard way". If I were you, I'd write a separate class/factory/method that creates either a Phrase or a Paragraph with the content. For instance:

```
protected Font f1 = new Font(Californian, 36);
protected Font f2 = new Font(Bold_times, 16);

public Phrase getCustomPhrase(String name, int hours, ...) {
    Phrase p = new Phrase();
    p.add(new Chunk("...", f1));
    p.add(new Chunk(name, f2);
    ...
    return p;
}
```

Then I would use ColumnText to add the Phrase or Paragraph at the correct position. In the case of a Phrase, I'd use the ColumnText.showTextAligned() method. In the case of Paragraph, I'd use this construction:

```
ColumnText ct = new ColumnText(writer.DirectContent);
ct.setSimpleColumn(rectangle);
ct.addElement(getCustomParagraph(name, hours, ...));
ct.go();
```

The former (using a Phrase) is best if you only need to write one line that doesn't need to be wrapped, oriented in any direction you want.

The latter (using a Paragraph in *composite mode*) is best if you want to add text inside a specific rectangle (defined by the coordinates of the lower-left corner and the upper-right corner).

The approach you've taken works, but... it involves writing PDF syntax almost "manually". That's more difficult and therefore more error-prone. You already discovered that, otherwise you wouldn't ask the question ;-)

Why does ColumnText ignore the horizontal alignment?



I'm trying to get some rows of text on the left side and some on the right side. For some reason iText seems to ignore the alignment entirely. For example:

```
// create 200x100 column
ct = new ColumnText(writer.DirectContent);
ct.SetSimpleColumn(0, 0, 200, 100);
ct.AddElement(new Paragraph("entry1"));
ct.AddElement(new Paragraph("entry2"));
ct.AddElement(new Paragraph("entry3"));
ret = ct.Go();

ct.SetSimpleColumn(0, 0, 200, 100);
ct.Alignment = Element.ALIGN_RIGHT;
ct.AddElement(new Paragraph("entry4"));
ct.AddElement(new Paragraph("entry5"));
ct.AddElement(new Paragraph("entry6"));
ret = ct.Go();
```

I've set the alignment of the 2nd column to `Element.ALIGN_RIGHT` but the text appears printed on top of column one, rendering unreadable text. Like the alignment was still set to left

Posted on StackOverflow on [Aug 9, 2013](#)³⁹ by [Chuck](#)⁴⁰

To understand what happens, you should learn about the concepts “*text mode*” and “*composite mode*”.

If you work in **text mode**, you can define the alignment at the level of the `ColumnText` object. In other words `ct.Alignment = Element.ALIGN_RIGHT;` will work in text mode.

If you work in **composite mode**, the alignment at the column level will be ignored in favor of the alignment of the elements added to the column. In your case, iText will ignore the `ALIGN_RIGHT` in favor of the alignment of the `Paragraph` objects added to the column. Looking at your code, I see that you didn't define an alignment for the paragraphs, so the default alignment `ALIGN_LEFT` is used.

How do you know if you're working in *text mode* or in *composite mode*?

By default, `ColumnText` uses *text mode* but it switches to *composite mode* (removing all previously added text) the moment you invoke the `AddElement()` method.

³⁹<http://stackoverflow.com/questions/18142623/itext-column-text-ignores-alignment>

⁴⁰<http://stackoverflow.com/users/1280511/chuck>

The concepts *text mode* and *composite mode* also applies to PdfPCell.

Tables

The PdfPTable class is one of the most popular classes in the context of document creation. Let's take a look at some questions and answers regarding tables, rows and cells.

How to right-align text in a PdfPCell?



I have a C# application that generates a PDF invoice. In this invoice is a table of items and prices. This is generated using a PdfPTable and PdfPCells.

I want to be able to right-align the price column but I cannot seem to be able to - the text always comes out left-aligned in the cell.

Here is my code for creating the table:

```
PdfPTable table = new PdfPTable(2);
table.TotalWidth = invoice.PageSize.Width;
float[] widths = { invoice.PageSize.Width - 70f, 70f };
table.SetWidths(widths);
table.AddCell(new Phrase("Item Name", tableHeadFont));
table.AddCell(new Phrase("Price", tableHeadFont));
SqlCommand cmdItems = new SqlCommand("SELECT...", con);
using (SqlDataReader rdrItems = cmdItems.ExecuteReader())
{
    while (rdrItems.Read())
    {
        table.AddCell(new Phrase(rdrItems["itemName"].ToString(), tableFont));
        double price = Convert.ToDouble(rdrItems["price"]);
        PdfPCell pcell = new PdfPCell();
        pcell.HorizontalAlignment = PdfPCell.ALIGN_RIGHT;
        pcell.AddElement(new Phrase(price.ToString("0.00"), tableFont));
        table.AddCell(pcell);
    }
}
```

Can anyone help?

Posted on StackOverflow on Nov 28, 2012 ⁴¹ by colincameron⁴²

⁴¹<http://stackoverflow.com/questions/13607970/right-aligning-text-in-pdfpcell>

⁴²<http://stackoverflow.com/users/970789/colincameron>

You're mixing **text mode** and **composite mode**.

In **text mode**, you create the PdfPCell with a Phrase as the parameter of the constructor, and you define the alignment at the level of the cell. However, you're working in **composite mode**. This mode is triggered as soon as you use the addElement() method. In **composite mode**, the alignment defined at the level of the cell is ignored (which explains your problem). Instead, the alignment of the separate elements is used.

How to solve your problem?

Either work in **text mode** by adding your Phrase to the cell in a different way. Or work in **composite mode** and use a Paragraph for which you define the alignment.

The advantage of **composite mode** over **text mode** is that different paragraphs in the same cell can have different alignments, whereas you can only have one alignment in **text mode**. Another advantage is that you can add more than just text: you can also add images, lists, tables,... An advantage of **text mode** is speed: it takes less processing time to deal with the content of a cell.

How to use multiple fonts in a single cell?



I'm making a windows form for a friend that delivers packages. So I want to transfer his current paper form, into a .pdf with the library iTextSharp.

What I need:

I want the table to have a little headline, "Company name" for example, the text should be a little smaller than the text input from the windows form. Currently I'm using cells and was wondering if I can use 2 different font sizes within the same cell?

What I have:

```
table.AddCell("Static headline" + Chunk.NEWLINE + richTextBox1.Text);
```

What I "want":

```
var normalFont = FontFactory.GetFont(FontFactory.HELVETICA, 9);
var boldFont = FontFactory.GetFont(FontFactory.HELVETICA_BOLD, 12);
table.AddCell("Static headline", boldFont + Chunk.NEWLINE + richTextBox1.Text, n\
ormalFont);
```

Posted on StackOverflow on Feb 13, 2014⁴³ by Frederik Kiel⁴⁴

⁴³<http://stackoverflow.com/questions/21750597/c-sharp-itextsharp-multi-fonts-in-a-single-cell>

⁴⁴<http://stackoverflow.com/users/3300515/frederik-kiel>

You're passing a `String` and a `Font` to the `AddCell()` method. That's not going to work. You need the `AddCell()` method that takes a `Phrase` object or a `PdfPCell` object as parameter.

A `Phrase` is an object that consists of different `Chunks`, and the different `Chunks` can have different font sizes. For instance:

```
Phrase phrase = new Phrase();
phrase.Add(
    new Chunk("Some BOLD text", new Font(Font.FontFamily.TIMES_ROMAN, 12, Font.\
BOLD))
);
phrase.Add(new Chunk(", some normal text", new Font()));
table.AddCell(phrase);
```

A `PdfPCell` is an object to which you can add different objects, such as `Phrases`, `Paragraphs`, `Images`,...

```
PdfPCell cell = new PdfPCell();
cell.AddElement(new Paragraph("Hello"));
cell.AddElement(list);
cell.AddElement(image);
```

In this snippet `list` is of type `List` and `image` is of type `Image`.

The first snippet uses **text mode**; the second snippet uses **composite mode**. Cells behave very differently depending on the mode you use.

How to introduce a rowspan?



I am adding a table to a PDF file. I have 3 rows and 3 columns. I want the first column to appear only once as a single cell for all the rows. The result should be like where it says Deloitte in the column of company as shown in the image:

Company	Name	Gender
deloitte	sindhu	f
	shilpa	f
	srikar	m
	abc	f
	def	f
	geh	m

Table showing desired result

Posted on StackOverflow on [Apr 5, 2014](#)⁴⁵ by [sindhu jampani](#)⁴⁶

The [MyFirstTable](#)⁴⁷ example from my book does exactly what you need. Ported to C#, it looks like this:

```
PdfPTable table = new PdfPTable(3);
// the cell object
PdfPCell cell;
// we add a cell with colspan 3
cell = new PdfPCell(new Phrase("Cell with colspan 3"));
cell.Colspan = 3;
table.AddCell(cell);
// now we add a cell with rowspan 2
cell = new PdfPCell(new Phrase("Cell with rowspan 2"));
cell.Rowspan = 2;
table.AddCell(cell);
// we add the four remaining cells with addCell()
table.AddCell("row 1; cell 1");
table.AddCell("row 1; cell 2");
table.AddCell("row 2; cell 1");
table.AddCell("row 2; cell 2");
```

⁴⁵<http://stackoverflow.com/questions/22878410/constant-column-for-multiple-rows>

⁴⁶<http://stackoverflow.com/users/3191619/sindhu-jampani>

⁴⁷<http://itextpdf.com/examples/iia.php?id=75>

You can look at the resulting PDF [here](#)⁴⁸. In your case you'd need

```
cell.Rowspan = 6;
```

For the cell with value Deloitte.

How to change width of single column of table?



hello I have created table in a PDF file using iText. The heading of my table columns are “Medicine Name”, “Doses”, and “time: This is what my columns look like:

```
|Medicin|Doses|time|
| e name|      |      |
```

As you can see the word “Medicine” is split into “Medicin” and “e”. I want to avoid this by changing the width of the first column, but I don't know how to do that.

Posted on StackOverflow on [Jun 10, 2014](#)⁴⁹ by [DCoder](#)⁵⁰

The [ColumnWidths](#)⁵¹ example demonstrates different ways of changing the width of a column. This is one specific way:

```
PdfPTable table = new PdfPTable(3);
table.setWidths(new int[]{2, 1, 1});
```

Now the width of the first column is double the size of the second and third column.

⁴⁸http://examples.itextpdf.com/results/part1/chapter04/first_table.pdf

⁴⁹<http://stackoverflow.com/questions/24141791/how-to-change-width-of-single-coloumn-of-table-itext-android>

⁵⁰<http://stackoverflow.com/users/2843856/dcoder>

⁵¹<http://itextpdf.com/examples/iiia.php?id=76>

What is the PdfPTable.DefaultCell property used for?



What is the DefaultCell property used for? The Java documentation for PdfPTable.getDefaultCell() reads:

Gets the default PdfPCell that will be used as reference for all the addCell methods except addCell(PdfPCell).

I don't understand this.

Posted on StackOverflow on [Jun 3, 2014](#)⁵² by [Water Cooler v2](#)⁵³

When creating a PdfPTable, you add cells.

One way is to create a PdfPCell object and to add that cell with the addCell() method.

Another way is to use a short-cut: you don't create a PdfPCell, but you add a String or a Phrase to the table with the addCell() method. In this case, a PdfPCell is created **internally** using **default properties**. You can **change the default properties** by **changing the properties of the default cell**. The default cell is obtained using the getDefaultCell() method.

This is what the Javadoc information is about: this default PdfPCell will be used as reference for all the addCell() methods except addCell(PdfPCell). (Because when adding a PdfPCell, the properties of that PdfPCell will be used, *not* the properties of the *default* cell.)

How to draw a borderless table in iTextSharp?



It appears as though the PdfPCell class does have a border property on it but not the PdfPTable class.

Is there some property on the PdfPTable class to set the borders of all its contained cells in one statement?

Posted on StackOverflow on [Jun 3, 2014](#)⁵⁴ by [Water Cooler v2](#)⁵⁵

Borders are defined at the level of the cell, not at the level of the table. Hence: if you want to remove the borders of the table, you need to remove the borders of each cell.

⁵²<http://stackoverflow.com/questions/24006618/what-is-the-pdfptable-defaultcell-property-used-for>

⁵³<http://stackoverflow.com/users/303685/water-cooler-v2>

⁵⁴<http://stackoverflow.com/questions/24006547/draw-a-borderless-table-in-itextsharp>

⁵⁵<http://stackoverflow.com/users/303685/water-cooler-v2>

By default, each cell has a border. You can change this default behavior by changing the border of each cell. For instance: if you create PdfPCell objects, you use:

```
cell.setBorder(Rectangle.NO_BORDER);
```

In case the cells are created internally, you need to change that property at the level of the default cell.

```
table.getDefaultCell().setBorder(Rectangle.NO_BORDER);
```

For special borders, for instance borders with rounded corners or a single border for the whole table, or double borders, you can use either cell events or table events, or a combination of both.

Why doesn't `getDefaultCell().setBorder(PdfPCell.NO_BORDER)` have any effect?



I'm new with iText and I'm trying to build a table. For some reason `table.getDefaultCell().setBorder(PdfPCell.NO_BORDER)` has no effect: my table has still borders.

Here is my code:

```
PdfPTable table = new PdfPTable(new float[] { 1, 1, 1, 1, 1 });
table.getDefaultCell().setBorder(PdfPCell.NO_BORDER);
Font tfont = new Font(Font.FontFamily.UNDEFINED, 10, Font.BOLD);
table.setWidthPercentage(100);
PdfPCell cell;
cell = new PdfPCell(new Phrase("Menge", tfont));
table.addCell(cell);
cell = new PdfPCell(new Phrase("Beschreibung", tfont));
table.addCell(cell);
cell = new PdfPCell(new Phrase("Einzelpreis", tfont));
table.addCell(cell);
cell = new PdfPCell(new Phrase("Gesamtpreis", tfont));
table.addCell(cell);
cell = new PdfPCell(new Phrase("MwSt", tfont));
table.addCell(cell);
document.add(table);
```

Do you have any idea what I am doing wrong?

Posted on StackOverflow on Nov 30, 2014 ⁵⁶ by hiasl⁵⁷

⁵⁶<http://stackoverflow.com/questions/27212695/itext-5-getdefaultcell-setborderpdfpcell-no-border-has-no-effect>

⁵⁷<http://stackoverflow.com/users/4308508/hiasl>

You are mixing two different concepts.

Concept 1: you define every PdfPCell manually, for instance:

```
PdfPCell cell = new PdfPCell(new Phrase("Menge", tfont));
cell.setBorder(Rectangle.NO_BORDER);
table.addCell(cell);
```

In this case, you define every aspect, every property of the cell on the cell itself.

Concept 2: you allow iText to create the PdfPCell implicitly, for instance:

```
table.addCell("Adding a String");
table.addCell(new Phrase("Adding a phrase"));
```

In this case, you can define properties at the level of the *default cell*. These properties will be used internally when iText creates a PdfPCell in your place.

Conclusion: either you define the border for all the PdfPCell instances separately, or you let iText create the PdfPCell instances in which case you can define the border at the level of the default cell. If you choose the second option, you can adapt your code like this:

```
PdfPTable table = new PdfPTable(new float[] { 1, 1, 1, 1, 1 });
table.getDefaultCell().setBorder(PdfPCell.NO_BORDER);
Font tfont = new Font(Font.FontFamily.UNDEFINED, 10, Font.BOLD);
table.setWidthPercentage(100);
table.addCell(new Phrase("Menge", tfont));
table.addCell(new Phrase("Beschreibung", tfont));
table.addCell(new Phrase("Einzelpreis", tfont));
table.addCell(new Phrase("Gesamtpreis", tfont));
table.addCell(new Phrase("MwSt", tfont));
document.add(table);
```

This decision was made by design, based on experience: it offers the most flexible to work with cells and properties.

Table events

We continue with some questions about tables of which the answer involves table or cell events.

How to use a dotted line as a cell border?



I am trying to create a table with cells that have a dotted line for a border. How can I do this?

Posted on StackOverflow on [Nov 21, 2013](#)⁵⁸ with [user1913695](#)⁵⁹

I've made an example that solves your problem: [DottedLineCell](#)⁶⁰; The resulting PDF is a document with two tables: [dotted_line_cell.pdf](#)⁶¹

For the first table, we use a table event:

```
class DottedCells implements PdfPTableEvent {
    @Override
    public void tableLayout(PdfPTable table, float[][] widths,
        float[] heights, int headerRows, int rowStart,
        PdfContentByte[] canvases) {
        PdfContentByte canvas = canvases[PdfPTable.LINECANVAS];
        canvas.setLineDash(3f, 3f);
        float llx = widths[0][0];
        float urx = widths[0][widths[0].length - 1];
        for (int i = 0; i < heights.length; i++) {
            canvas.moveTo(llx, heights[i]);
            canvas.lineTo(urx, heights[i]);
        }
        for (int i = 0; i < widths.length; i++) {
            for (int j = 0; j < widths[i].length; j++) {
                canvas.moveTo(widths[i][j], heights[i]);
                canvas.lineTo(widths[i][j], heights[i+1]);
            }
        }
    }
}
```

⁵⁸<http://stackoverflow.com/questions/20117321/dotted-line-for-cell-border>

⁵⁹<http://stackoverflow.com/users/1913695/user1913695>

⁶⁰<http://itextpdf.com/sandbox/tables/DottedLineCell>

⁶¹http://itextpdf.com/sites/default/files/dotted_line_cell.pdf

```

    }
    canvas.stroke();
}
}

```

This is the most elegant way to draw the cell borders, as it uses only one `stroke()` operator for all the lines. Unfortunately, this solution isn't an option if you have tables with `rowspans`.

The second table uses a cell event:

```

class DottedCell implements PdfPCellEvent {
    @Override
    public void cellLayout(PdfPCell cell, Rectangle position,
        PdfContentByte[] canvases) {
        PdfContentByte canvas = canvases[PdfPTable.LINECANVAS];
        canvas.setLineDash(3f, 3f);
        canvas.rectangle(position.getLeft(), position.getBottom(),
            position.getWidth(), position.getHeight());
        canvas.stroke();
    }
}

```

With a cell event, a border is drawn around every cell. This means you'll have multiple `stroke()` operators and overlapping lines. However: this solution always works, also when the table has cells with a `rowspan` greater than one.

How to create a table with rounded corners?



I have to create a table having rounded corners, something like it:

Barry Warrick - Building a table with rounded corners

Pag. 2/6

Cell with rounded border

Can I do it with iTextSharp?

Posted on StackOverflow on May 14, 2014⁶² by AndreaNobili⁶³

⁶²<http://stackoverflow.com/questions/23650957/how-to-create-a-rounded-corner-table-using-itext-itextsharp>

⁶³<http://stackoverflow.com/users/1833945/andrea-nobili>

This is done using cell events.

Make sure that you don't add any "automated" borders to the cell, but draw the borders yourself in a cell event:

```
table.DefaultCell.Border = PdfPCell.NO_BORDER;  
table.DefaultCell.CellEvent = new RoundedBorder();
```

The RoundedBorder class would then look like this:

```
class RoundedBorder : IPdfPCellEvent {  
    public void CellLayout(PdfPCell cell, Rectangle rect, PdfContentByte[] canvas)\  
    {  
        PdfContentByte cb = canvas[PdfPTable.BACKGROUNDCANVAS];  
        cb.RoundRectangle(  
            rect.Left + 1.5f,  
            rect.Bottom + 1.5f,  
            rect.Width - 3,  
            rect.Height - 3, 4  
        );  
        cb.Stroke();  
    }  
}
```

You can of course fine-tune the values 1.5, 3 and 4 to get different effects.

Page events

When creating a document from scratch, iText can trigger a series of events for instance when a new page starts or ends, when a paragraph is added, and so on...

How to add a rectangle to every page of a document?



I'm using iText to create a PDF document. Right now I am trying to get a rectangle on every single page of the document but I'm not sure how to do this. I tried adding this at the end of my code:

```
PdfContentByte cb = writer.getDirectContent();
for (int pgCnt = 1; pgCnt <= writer.getPageNumber(); pgCnt++) {
    cb.saveState();
    cb.setColorStroke(new CMYKColor(1f, 0f, 0f, 0f));
    cb.setColorFill(new CMYKColor(1f, 0f, 0f, 0f));
    cb.rectangle(20,10,10,820);
    cb.fill();
    cb.restoreState();
}
```

but this only adds the rectangle on the last page and it kind of make sense because I'm not using the pgCnt anywhere. How can I specify that I want the rectangle on page number pgCnt, so I can add the rectangle on every page?

Posted on StackOverflow on [Mar 19, 2013](#) ⁶⁴ by [Carla Stabile](#) ⁶⁵

Please take a look at the entries for the keyword [Page events](#) ⁶⁶ on the official iText site. You need to extend the [PdfPageEventHelper](#) ⁶⁷ class and add your code to the onEndPage() method.

⁶⁴<http://stackoverflow.com/questions/16638406/how-can-i-add-rectangle-on-every-page-of-a-document-using-itext>

⁶⁵<http://stackoverflow.com/users/1883606/carla-stabile>

⁶⁶<http://itextpdf.com/themes/keyword.php?id=204>

⁶⁷<http://api.itextpdf.com/itext/com/itextpdf/text/pdf/PdfPageEventHelper.html>

```
public void onEndPage(PdfWriter writer, Document document) {
    PdfContentByte cb = writer.getDirectContent();
    cb.saveState();
    cb.setColorStroke(new CMYKColor(1f, 0f, 0f, 0f));
    cb.setColorFill(new CMYKColor(1f, 0f, 0f, 0f));
    cb.rectangle(20,10,10,820);
    cb.fill();
    cb.restoreState();
}
```

Create an instance of your custom page event class, and declare it to the writer before opening the document:

```
writer.setPageEvent(myPageEventInstance);
```

Now your rectangle will be drawn on every page, on top of the existing content. If you want the rectangle under the existing content: replace `getDirectContent()` with `getDirectContentUnder()`.

How can I add an image to all pages of my PDF?



I have been trying to add an image to all pages using iTextSharp. The image needs to be OVER all content of every page. I have used the following code below all the otherdoc.add()

```
Document doc = new Document(iTextSharp.text.PageSize.A4, 10, 10, 30, 1);
PdfWriter writer = PdfWriter.GetInstance(doc,
    new FileStream(Server.MapPath("~/pdf/" + fname), FileMode.Create));
doc.Open();
Image image = Image.GetInstance(Server.MapPath("~/images/draft.png"));
image.SetAbsolutePosition(12, 300);
writer.DirectContent.AddImage(image, false);
doc.Close();
```

The above code only inserts an image in the last page. Is there any way to insert the image in the same way in all pages?

Posted on StackOverflow on Feb 20, 2014 ⁶⁸ by Neville Nazerane⁶⁹

It's normal that the image is only added once; after all: you're adding it only once.

You should create a document in 5 steps and add an event in step 2:

⁶⁸<http://stackoverflow.com/questions/21908651/add-an-image-in-all-pages-of-pdf>

⁶⁹<http://stackoverflow.com/users/991609/neville-nazerane>

```
// step 1
Document document = new Document();
// step 2
PdfWriter writer = PdfWriter.GetInstance(document, stream);
MyEvent event = new MyEvent();
writer.PageEvent = event;
// step 3
document.Open();
// step 4
// Add whatever content you want to add
// step 5
document.Close();
```

You have to write the MyEvent class yourself:

```
protected class MyEvent : PdfPageEventHelper {

    Image image;

    public override void OnOpenDocument(PdfWriter writer, Document document) {
        image = Image.GetInstance(Server.MapPath("~/images/draft.png"));
        image.SetAbsolutePosition(12, 300);
    }

    public override void OnEndPage(PdfWriter writer, Document document) {
        writer.DirectContent.AddImage(image);
    }
}
```

The OnEndPage() in class MyEvent will be triggered every time the PdfWriter has finished a page. Hence the image will be added on every page.

Caveat: it is important to create the image object outside the OnEndPage() method, otherwise the image bytes risk being added as many times as there are pages in your PDF (leading to a bloated PDF).

How to set a fixed background image for all my pages?



On Button Click, I generate 4 pages on my PDF, i added this image to provide a background image

```
string imagePath = parent + "/Images/bg_image.jpg";
iTextSharp.text.Image jpg = iTextSharp.text.Image.GetInstance(imageFilePath);
jpg.ScaleToFit(1700, 1000);
jpg.Alignment = iTextSharp.text.Image.UNDERLYING;
jpg.SetAbsolutePosition(0, 0);
document.Add(jpg);
```

It works only with 1 page, but when I generate a PDF that contains many records and have several pages, the bg image is only at the last page. I want to apply the background image to all of the pages.

Posted on StackOverflow on [Nov 1, 2014](#) ⁷⁰ by [dandy](#)⁷¹

It is normal that the background is added only once, because you're adding it only once.

If you want to add content to every page, you should not do that *manually* because you don't know when a new page will be created by iText. Instead you should use a page event.

The idea is to create an implementation of the PdfPageEvent interface, for instance by extending the PdfPageEventHelper class and overriding the OnEndPage() method:

```
class TemplateHelper : PdfPageEventHelper {
    private Stationery instance;
    public TemplateHelper() { }
    public TemplateHelper(Stationery instance) {
        this.instance = instance;
    }
    /**
     * @see com.itextpdf.text.pdf.PdfPageEventHelper#onEndPage(
     *      com.itextpdf.text.pdf.PdfWriter, com.itextpdf.text.Document)
     */
    public override void OnEndPage(PdfWriter writer, Document document) {
        writer.DirectContentUnder.AddTemplate(instance.page, 0, 0);
    }
}
```

⁷⁰<http://stackoverflow.com/questions/26688288/set-a-fix-background-image-for-all-my-pages-in-pdf-itext-asp-c-sharp>

⁷¹<http://stackoverflow.com/users/4131886/dandy>

In this case, we add a PdfTemplate, but it is very easy to add an Image replacing the Stationery instance with an Image instance and replacing the AddTemplate() method with the AddImage() method.

Once you have an instance of your custom page event, you need to declare it to the PdfWriter instance:

```
writer.PageEvent = new TemplateHelper(this);
```

From that moment on, your OnEndPage() method will be executed each time a page is finalized.

Warning: as documented you *shall not* use the OnStartPage() method to add content in a page event!

If we adapt the above example to your requirement, the final result would look more or less like this:

```
class ImageBackgroundHelper : PdfPageEventHelper {
    private Image img;
    public ImageBackgroundHelper(Image img) {
        this.img = img;
    }
    /**
     * @see com.itextpdf.text.pdf.PdfPageEventHelper#onEndPage(
     *      com.itextpdf.text.pdf.PdfWriter, com.itextpdf.text.Document)
     */
    public override void OnEndPage(PdfWriter writer, Document document) {
        writer.DirectContentUnder.AddImage(img);
    }
}
```

Now you can use this event like this:

```
string imagePath = parent + "/Images/bg_image.jpg";
iTextSharp.text.Image jpg = iTextSharp.text.Image.GetInstance(imageFilePath);
jpg.ScaleToFit(1700, 1000);
jpg.SetAbsolutePosition(0, 0);
writer.PageEvent = new ImageBackgroundHelper(jpg);
```

Note that 1700 and 1000 seems quite big. Are you sure those are the dimensions of your page?

Parsing XML and XHTML

There are a lot of questions about HTMLWorker on StackOverflow. Many of these questions remain unanswered as HTMLWorker has been abandoned in favor of XML Worker. HTMLWorker was initially meant as a parser for a small selection of HTML tags. People started using it as if it were a full-blown HTML to PDF converter and then complained because HTMLWorker doesn't support CSS parsing. The HTMLWorker code grew organically up until a point where it was no longer maintainable.

We started another project, called XML Worker. It can be used to convert XHTML to PDF. It's not an URL to PDF converter in the sense that it won't "print your web site to PDF". In HTML, you can encounter content at the end of the file that needs to be added at the start of the document. When this happens, one would expect that the start of the document is the first page. That isn't possible with iText as iText flushes finished pages to the OutputStream as soon as possible and there is no way to return to a previous page to add the extra content.

XML Worker is meant to create simple reports using an easy language such as HTML (and some CSS). It won't resolve ASP pages, nor execute JavaScript. It will only deal with finished XHTML.

Why is it so difficult to convert XML to PDF?



Could anybody explain to me why is it so complicated to create a pdf file from xml sheet? Acrobat can create XML File but when I want to do this other way round it suddenly gets complicated. I would like to find some simple application which would allow me to create a pdf file out of xml. Is it possible?

Posted on StackOverflow on [Jun 13, 2013](#)⁷² by [DDEX](#)⁷³

XML is a bunch of ingredients, PDF is the finished meal.

He or she who knows how to cook can create a wide variety of meals using the same ingredients. With a potato, he can create soup, mashed potatoes, crisps, french fries,... There's an almost endless list of possibilities.

He or she who can't cook, will stare at the potato and wonder: *How on earth can I turn this ugly vegetable into a nice croquette?*

The answer is: you need a recipe. That recipe could be an XSL:FO file, the XHTML specification, a DocBook implementation, an XFA template,... Without that recipe, you'll never be able to turn your XML into PDF.

⁷²<http://stackoverflow.com/questions/17081907/why-is-it-so-difficult-to-convert-xml-to-pdf>

⁷³<http://stackoverflow.com/users/1934834/ddex>

How to add external CSS while generating PDF?



Currently i am using following code to generate PDF in a JSP file:

```
response.setContentType("application/force-download");
response.setHeader("Content-Disposition", "attachment;filename=reports.pdf");
Document document = new Document();
document.setPageSize(PageSize.A1);
PdfWriter writer = null;
writer = PdfWriter.getInstance(document, response.getOutputStream());
document.open();
ByteArrayInputStream bis
    = new ByteArrayInputStream(htmlSource.toString().getBytes());
XMLWorkerHelper.getInstance().parseXHtml(writer, document, bis);
document.close();
```

With this code, I'm able to generate PDF, but I would like to add a CSS file while generating PDF.

Posted on StackOverflow on [Jul 16, 2014](#)⁷⁴ by [Yella Goud](#)⁷⁵

Please take a look at the [ParseHtmlTable](#)⁷⁶ example. In this example, we have HTML stored in a `StringBuilder` object and some CSS stored in a `String`. In my example, I convert the `sb` object and the CSS object to an `InputStream`. If you have files with the HTML and the CSS, you could easily use a `FileInputStream`.

Once you have an `InputStream` for the HTML and the CSS, you can use this code:

```
// CSS
CSSResolver cssResolver = new StyleAttrCSSResolver();
CssFile cssFile = XMLWorkerHelper.getCSS(new ByteArrayInputStream(CSS.getBytes()\
));
cssResolver.addCss(cssFile);
// HTML
HtmlPipelineContext htmlContext = new HtmlPipelineContext(null);
htmlContext.setTagFactory(Tags.getHtmlTagProcessorFactory());
// Pipelines
PdfWriterPipeline pdf = new PdfWriterPipeline(document, writer);
HtmlPipeline html = new HtmlPipeline(htmlContext, pdf);
```

⁷⁴<http://stackoverflow.com/questions/24777549/how-to-add-external-css-while-generating-pdf>

⁷⁵<http://stackoverflow.com/users/2436481/yella-goud>

⁷⁶<http://itextpdf.com/sandbox/xmlworker/ParseHtmlTable1>

```
CssResolverPipeline css = new CssResolverPipeline(cssResolver, html);
// XML Worker
XMLWorker worker = new XMLWorker(css, true);
XMLParser p = new XMLParser(worker);
p.parse(new ByteArrayInputStream(sb.toString().getBytes()));
```

Or, if you don't like all that code:

```
ByteArrayInputStream bis =
    new ByteArrayInputStream(htmlSource.toString().getBytes());
ByteArrayInputStream cis =
    new ByteArrayInputStream(cssSource.toString().getBytes());
XMLWorkerHelper.getInstance().parseXhtml(writer, document, bis, cis);
```

How to do HTML to XML conversion to generate closed tags?



When I try converting html to pdf using iText and XML Worker, I'm asked to give the closing tag for <hr> and
 tags. It works if I do this manually, but I don't want to add each closing tag manually. How can I do this in an automated way?

Posted on StackOverflow on Oct 30, 2014⁷⁷ by Kannu Verma⁷⁸

You are experiencing this problem because you are feeding HTML to iText's XML Worker. XML Worker requires XML, so you need to convert your HTML into XHTML.

There is an example on how to do this on the official iText site: [D00_XHTML](http://itextpdf.com/sandbox/xmlworker/D00_XHTML)⁷⁹

```
public static void tidyUp(String path) throws IOException {
    File html = new File(path);
    byte[] xhtml = Jsoup.parse(html, "US-ASCII").html().getBytes();
    File dir = new File("results/xml");
    dir.mkdirs();
    FileOutputStream fos = new FileOutputStream(new File(dir, html.getName()));
    fos.write(xhtml);
    fos.close();
}
```

⁷⁷<http://stackoverflow.com/questions/26652029/how-to-do-xml-to-html-conversion-to-generate-closed-tags>

⁷⁸<http://stackoverflow.com/users/4197576/kannu-verma>

⁷⁹http://itextpdf.com/sandbox/xmlworker/D00_XHTML

In this example, we get a path to an ordinary HTML file (similar to what you have). We then use the Jsoup⁸⁰ library to parse the HTML into an XHTML byte array. In this example, we use that byte array to write an XHTML file to disk. You can use the byte array directly as input for XML Worker.

⁸⁰<http://jsoup.org/>

Inspect a PDF with iText

iText can tell you more about a PDF. What is the size of a page? Which measurement unit is used. All of these questions can be answered with a simple example using PdfReader.

Why do I get an “InvalidPdfException: PDF header signature not found”?



I have some code that reads pdf files. The code fails at the line :

```
iTextSharp.text.pdf.PRTokeniser.CheckPdfHeader() at  
iTextSharp.text.pdf.PdfReader.ReadPdf()
```

I know from other entries that this issue is coming from some invalid formatting in the PDF. However I'm not in a position to tell my users to redo their PDFs. Is there some other way around this issue, that can allow reading of the pdf despite this problem?

Posted on StackOverflow on [Sep 10, 2012](#)⁸¹ by [David Choi](#)⁸²

If a file doesn't start with %PDF- then there's nothing to fix: the file isn't a PDF file.

However, there may be another problem: maybe you're trying to access a file that has zero length due to some problem while creating the InputStream. Another context in which I've seen this happen, is a PDF loaded from a server, where the server returned a 404 message in HTML instead of a PDF file ;-)

Whenever that exception happens, you should store the bytes somewhere, and examine them. Without those bytes, nobody will be able to give you useful advice.

⁸¹<http://stackoverflow.com/questions/12357126/invalidpdfexception-pdf-header-signature-not-found>

⁸²<http://stackoverflow.com/users/1426199/david-choi>

How to Get PDF page width and height?



I have a PDF, and I want to get the width and height of each page using iTextSharp. This is what I have so far:

```
string source=@"D:\pdf\test.pdf";  
PdfReader reader = new PdfReader(source);
```

Posted on StackOverflow on [Aug 13, 2013](#)⁸³ by [Mohamed Kamal](#)⁸⁴

Do you want the MediaBox?

```
Rectangle mediabox = reader.GetPageSize(page);
```

Do you want the rotation?

```
int rotation = reader.GetPageRotation(page);
```

Do you want the combination of both?

```
Rectangle pagesize = reader.GetPageSizeWithRotation(page);
```

Do you want the CropBox?

```
Rectangle cropbox = reader.GetCropBox(page);
```

These are some methods that will give you information about the dimensions of a page. Most of them return an object of type `Rectangle` that has methods such as `getWidth()` and `getHeight()` to get the width and the height of the page. Other useful methods are `getLeft()` and `getRight()` as well as `getTop()` and `getBottom()`. These four methods return the x and y coordinates that define the boundaries of your page.

⁸³<http://stackoverflow.com/questions/18202660/how-to-get-pdf-page-width-and-height>

⁸⁴<http://stackoverflow.com/users/2677532/mohamed-kamal>

Manipulating existing PDFs

In this chapter, we're going to solve some problems when working with existing PDFs that need to be split into different files, merged or stamped. Usually, we are going to use a combination of `PdfReader` to read the document and `PdfStamper`, `PdfCopy` or `PdfSmartCopy` to create a new PDF. Note that we'll skip filling out interactive forms for now. We'll deal with `AcroForm` and `XFA` technology in the next chapter.

How to update a PDF without creating a new PDF?



I need to change the value of a field in an existing PDF file. I am using `PdfReader`, `PdfStamper` and `AcroFields` and that's working fine. But, in doing so, it is required to create a new PDF and I would like the change to be reflected in the existing PDF itself. If I am setting the destination filename to be the same as the original filename, then my application fails.

Posted on StackOverflow on [Apr 18, 2013](#)⁸⁵ by [tk2013](#)⁸⁶

You can't read a file and write to it simultaneously. Think of how Microsoft Word works: you can't open a Word document and write directly to it. Word always creates a temporary file, writes the changes to it, then replaces the original file with it, and then throws away the temporary file.

You can do that too:

- read the original file with `PdfReader`;
- create a temporary file for `PdfStamper`, and when you're done,
- replace the original file with the temporary file.

Or:

- read the original file into a `byte[]`,
- create `PdfReader` with this `byte[]`, and
- use the path to the original file for `PdfStamper`.

The latter option is more dangerous, as you'll lose the original file if you do something that causes an exception in `PdfStamper`. If I were you, I'd create a temporary file.

⁸⁵<http://stackoverflow.com/questions/16081831/using-itextsharp-stamper-required-to-update-in-the-same-pdf>

⁸⁶<http://stackoverflow.com/users/2239456/tk2013>

How to add an image watermark to a PDF file?



I'm using C# and iTextSharp to add a watermark to my PDF files:

```
Document document = new Document();
PdfReader pdfReader = new PdfReader(strFileLocation);
PdfStamper pdfStamper = new PdfStamper(pdfReader, new FileStream(strFileLocation\
Out, FileMode.Create, FileAccess.Write, FileShare.None));
iTextSharp.text.Image img = iTextSharp.text.Image.GetInstance(WatermarkLocation);
img.SetAbsolutePosition(100, 300);
PdfContentByte waterMark;
for (int pageIndex = 1; pageIndex <= pdfReader.NumberOfPages; pageIndex++) {
    waterMark = pdfStamper.GetOverContent(pageIndex);
    waterMark.AddImage(img);
}
pdfStamper.FormFlattening = true;
pdfStamper.Close();
```

It works fine, but my problem is that in some PDF files no watermark is added although the file size increased, any idea?

Posted on StackOverflow on [Jul 8, 2013](#)⁸⁷ by [Abady](#)⁸⁸

The fact that the file size increases is a good indication that the watermark is added. The main problem is that you're adding the watermark outside the visible area of the page. See my answer to the question *How to position text relative to page using iText?*

You need something like this:

```
Rectangle pagesize = reader.getCropBox(pageIndex);
if (pagesize == null)
    pagesize = reader.getMediaBox(pageIndex);
img.SetAbsolutePosition(
    pagesize.GetLeft(),
    pagesize.GetBottom());
```

That is: if you want to add the image in the lower-left corner of the page. You can add an offset, but make sure the offset in the x direction doesn't exceed the width of the page, and the offset in the y direction doesn't exceed the height of the page.

⁸⁷<http://stackoverflow.com/questions/17522965/how-to-add-a-watermark-to-a-pdf-file>

⁸⁸<http://stackoverflow.com/users/1450667/abady>

Why does the function to concatenate / merge PDFs cause issues in some cases?



I'm using the following code to merge PDFs together using iText:

```
public static void concatenatePdfs(List<File> listOfPdfFiles, File outputFile)
    throws DocumentException, IOException {
    Document document = new Document();
    FileOutputStream outputStream = new FileOutputStream(outputFile);
    PdfWriter writer = PdfWriter.getInstance(document, outputStream);
    document.open();
    PdfContentByte cb = writer.getDirectContent();
    for (File inFile : listOfPdfFiles) {
        PdfReader reader = new PdfReader(inFile.getAbsolutePath());
        for (int i = 1; i <= reader.getNumberOfPages(); i++) {
            document.newPage();
            PdfImportedPage page = writer.getImportedPage(reader, i);
            cb.addTemplate(page, 0, 0);
        }
    }
    document.close();
}
```

This usually works great! But once and a while, it's rotating some of the pages by 90 degrees? Anyone ever have this happen?

Posted on StackOverflow on [Apr 14, 2014](http://stackoverflow.com/questions/23062345/function-that-can-use-itext-to-concatenate-merge-pdfs-together-causing-some)⁸⁹ by [Nicholas DiPiazza](http://stackoverflow.com/users/1174024/nicholas-dipiazza)⁹⁰

There are errors once in a while because you are using the wrong method to concatenate documents. You should not use PdfWriter to concatenate (or merge) PDF documents. That is wrong because:

- You completely ignore the page size of the pages in the original document (you assume they are all of size A4),
- You ignore page boundaries such as the crop box (if present),
- **You ignore the rotation value stored in the page dictionary,**
- You throw away all interactivity that is present in the original document, and so on.

Concatenating PDFs is done using PdfCopy, see for instance:

⁸⁹<http://stackoverflow.com/questions/23062345/function-that-can-use-itext-to-concatenate-merge-pdfs-together-causing-some>

⁹⁰<http://stackoverflow.com/users/1174024/nicholas-dipiazza>

```
Document document = new Document();
PdfCopy copy = new PdfSmartCopy(document, new FileOutputStream(dest));
document.open();
PdfReader reader;
String line = br.readLine();
// loop over readers
    // add the PDF to PdfCopy
    reader = new PdfReader(baos.toByteArray());
    copy.addDocument(reader);
    reader.close();
// end loop
document.close();
```

If you are merging documents that contain fields, you need to add the following line:

```
copy.SetMergeFields();
```

How to merge documents correctly?



I would like to add a link to an existing pdf that jumps to a coordinate on another page.

I have the following problem when printing the PDF file after merge, the PDF documents get cut off. Sometimes this happens because the documents aren't 8.5 x 11 whereas the page size might be 11 x 17.

Is there some way to detect the page size and then use that same page size for those documents? Or, if not, is it possible to have it fit to page? This is my code:

```
Document document = new Document();
PdfWriter writer = PdfWriter.getInstance(document, outputStream);
document.open();
BaseFont bf = BaseFont.createFont(BaseFont.HELVETICA,
    BaseFont.CP1252, BaseFont.NOT_EMBEDDED);
PdfContentByte cb = writer.getDirectContent();
PdfImportedPage page;
int currentPageNumber = 0;
int pageOfCurrentReaderPDF = 0;
Iterator<PdfReader> iteratorPDFReader = readers.iterator();
while (iteratorPDFReader.hasNext()) {
    PdfReader pdfReader = iteratorPDFReader.next();
    while (pageOfCurrentReaderPDF < pdfReader.getNumberOfPages()) {
        Rectangle r = pdfReader.getPageSize(
            pdfReader.getPageN(pageOfCurrentReaderPDF + 1));
        if(r.getWidth()==792.0 && r.getHeight()==612.0)
            document.setPageSize(PageSize.A4.rotate());
        else
            document.setPageSize(PageSize.A4);
        document.newPage();
        pageOfCurrentReaderPDF++;
        currentPageNumber++;
        page = writer.getImportedPage(pdfReader, pageOfCurrentReaderPDF);
        cb.addTemplate(page, 0, 0);
        cb.beginText();
        cb.setFontAndSize(bf, 9);
        cb.showTextAligned(PdfContentByte.ALIGN_CENTER, ""
            + currentPageNumber + " of " + totalPages, 520, 5, 0);
        cb.endText();
    }
    pageOfCurrentReaderPDF = 0;
}
document.close();
```



Screen shot

Posted on StackOverflow on [Feb 12, 2014](#)⁹¹ by [Sumit Vaidya](#)⁹²

Using PdfWriter to merge documents is a bad idea. This has been explained on StackOverflow many times!

Merging documents is done using PdfCopy (or PdfSmartCopy).

If you need an example, see for instance the [FillFlattenMerge2](#)⁹³ example:

```
Document document = new Document();
PdfCopy copy = new PdfSmartCopy(document, new FileOutputStream(dest));
document.open();
PdfReader reader;
String line = br.readLine();
// loop over readers
// add the PDF to PdfCopy
reader = new PdfReader(baos.toByteArray());
copy.addDocument(reader);
```

⁹¹<http://stackoverflow.com/questions/21731439/pdf-page-cutting-through-itext-api>

⁹²<http://stackoverflow.com/users/2853641/sumit-vaidya>

⁹³<http://itextpdf.com/sandbox/acroforms/reporting/FillFlattenMerge2>

```

        reader.close();
    // end loop
    document.close();

```

In your case, you also need to add page numbers, you can do this in a second go, as is done in the [StampPageXofY⁹⁴](#) example:

```

PdfReader reader = new PdfReader(src);
int n = reader.getNumberOfPages();
PdfStamper stamper = new PdfStamper(reader, new FileOutputStream(dest));
PdfContentByte pagecontent;
for (int i = 0; i < n; ) {
    pagecontent = stamper.getOverContent(++i);
    ColumnText.showTextAligned(pagecontent, Element.ALIGN_RIGHT,
        new Phrase(String.format("page %s of %s", i, n)), 559, 806, 0);
}
stamper.close();
reader.close();

```

Or you can add them while merging, as is done in the [MergeWithToc⁹⁵](#) example.

```

Document document = new Document();
PdfCopy copy = new PdfCopy(document, new FileOutputStream(filename));
PageStamp stamp;
document.open();
int n;
int pageNo = 0;
PdfImportedPage page;
Chunk chunk;
for (Map.Entry<String, PdfReader> entry : filesToMerge.entrySet()) {
    n = entry.getValue().getNumberOfPages();
    for (int i = 0; i < n; ) {
        pageNo++;
        page = copy.getImportedPage(entry.getValue(), ++i);
        stamp = copy.createPageStamp(page);
        chunk = new Chunk(String.format("Page %d", pageNo));
        if (i == 1)
            chunk.setLocalDestination("p" + pageNo);
        ColumnText.showTextAligned(stamp.getUnderContent(),

```

⁹⁴<http://itextpdf.com/sandbox/stamper/StampPageXofY>

⁹⁵<http://itextpdf.com/sandbox/merge/MergeWithToc>

```
        Element.ALIGN_RIGHT, new Phrase(chunk),
        559, 810, 0);
    stamp.alterContents();
    copy.addPage(page);
}
}
document.close();
for (PdfReader r : filesToMerge.values()) {
    r.close();
}
reader.close();
```

I strongly advise against using `PdfWriter` to merge documents! As documented, you are throwing away all annotations by adding `PdfImportedPage` instances to a document using `addTemplate()`. This is typically not what you want. You're only making it harder on yourself if you insist on using that class. I don't understand why so many people use the wrong approach to merge documents. I blame the unofficial documentation for the popularity of this wrong approach.

Interactive forms

Is your form based on AcroForm technology or is it based on the XML Forms Architecture? That's a common counter-question you'll be confronted with when asking a question about forms. In any case, these answers should help you solving the most common problems with respect to forms.

How to fill out a pdf file programmatically? (AcroForm technology)



What techniques available to fill a pdf form automatically using external data and save them. I have to use data from a database to fill a template PDF and save a copy of it on disk with that data. Language and platform is not issue but it would be good if it can run on windows and Linux.

Posted on StackOverflow on [Jun 24, 2010](#) ⁹⁶ by [affan](#)⁹⁷

If your form is based on AcroForm technology, you can use iText to fill it out like this:

```
PdfReader reader = new PdfReader(src);
PdfStamper stamper = new PdfStamper(reader, new FileOutputStream(dest));
AcroFields form = stamper.getAcroFields();
form.setField(key, value);
stamper.setFormFlattening(true);
stamper.close();
reader.close();
```

In this snippet, `src` is the source of a PDF file (could be a path to a file, could be a `byte[]`) and `dest` is the path to the resulting PDF. The key corresponds with the name of a field in your template. The value corresponds with the value you want to fill in. If you want the form to keep its interactivity, you need to remove the line `stamper.setFormFlattening(true);` otherwise all form fields will be removed, resulting in a *flat* PDF.

⁹⁶<http://stackoverflow.com/questions/3108704/how-to-fill-out-a-pdf-file-programmatically>

⁹⁷<http://stackoverflow.com/users/109769/affan>

How to fill out a pdf file programmatically? (Dynamic XFA)



I have a dynamic XFA Form that I can fill out manually using Adobe Acrobat on my computer. Using iTextSharp I can read what the XFA XML data is and see the structure of the data. I am essentially trying to mimic that with iText using the following code:

```
PdfReader pdfReader = new PdfReader(sourceFilePath);
using (MemoryStream ms = new MemoryStream()) {
    using (PdfStamper stamper = new PdfStamper(pdfReader, ms)) {
        XfaForm xfaForm = new XfaForm(pdfReader);
        XmlDocument doc = new XmlDocument();
        doc.Load(replacementXmlFilePath);
        xfaForm.DomDocument = doc;
        xfaForm.Changed = true;
        XfaForm.SetXfa(xfaForm, stamper.Reader, stamper.Writer);
    }
    var bytes = ms.ToArray();
    File.WriteAllBytes(destinationFilePath, bytes);
}
```

For some reason this code doesn't work.

Posted on StackOverflow on [May 11, 2013](#) ⁹⁸ by [jon333](#)⁹⁹

This question was answered by the person who posted the question:



I found the issue. The replacement DomDocument needs to be the entire merged XML of the new document, not just the data or datasets portion.

I upvoted this answer, because it's not incorrect, but now that I think it's better to use the [example from the book](#)¹⁰⁰:

⁹⁸<http://stackoverflow.com/questions/16502427/how-can-i-set-xfa-data-in-a-static-xfa-form-in-itextsharp-and-get-it-to-save>

⁹⁹<http://stackoverflow.com/users/511518/jon333>

¹⁰⁰<http://itextpdf.com/examples/iia.php?id=165>

```
public byte[] ManipulatePdf(String src, String xml) {  
    PdfReader reader = new PdfReader(src);  
    using (MemoryStream ms = new MemoryStream()) {  
        using (PdfStamper stamper = new PdfStamper(reader, ms)) {  
            AcroFields form = stamper.AcroFields;  
            XfaForm xfa = form.Xfa;  
            xfa.FillXfaForm(XmlReader.Create(new StringReader(xml)));  
        }  
        return ms.ToArray();  
    }  
}
```

As you can see, it's not necessary to replace the whole XFA XML. If you use the `FillXfaForm` method, the data is sufficient.

How to fill XFA form using iText without breaking usage rights?



This is my code:

```
using (FileStream pdf = new FileStream("C:/test.pdf", FileMode.Open))
using (FileStream xml = new FileStream("C:/test.xml", FileMode.Open))
using (FileStream filledPdf = new FileStream("C:/test_f.pdf", FileMode.Create))
{
    PdfReader pdfReader = new PdfReader(pdf);
    PdfStamper stamper = new PdfStamper(pdfReader, filledPdf);
    stamper.AcroFields.Xfa.FillXfaForm(xml);
    stamper.Close();
    pdfReader.Close();
}
```

This code throws no exception and everything seems to be OK, but if I open filled pdf, Adobe Reader says something like this:

This document enabled extended features. This document was changed since it was created and using extended features isn't possible anymore.

If I choose xml manually by clicking 'Import data' from Adobe Reader, form is filled properly, so I guess there is no error in xml.

Posted on StackOverflow on Oct 29, 2014 ¹⁰¹ by [paldir](#)¹⁰²

You are not creating the PdfStamper object correctly. Use:

```
PdfStamper stamper = new PdfStamper(pdfReader, filledPdf, '\0', true)
```

In your code, you are not using PdfStamper in append mode. This means that iText will reorganize the different objects in your PDF. Usually that isn't a problem.

However: your PDF is Reader-enabled, which means that your PDF is digitally signed using a private key owned by Adobe. By reorganizing the objects inside the PDF, that signature is broken. This is made clear by the message you already mentioned:

This document enabled extended features. This document was changed since it was created and using extended features isn't possible anymore.

¹⁰¹<http://stackoverflow.com/questions/26629498/how-to-fill-xfa-form-using-itext>

¹⁰²<http://stackoverflow.com/users/4148435/paldir>

To avoid breaking the signature, you need to use PdfStamper in append mode. Instead of reorganizing the original content, iText will now keep the original file intact and append new content after the end of the original file.

Actions and annotations

All things interactive are discussed here. Except for forms, we've already covered these.

How to create a link to a specific page number?



I know how to target any text of any PDF page using code:

```
Anchor click = new Anchor("Click to go to Target");
click.Reference = "#target";
Paragraph p1 = new Paragraph();
p1.Add(click);
doc.Add(p1);
Anchor target = new Anchor("Target");
target.Name = "target";
doc.Add(target);
```

My question is how to target a page based on its number. For example if targeted page number is 6, clicking on the Anchor text should take to 6th page.

Posted on StackOverflow on [Feb 20, 2014](#)¹⁰³ by [Yogesh](#)¹⁰⁴

Instead of an Anchor, you need a Chunk. To this Chunk you need to add a PdfAction. The action needs to be a [gotoLocalPage\(\)](#)¹⁰⁵ action.

For instance:

```
Chunk chunk = New Chunk("Go to page 5");
PdfAction action = PdfAction.GotoLocalPage(5, New PdfDestination(0), writer);
chunk.SetAction(action);
```

¹⁰³<http://stackoverflow.com/questions/21907184/itextsharp-how-to-target-pdf-page-number>

¹⁰⁴<http://stackoverflow.com/users/532384/yogesh>

¹⁰⁵<http://api.itextpdf.com/itext/com/itextpdf/text/pdf/PdfAction.html#gotoLocalPage%28int,%20com.itextpdf.text.pdf.PdfDestination,%20com.itextpdf.text.pdf.PdfWriter%29>

How to insert a “linked rectangle” with iText?



I want to insert a hyperlink into an existing PDF at a position I know in advance: I already have the coordinates of a rectangle on a given page. I want to link this rectangle to another page of the same PDF (which I also know in advance). How do I achieve this?

Posted on StackOverflow on [Nov 7, 2013](#)¹⁰⁶ by [Hans Stricker](#)¹⁰⁷

Please take a look at the [AddLinkAnnotation](#)¹⁰⁸ example.

As you (should) already know (but you didn't show what you've already tried, which is kind of mandatory on StackOverflow), you can use PdfStamper to manipulate an existing PDF. Adding a rectangular link on one page to another page, is as simple as adding a *link annotation* to that page:

```
PdfReader reader = new PdfReader(src);
PdfStamper stamper = new PdfStamper(reader, new FileOutputStream(dest));
Rectangle linkLocation = new Rectangle(523, 770, 559, 806);
PdfDestination destination = new PdfDestination(PdfDestination.FIT);
PdfAnnotation link = PdfAnnotation.createLink(stamper.getWriter(),
    linkLocation, PdfAnnotation.HIGHLIGHT_INVERT,
    3, destination);
link.setBorder(new PdfBorderArray(0, 0, 0));
stamper.addAnnotation(link, 1);
stamper.close();
```

The link object is created using:

- the writer instance tied to the stamper,
- the rectangle (the position you say you know in advance,
- a highlighting option (pick one: HIGHLIGHT_NONE, HIGHLIGHT_INVERT, HIGHLIGHT_OUTLINE, HIGHLIGHT_PUSH, HIGHLIGHT_TOGGLE),
- the page you want to link to,
- a destination.

Once you have an instance of PdfAnnotation, you can add it to a specific page using the addAnnotation() method.

¹⁰⁶<http://stackoverflow.com/questions/22194844/inserting-a-linked-rectangle-with-itext>

¹⁰⁷<http://stackoverflow.com/users/363429/hans-stricker>

¹⁰⁸<http://itextpdf.com/sandbox/annotations/AddLinkAnnotation>

How to add a maps with a pointer to a PDF?



I am using java and iText to create a pdf. Is it possible to add a map with a pointer on it so the user will know where the starting point is?

Posted on StackOverflow on [Nov 6, 2014](#)¹⁰⁹ by [user2487493](#)¹¹⁰

What do you mean by “a map with a pointer so the user knows where the starting point is”? If you have a map in your PDF, you could add an annotation that looks like an arrow. Is that what you’re looking for?

Since you didn’t answer my counter-question added in comment, I’m providing two examples. If these are not what you’re looking for, you really should clarify your question.

Example 1: add a custom shape as extra content on top of a map

This is demonstrated in the [AddPointer](#)¹¹¹ example:

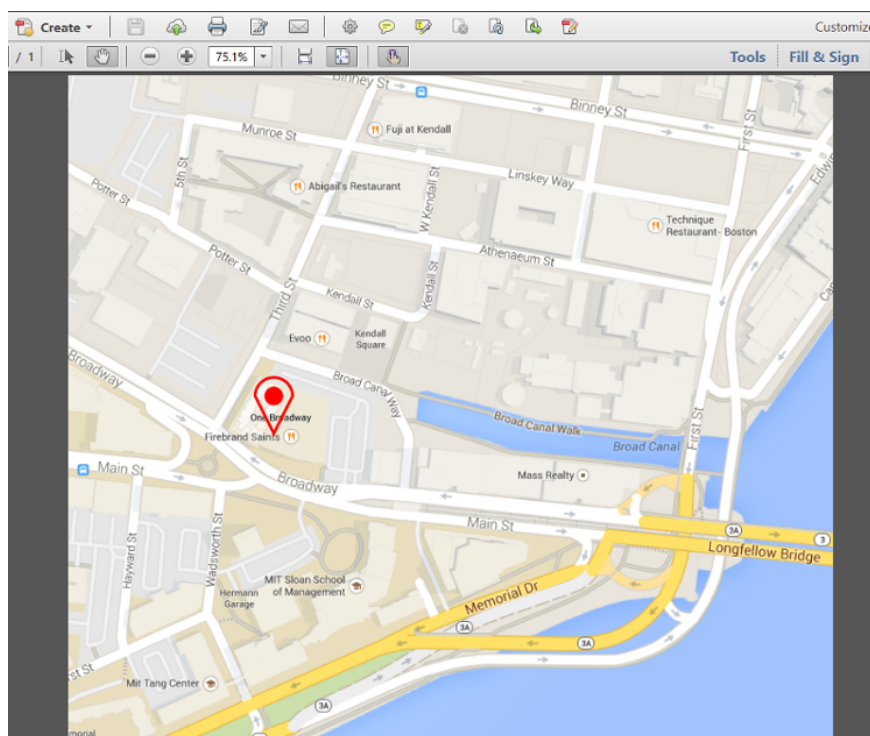
```
PdfContentByte canvas = writer.getDirectContent();
canvas.setColorStroke(BaseColor.RED);
canvas.setLineWidth(3);
canvas.moveTo(220, 330);
canvas.lineTo(240, 370);
canvas.arc(200, 350, 240, 390, 0, (float) 180);
canvas.lineTo(220, 330);
canvas.closePathStroke();
canvas.setColorFill(BaseColor.RED);
canvas.circle(220, 370, 10);
canvas.fill();
```

If we know the coordinates of the pointer, we can draw lines and curves that result in a the red pointer shown here (see the red pin near the Cambridge Innovation Center):

¹⁰⁹<http://stackoverflow.com/questions/26752663/adding-maps-at-itext-java>

¹¹⁰<http://stackoverflow.com/users/2487493/user2487493>

¹¹¹<http://itextpdf.com/sandbox/objects/AddPointer>



Map with a pin

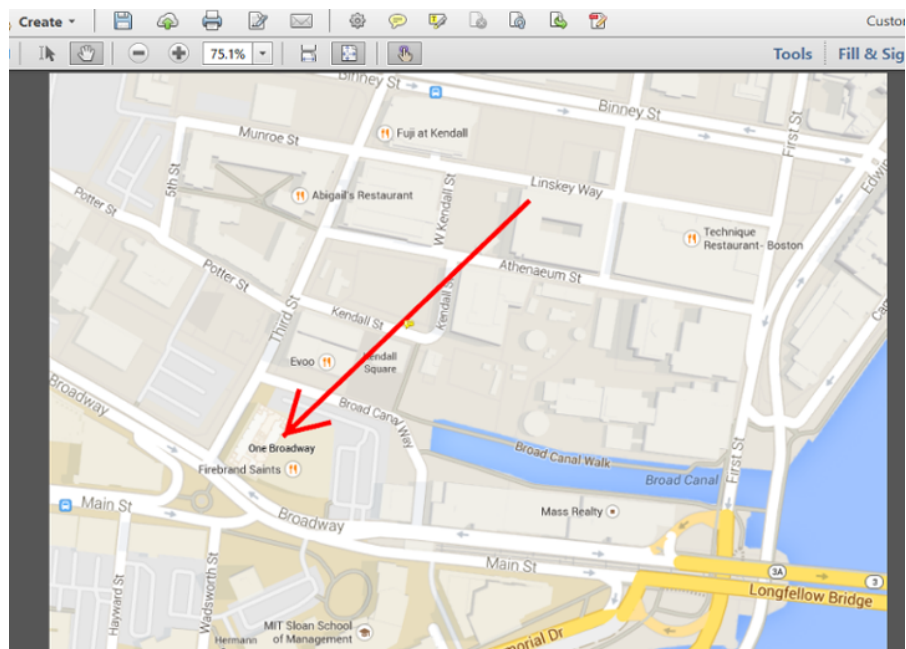
Example 2: add a line annotation on top of a map

This is demonstrated in the [AddPointerAnnotation](#)¹¹² example:

```
Rectangle rect = new Rectangle(220, 350, 475, 595);
PdfAnnotation annotation = PdfAnnotation.createLine(writer, rect,
    "Cambridge Innovation Center", 225, 355, 470, 590);
PdfArray le = new PdfArray();
le.add(new PdfName("OpenArrow"));
le.add(new PdfName("None"));
annotation.setTitle("You are here:");
annotation.setColor(BaseColor.RED);
annotation.setFlags(PdfAnnotation.FLAGS_PRINT);
annotation.setBorderStyle(
    new PdfBorderDictionary(5, PdfBorderDictionary.STYLE_SOLID));
annotation.put(new PdfName("LE"), le);
annotation.put(new PdfName("IT"), new PdfName("LineArrow"));
writer.addAnnotation(annotation);
```

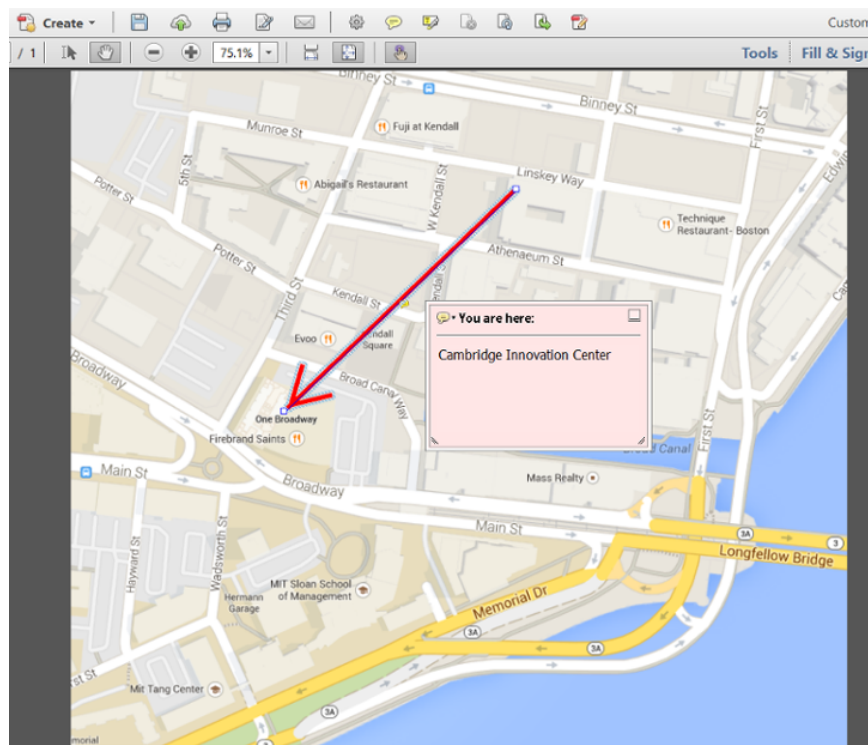
The result is an annotation (which isn't part of the real content, but part of an interactive layer on top of the real content):

¹¹²<http://itextpdf.com/sandbox/annotations/AddPointerAnnotation>



Map with an annotation

It is interactive in the sense that extra info is shown when the user clicks the annotation:



Map with an annotation that has been opened

Many other options are possible, but once again: your question wasn't entirely clear.

Extracting text from PDFs

iText can parse PDFs to extract the content of a page. As there are many different ways to create a PDF file, and as the text on a page usually isn't more than a bunch of characters drawn on a page, it's not trivial to extract text correctly.

How to read text from a specific position?



I have a problem using iTextSharp when reading data from PDF File. What I want to achieve is to read only specific part of PDF page (I want to only retrieve Address Information, which is located at constant position). I have seen using iTextSharp for reading all pages such as following:

```
StringBuilder text = new StringBuilder();
if (File.Exists(fileName)) {
    PdfReader pdfReader = new PdfReader(fileName);
    for (int page = 1; page <= pdfReader.NumberOfPages; page++) {
        ITextExtractionStrategy strategy = new SimpleTextExtractionStrategy();
        string currentText = PdfTextExtractor.GetTextFromPage(pdfReader, page, \
strategy);
        currentText = Encoding.UTF8.GetString(ASCIIEncoding.Convert(Encoding.De\
fault, Encoding.UTF8, Encoding.Default.GetBytes(currentText)));
        text.Append(currentText);
    }
    pdfReader.Close();
}
return text.ToString();
```

But how can I only restrict it to a specific location?

Posted on StackOverflow on Jun 12, 2014 ¹¹³ by Robert J. ¹¹⁴

You are using a SimpleTextExtractionStrategy instead of a LocationTextExtractionStrategy. If rect is a rectangle based on the coordinates of your address, you need:

¹¹³<http://stackoverflow.com/questions/24185066/itextsharp-read-from-specific-position>

¹¹⁴<http://stackoverflow.com/users/1539189/robert-j>

```
RenderFilter[] filter = {new RegionTextRenderFilter(rect)};
ITextExtractionStrategy strategy;
StringBuilder sb = new StringBuilder();
for (int i = 1; i <= reader.NumberOfPages; i++) {
    strategy = new FilteredTextRenderListener(new LocationTextExtractionStrategy\
(), filter);
    sb.AppendLine(PdfTextExtractor.GetTextFromPage(reader, i, strategy));
}
```

Now you'll get all the text snippets that intersect with the rect (so part of the text may be outside rect, iText doesn't cut text snippets in pieces).

Note that you can get the MediaBox of a page using:

```
Rectangle mediabox = reader.GetPageSize(pagenum);
```

The coordinate of the lower-left corner is `x = mediabox.Left` and `y = mediabox.Bottom`; the coordinate of the upper-right corner is `x = mediabox.Right` and `y = mediabox.Top`.

The values of `x` increase from left to right; the values of `y` increase from bottom to top. The unit of the measurement system in PDF is called "user unit". By default one user unit coincides with one point (this can change, but you won't find many PDFs with a different UserUnit value). In normal circumstances, 72 user units = 1 inch.

General questions about iText

These are some questions about iText in general. They aren't always about a technical problem, but they can be about a basic concept that is explained in more detail in one of the later chapters.

Unit Testing and Automated Testing Questions



I have been searching for some unit tests for the program iText with no luck. Is anyone aware of any such tests? Also, does anyone know if the developers use any automatic testing tools on iText, such as Jenkins?

Posted on StackOverflow on [Feb 21, 2014](#)¹¹⁵ by [user3338813](#)¹¹⁶

Internally, we use Jenkins as well as TeamCity.

We have two types of tests:

1. The tests that are added when new core functionality is added. You can find these where Maven expects them: each Maven project has a `src` directory with 2 sub directories: `main` and `test`. For instance: if you look at iText core, you'll find the released stuff [here](#)¹¹⁷ and the tests [here](#)¹¹⁸. Most of these tests are built on top of our [testutils](#)¹¹⁹.
2. The tests that are added when we get questions on SO or when we create code samples for the books. For these we use a generic test classes such as [GenericTest](#)¹²⁰ and [SandboxSampleWrapper](#)¹²¹. The wrapper class makes creating a test a no-brainer. All you need to do to turn a sample into a test is adding the `@WrapToTest` annotation. Well, actually there's more involved: you need to follow a specific pattern when writing a sample: always use `SRC` and `DEST` for source PDFs and resulting PDFs, always use a `createPdf()` or `manipulatePdf()` method, and always give the `cmp` file the same name as the `DEST` file prefixed with `cmp_`.

In both cases, you'll find PDF files of which the name starts with `cmp_`, see for instance the [cmpfiles folder](#)¹²² for the examples. In both cases, you'll find references to Ghostscript and a compare tool (you'll need to configure these).

¹¹⁵<http://stackoverflow.com/questions/21944424/itext-unit-testing-and-automated-testing-questions>

¹¹⁶<http://stackoverflow.com/users/3338813/user3338813>

¹¹⁷<http://sourceforge.net/p/itext/code/HEAD/tree/trunk/itext/src/main/>

¹¹⁸<http://sourceforge.net/p/itext/code/HEAD/tree/trunk/itext/src/test/>

¹¹⁹<http://sourceforge.net/p/itext/code/HEAD/tree/trunk/itext/src/main/java/com/itextpdf/testutils/>

¹²⁰<http://sourceforge.net/p/itext/code/HEAD/tree/trunk/sandbox/src/test/java/sandbox/GenericTest.java>

¹²¹<http://sourceforge.net/p/itext/code/HEAD/tree/trunk/sandbox/src/test/java/sandbox/SandboxSampleWrapper.java>

¹²²<http://sourceforge.net/p/itext/code/HEAD/tree/trunk/sandbox/cmpfiles/>

Why do I get a “Could not find PdfGraphics2D” error?



I have come across a runtime exception “Could not find class com.itextpdf.awt.PdfGraphics2D”. I wanted to create a PDF document from android device. For that I used iText library. This my code for creating PDF:

```
Document document = new Document();
PdfWriter.getInstance(document, outStream);
document.open();
document.add(new Paragraph(data));
document.close();
```

The code works fine. It is creating PDF successfully. but it gives me a runtime exception:

```
06-14 10:09:20.491: W/dalvikvm(764):
    Unable to resolve superclass of Lcom/itextpdf/awt/PdfGraphics2D; (1251)
06-14 10:09:20.491: W/dalvikvm(764):
    Link of class 'Lcom/itextpdf/awt/PdfGraphics2D;' failed
06-14 10:09:20.491: E/dalvikvm(764):
    Could not find class 'com.itextpdf.awt.PdfGraphics2D',
    referenced from method com.itextpdf.text.pdf.PdfContentByte.createGraphics
06-14 10:09:20.491: W/dalvikvm(764):
    VFY: unable to resolve new-instance 480
    (Lcom/itextpdf/awt/PdfGraphics2D;) in Lcom/itextpdf/text/pdf/PdfContentByte;
06-14 10:09:25.280: E/dalvikvm(764):
    Could not find class 'org.bouncycastle.cert.X509CertificateHolder',
    referenced from method com.itextpdf.text.pdf.PdfReader.readDecryptedDocObj
06-14 10:09:25.280:
    W/dalvikvm(764): VFY: unable to resolve new-instance 1612
    (Lorg/bouncycastle/cert/X509CertificateHolder;) in Lcom/itextpdf/text/pdf/Pd\
fReader;
```

I have done clean and build, added jar to libs folder and make it selected on order and export and i done lot of research for past 2 days. but nothing helped me. Based upon my knowledge there should be these possibilities: (1) the external jar isn't loaded properly, or (2) the class PdfGraphics2D extends java.awt.Graphics2D which is not available on Android.

Posted on StackOverflow on [Jun 14, 2013](#)¹²³ by [R9J](#)¹²⁴

¹²³<http://stackoverflow.com/questions/17102533/could-not-find-class-com-itextpdf-awt-pdfgraphics2d>

¹²⁴<http://stackoverflow.com/users/1912085/r9j>

You've discovered that PdfGraphics2D extends java.awt.Graphics2D, and as you already know Graphics2D is a forbidden class on Android.

You've also encountered problems related to BouncyCastle.

This tells me that you're using the Java version of iText instead of the [Android port](#)¹²⁵. In the Android port, we replaced BouncyCastle by SpongyCastle (as recommended when using encryption on Android) and we removed all references to forbidden classes (for instance in the awt and nio packages).

Please switch to using the Android port of iText. It is called [iTextG](#)¹²⁶.

Why do I get a "getOutputStream() has already been called for this response" error in JSP?



I'm using JDBC to fetch data from database and then I use iText to create a PDF file which can be downloaded on client machine. The application is coded in HTML/JSP and runs on Apache Tomcat.

I use the `response.getOutputStream` to create an output PDF file immediately. However, I get the following error:

`getOutputStream()` has already been called for this response

How can I generate a dynamic PDF file which can be downloaded by client machine?

Posted on StackOverflow on [Jun 13, 2013](#)¹²⁷ by [Sahil Sharma](#)¹²⁸

When you write JSP, you probably like white space and indentation, for instance:

¹²⁵<http://itextpdf.com/product/itextg>

¹²⁶<http://itextpdf.com/product/itextg>

¹²⁷<http://stackoverflow.com/questions/17083318/how-to-insert-image-in-pdf-using-itext-and-download-to-client-machine>

¹²⁸<http://stackoverflow.com/users/2367475/sahil-sharma>

```
<% //a line of code %>
<%
    // some more code
%>
<% // another line of code %>
<%
    response.getOutputStream();
%>
```

This will always cause the exception "getOutputStream() has already been called for this response" regardless if you're using iText or not. The getOutputStream() method was called the moment you introduced your first white space character in your JSP script.

To fix this, you need to remove all white space:

```
<% //a line of code %><%
    // some more code
%><% // another line of code %><%
    response.getOutputStream();
%>
```

Not a single character is accepted outside the <% and %> markers. As explained in the better JSP manuals, you shouldn't use JSP to create binary files. Why not? Because JSP introduces white space characters at arbitrary places in your binary file. That results in corrupt files. Use Servlets instead!

Legal questions

Although StackOverflow is a forum where developers post *technical* questions and *technical* questions *only*, we notice that some developers also want to know more about the legal aspects of using open source, more specifically: is it legal to use iText for free? Is there a license fee involved?

What is the difference between Lowagie and iText?



What is the difference between lowagie and iText. Is this just version difference or up-gradation to library. Which one recommended to be used.

Posted on StackOverflow on [Nov 22, 2012](#) ¹²⁹ by [Adeeb Cheulkar](#)¹³⁰

I am Lowagie, the lowagie you refer to. I'm the original author of iText and the author of the "iText in Action" books.

As explained in the [Sales FAQ](#)¹³¹, you should use the latest version of iText.

The differences between old versions of iText (iText 2.x.y dates from July 2009 or earlier) and newer versions of iText can be found in the [changelogs](#)¹³².

The 5.0.0 version had the following substantial changes:

- iText and iTextSharp started using the same version numbers
- the iText.jar is compiled using Java 5 (instead of with the JDK 1.4).
- The F/OSS license has been upgraded from MPL/LGPL to AGPL.
- The package names have changed from `com.lowagie` to `com.itextpdf`.
- The toolbox and RTF support have been removed: they are now in a separate project at SourceForge.

Numerous bugs have been fixed since July 2009. Functionality that makes your PDFs future-proof such as updates regarding new digital signature standards and new standards such as PDF/UA, PDF/A-2 and PDF/A-3 is only available in the more recent iText versions.

¹²⁹<http://stackoverflow.com/questions/13515210/difference-between-lowagie-and-itext>

¹³⁰<http://stackoverflow.com/users/1771109/adeeb-cheulkar>

¹³¹<http://itextpdf.com/salesfaq>

¹³²<http://itextpdf.com/changelog>

Can iText 2.1.7 or earlier be used commercially?



Can iText 2.1.7 (MPL/GPL) licence be used in commercial projects? I am not a legal guy but lots of discussion threads suggest that there is no issue using the earlier version (2.1.7) of iText in commercial projects as that version is bounded with terms & conditions governed by [MPL](#)¹³³/GPL license.

However, if we look at [iText's official website](#)¹³⁴, it says as the licence has been upgraded to AGPL licence, one has to buy the software before commercially using it. See the topic entitled *Why shouldn't I use iText 2.x (or iTextSharp 4.x)?*

LEGAL REASONS: Older versions of iText under the free model may contain code fragments that infringe other people's copyrights or intellectual property rights. iText Software Group has done a significant investment in identifying and eliminating all those cases as of version 5.1. which is one of the reason why it is now a paying commercial version. We do not recommend the use of versions prior to 5.1 for commercial projects as your company could be liable for copyright or IP infringements.

Of course, this seems a warning only. Discouragement of not using iText with earlier version due to Technical reasons could be understood but Legal reasons are not worth. What about the commercial projects who have been using iText 2.1.7 before the licence upgrade happened in iText? Would they now have to change their whole project planning because iText has now change his mind to not to distribute it commercially? Of course iText might has done significant investment in upgrading the version technically but what about the investment one might have done in his commercial project using iText 2.1.7 or earlier?

Please someone who understands legal implications of both the licences clarify this confusion. iText can use such warning to encourage its sale but is there anything substantial in such warning? Can one use iText with version 2.1.7 or earlier commercially? Comments from Mr. Bruno Lowagie, the original author of iText are highly appreciated.

Posted on StackOverflow on [Sep 6, 2014](#)¹³⁵ by [Devendra Sharma](#)¹³⁶

The first iText company was founded in 2008. The purpose of this company was to put all the Intellectual Property of the code into one legal entity. This was achieved by identifying [1.] every third party project from which code was borrowed, as well as [2.] every individual developer who contributed code.

¹³³<https://www.mozilla.org/MPL/1.1/>

¹³⁴<http://itextpdf.com/salesfaq>

¹³⁵<http://stackoverflow.com/questions/25696851/can-itext-2-1-7-or-earlier-can-be-used-commercially>

¹³⁶<http://stackoverflow.com/users/2881228/devendra-sharma>

[1.] Some code snippets were borrowed from projects with an ambiguous license. For instance: we had a snippet that was released under Sun's Example License (which allowed us to use the code), but in the comment section of the class, it said that the code was proprietary to SUN (which prevented us to use the code). Which of both prevailed? Being an ignorant developer at that time, I thought the Example License was the one I could use, just like some people claim that you can use iText 2.1.7 today. Lawyers however, disagreed: they said that the most strict license was the valid one.

We solved these problems by (1) asking permission to use code with ambiguous licenses, (2) refactoring code if we didn't get permission, (3) removing code we couldn't refactor.

We did the same with contributions from individual developers.

[2.] The IP from individual developers was transferred to iText Group NV (formerly known as 1T3XT BVBA) by asking every developer who contributed 20 lines of code or more to sign a Contributor License Agreement.

Two problems arose:

1. Individual developers could not be reached. For example: we dropped the RTF package completely because we couldn't find a couple of the core developers of the RTF functionality.
2. In a couple of cases, we had to negotiate about the CLA. For example: one company didn't like the CLA. Instead, this company released the contribution of its employees under an MIT license, so that we could use it anyway. Another organization was really slow in agreeing with the CLA. It took us until September 2009 before we received formal approval. Only after this approval, we switched to the AGPL. I can't disclose the document (it was different from the CLA), nor the name of the organization (I hope I don't break the NDA just by writing this). I can only say that we only had full coverage of the code base after that document was signed.

Ignorant developers claim that the LGPL/MPL header "protects" them, but what if some proprietary code was accidentally added to a class with such a header? Does this make that proprietary code "available under the MPL/LGPL"? If it did, it would be sufficient to take proprietary code, add an MPL/LGPL header and publish it. Doing this on purpose would be illegal. Doing this out of ignorance can be pardoned if there is a willingness to fix the issue.

In the early years of open source, it did occur that proprietary code got mixed into an open source project by accident. At iText, we have invested a lot of time and effort into cleaning up the code base. Since that exercise, we are very disciplined with respect to code contributions. This is one of the core tasks of a professional open source company.

After we fixed all the issues, we removed all copies of those old iText versions from our servers to make sure we were in the clear. If a company decides to use some rogue version of iText 2.1.7 that is outside of our control, this company does so **willingly and knowingly**, in other words: **at its own risk!** There is no way such a company can claim: *"We didn't know there was a possible IP issue with the code."*

If you want to use iText 2.1.7, you need to do the exercise we have done between 2007-2009 at your own expense. This will cost you more than the price of a license. For instance: the individual

developers gave permission to iText Group NV to do business with iText, but will they give that permission to you? How will you identify those individual developers?

Moreover: iText 2.1.7 dates from July 2009, meaning that it is more than 5 years old. Many bugs have been fixed since that date. Should you knowingly introduce those bugs into the code base of your customer, then your customer may claim that you had an alternative: you could have used a more recent version of iText...

As for your question “*what about the investment one might have done in his commercial project using iText 2.1.7 or earlier?*” That investment must have been done at least 3 years ago, because we’ve been informing people that they should upgrade for at least that long. Upgrading to a recent version is an investment that should be categorized as a maintenance cost. It should be an affordable cost because whoever has been using iText 2.1.7 for that long in a commercial project has been making money thanks to iText for that long. Claiming that “iText has *now* changed its mind” is not correct unless *now* is marked as a synonym of *5 years ago* in your dictionary.

To be continued...

All the answers and the many code samples I have provided on StackOverflow were written in the hope that they are helpful. I leave it up to the reader of this “Best of” selection to decide whether or not *“I’m kind of a dick”* as the people who down-voted some of my answers claim. I just love answering questions, and where love is involved, there’s also pain, for instance the pain if the love isn’t returned. Some people seem to make a sport out of it to beg for an answer and then to thank me by saying: we’re never going to be a customer of iText Software. Somehow that doesn’t compute. I hope you understand.

Obviously, a book like this is never finished. New questions about iText are posted every day. I expect that this book will grow over the years. Some answers may become obsolete, some new functionality will require more clarification. This clarification may be provided in the form of an answer to a new question, or as a topic in one of the other upcoming books:

- [The ABC of PDF¹³⁷](#)
- [Create your PDFs with iText¹³⁸](#)
- [Update your PDFs with iText¹³⁹](#)
- [Sign your PDFs with iText¹⁴⁰](#)

All of these books are available for free. No donation is expected.

¹³⁷https://leanpub.com/itext_pdfabce

¹³⁸https://leanpub.com/itext_pdfcreate

¹³⁹https://leanpub.com/itext_pdfupdate

¹⁴⁰https://leanpub.com/itext_pdfsign