AcroTeX.Net

DigiCap Pro

Captioning Digital Images

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www.acrotex.net
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1. Introduction

The digicap-pro package came about several years ago (2008); at that time, I was impressed by the tv guide layout of photos with captions. The captions were laid on top of the photos using a transparent box. I also saw this type of photo-caption layout on www.mlb.com. This photo-caption layout inspired to reproduce for LaTeX/PDF.

This package provides commands for simply displaying the digital photo with caption; the caption can be displayed as a rollover, that is, the caption is not visible until the user rolls over the photo using a mouse.

Another component of the package is the display of collections of photos and captions. The www.mlb.com has (or had) thumbnails of the photos, by clicking the thumb, the photo with caption would appear. Nowadays, this is done through the magic of Adobe Flash, which gives clever transitions of the thumbs and photos. This package does not do Adobe Flash, but perhaps a future edition of this package will incorporate Flash/Flex using my `rmannot` package.

2. Requirements

This package belongs to the high-class family of AeB Pro, hence, the major requirement of this package is that the PDF be created using **Acrobat Distiller**, see Section 2.2 for details.

2.1. LaTeX Package Requirements

The package builds on packages developed as part of AeB or AeB Pro:

- aeb_pro: supplies support for layers and JavaScript management of layers
- graphicxbox: places a graphic as the background of a box
- opacity-pro: creates the transparency effects
- eforms: use to create Acrobat form buttons with a roll-over action to make roll-over captions visible or hidden.
- grahicxsp: used with the commands input with the `design1` option. See the section entitled 'Displaying Collections of Digital Photos' on page 8.

The graphicx package is also used to import digital photos, or other graphics.

2.2. PDF Creator Requirements

dvips
dvipsone

The big restriction on this package is the requirement to use **Acrobat Distiller** (version 5.0, or version 6.0 for transparency). The package was developed using Acrobat Distiller 8.1. The package supports the creation of Postscript using dvips and dvipsone. These "drivers" are defined through the required package aeb_pro.

2.3. Transparency Requirements

To get the transparency effect, **Acrobat Distiller** version 6.0 or later is required. The default setting of the distiller does not support the **SetTransparency** pdfmark; it is necessary to edit the `.joboptions` file.

The procedure for editing `.joboptions` to support transparency is as follows:

1. Start **Acrobat Distiller**
2. From the Default Settings list, select the setting you want to edit, usually, this will be the `Standard` job options.
3. Select `Settings > Edit Adobe PDF Settings (Ctrl+E)` from the distiller menu.
4. Click the `SaveAs` button at the bottom of the `Adobe PDF Settings` dialog box. Save your .jobsettings file under a new name, say `Standard_transparency` and make a note of where the distiller saves this file.
5. With your favorite text editor, navigate to the folder where you saved your new `.joboptions` file, and open it in your editor.
6. Look for the line that says `/AllowTransparency false`, and change this to read `/AllowTransparency true`. Save the changes and close the file.
7. Use this `.joboptions` file, `Standard_transparency` for example, whenever you distill with transparency pdfmarks. If your LaTeX file uses transparency, and you are using a `.joboptions` file with `/AllowTransparency false`, distillation will fail and the distiller log should say

```
%%[Error: The Postscript contains Transparency pdfmark, job aborted.]%%
%%[ /AllowTransparency is false in job option settings.]%%
%%[ Error: undefined; OffendingCommand: pdfmark;
    ErrorInfo: Transparency Group ]%%
```

This suggests that you should use your `.joboptions` file that supports transparency!

Note: The required package opacity-pro comes with an Acrobat Distiller job options file named `Standard_transparency.joboptions`. Instead of following the above instructions you can simply drop this file in a place where Distiller expects to find `.joboptions` files.[1]

3. Options of this Package

`display1` Currently, there is only one option for this package, it is `display1`. As noted in the introduction, this package provides basic commands for showing digital pictures with

[1] Go to `Settings > Edit Adobe PDF Settings ...` in the Distiller application window, then click the SaveAs button. A **Save Adobe PDF Settings As** dialog box opens, and you can then see where Distiller likes to save its `.joboptions` file. Copy the provided `.joboptions` to the folder and restart Distiller, the `Standard_transparency` should now be visible in the drop down Default Settings list.

captions, and for displaying collections of photos using thumbnail activation. When `display1` is specified, additional code input to support photo displays. Future version of this package may have additional display formats.

4. The DigiCap Pro Commands

In this section we present the new commands defined in the digicap-pro package, and as a bonus, we also present, Section 4.2, a series of commands to create a photo presentation.

4.1. Digital Photos with Captions

For the mere captioning of a photo, there is one major command for this package, all other commands (presented in Section 4.2) are built around this one:

`\digiCap*[⟨pos-kvs⟩]{⟨path⟩}[⟨design-kvs⟩]{⟨caption⟩}`

The star-option. If * is present, the caption becomes a rollover caption.

Optional key-values for the first parameter (⟨*pos-kvs*⟩). This set of parameters control the placement of the caption on top of the background picture. There is also a parameter to set the options for the `\includegraphics` command, and one to set the form field name, in the case of a rollover.

`outerboxsep`: The space the surrounds the boundary of the caption, the default is `3pt`

`vcaption`: The vertical placement of the caption on the background graphic, possible values are `b`, `c`, and `t`. The default is `b`.

`hcaption`: The horizontal placement of the caption on the background graphic, possible values are `l`, `c`, and `r`. The default is `c`.

`inclgraphicx`: The value of this key is a list of key-value pairs that are passed on to the underlying `\includegraphics` command.

`rollovername`: The basename of the push button form field that is used for a rollover effect. This command is used only with `\digiCap*`, ignored otherwise. For the `\digiCap*` command, this key is optional, if not present, this package supplies a name.

Second parameter, required (⟨*path*⟩). The second parameter is the path to the digital photo (or graphic) to be used as a background to this box.

Optional key-values for the third parameter (⟨*design-kvs*⟩). These are additional options for the design of the box that contains the caption.

`borderwidth`: The border width. The default is `2pt`

`fboxsep`: The space between the border and the text, the default is `6pt`

`width:` The width of `\parbox`, the default is `\linewidth`

`bordercolor`: A named color of border, the default is `black`. A special value of `nocolor` is recognized, in that case, no color is applied.

`bgcolor`: A named color of background, the default is `white`. A special value of `nocolor` is recognized, in that case, no color is applied.

`borderop`: A number type, the opacity for border $0 \le$ number ≤ 1, the default is .5

`bgop`: A number type, the opacity for background $0 \le$ number ≤ 1, the default is .5

`textop`: A number type, the opacity for text $0 \le$ number ≤ 1, the default is 1

`borderblendmode`: The blend mode for the border, the default is `Normal`

`bgblendmode`: The blend mode for the background, the default is `Normal`

Fourth parameter, required. The text of the caption.

The following is a sample of examples, see the demo file `digicap-tst.tex` for extensive examples of `\digiCap` with its options.

Lee ices A's win streak with an eight-inning gem

Lee ices A's win streak with an eight-inning gem Cliff Lee retired 14 straight in a 7-1 Indians win over the A's on Sunday. Grady Sizemore had three RBIs as Cleveland halted its three-game skid.

The topmost photo has a static caption at the bottom of the photo, the photo below it has a rollover caption, the caption box has been designed with a border. The verbatim listing of these two images are

```
1  \digiCap[inclgraphicx={width=.75\linewidth},
2      vcaption=b,hcaption=c,outerboxsep=0pt]
3      {\expath/digis/IiFUCdIQ}[borderwidth=0bp,fboxsep=10bp,bordercolor=nocolor,
4      bgop=.7]{\parskip6pt\bfseries
5      \makebox[\linewidth]{\textcolor{red}{Lee ices A's win
6      streak with an eight-inning gem}}\\\relax\footnotesize
7      Lee ices A's ... as Cleveland halted its three-game skid.}
```

In line (1), the `inclgraphicx` key sets the width of the graphic at `.75\linewidth`. The first optional option continues on line (2), we set `vcaption` and `hcaption` to the defaults (hence need not have appeared). The second required parameter is in line (3). The third (optional) parameter also begins in line (3) and continues onto line (4): among the options is setting the `bordercolor` to `nocolor` and the `bgop` (background opacity) to .7. The fourth required parameter is begins in line (4) and goes through line (7). A title line is put in red, and the caption text set in a smaller size font.

The second photo has code,

```
1  \digiCap*[inclgraphicx={width=.75\linewidth},vcaption=c,hcaption=l,
2      outerboxsep=0pt]{\expath/digis/IiFUCdIQ}[borderwidth=4bp,fboxsep=10bp,
3      bordercolor=blue,bgop=.7]{\parskip6pt\bfseries
4      \makebox[\linewidth]{\textcolor{webblue}{Lee ices A's win
5      streak with an eight-inning gem}}\\\relax\footnotesize
6      Lee ices A's ... Cleveland halted its three-game skid.}
```

We use `\digiCap*`, the * signals that this digital photo should have a rollover caption. We set `vcaption` to `c`, which centers the caption vertically. In the third (optional) parameter, we set the `borderwidth` to 4bp, `fboxsep` to 10bp, `bordercolor` to blue and `bgop` to .7.

Again, many examples appear in `digicap-tst.tex`.

• Using graphicxsp Package

For normal uses, `\digiCap` is used to display several *different* photos, photos are not repeatedly used. Each time a photo is displayed, it is imported into the document using the command `\includegrpahics`, if you show the same photo five times, the same graphic file is imported five times. This most certainly increases the file size.

If the graphicxsp package is also used (required for the commands of the next section), photos can be embedded in the document and used multiple times without significantly increasing the size of the file size. The digicap-pro package allows for the use of the graphicxsp package, naturally.

The two instances of the Cliff Lee photo seen earlier is an example. In the verbatim code, I deleted one key-value pair. The true verbatim code is

```
1  \digiCap[inclgraphicx={name=clifflee,width=.75\linewidth},vcaption=b,
2      hcaption=c,outerboxsep=0pt]{\expath/digis/IiFUCdIQ}[borderwidth=0bp,
3      fboxsep=10bp,bordercolor=nocolor,bgop=.7]{\parskip6pt\bfseries
4      \makebox[\linewidth]{\textcolor{red}{Lee ices A's win
5      streak with an eight-inning gem}}\\\relax\footnotesize
6      Lee ices A's win ... as Cleveland halted its three-game skid.}\\[1ex]
```

The new key-value pair is shown in red in line (1). Within the `inclgraphicx` key we specify the symbolic name for the graphic, `name=clifflee`. In the preamble of this document, the follow code appears: `\embedEPS{clifflee}{\expath/digis/IiFUCdIQ}` (the `\expath` expands to the path to the folder containing the `digis` folder).

The file `digicap-embed.tex` contains an example of this embedding.

4.2. Displaying Collections of Digital Photos

Now, if you want to display a number of photos, you can either place one or two per page, or you can present all photos on the same page, the latter is the approach we take here.

For each photo, we create a smaller version (thumbnail) and set it as a button appearance. When you rollover the button, the larger version of the photo makes its appearance in the photo viewing area. The code for setting up the thumbnail layout is contained in additional code that is input with the `design1` option.

There are three demo files for this section contained in the `photoalbum` folder:

`eastern_trip_por.tex`

`eastern_trip_ls.tex`

`eastern_trip_ls_2pg.tex`

These three present the same collection of photos with different layouts for the thumbnails.

• The Main Controls

We describe the commands in the order in which they appear in the document.

```
\PicsThisDoc
{%
  {⟨name1⟩}{⟨path1⟩}{⟨title1⟩}{⟨caption1⟩},
  ...
  ...
  {⟨namen⟩}{⟨pathn⟩}{⟨titlen⟩}{⟨captionn⟩}
}
```

In the preamble of the document, the `\PicsThisDoc` commands declares the pictures to be displayed in this document. The arguments for this command are a comma-delimited list, each item in the list consists of four parameters, as described below:

- ⟨*name*⟩: a symbolic name that references this picture
- ⟨*path*⟩: the path to the photo (or a any graphic), in the EPS format
- ⟨*title*⟩: a title for this photo
- ⟨*caption*⟩: a caption, or description, of this photo

Within the ⟨*caption*⟩, the commands `\graphicHeight` and `\graphicWidth` are defined. Their values are the height and the width of the (scaled) photo. An example of usage for `\graphicHeight` can be found in the demo file `digicap-tst.tex`.

The order the pictures are presented is set by the following command, also placed in the body of the document before the insertion of the pictures.

`\presentationOrder{⟨name1⟩,⟨name2⟩,...,⟨namen⟩}`

The names are defined by the `\PicsThisDoc` command.

`\digiDisplaySpace{⟨height⟩}{⟨width⟩}`

Command Description: Reads the information defined by `\presentationOrder` and inserts the photos at the current location. The photos are placed in a `\parbox` with width of ⟨*height*⟩ and height of ⟨*width*⟩.

`\insertCaptions`

Command Description: Places the caption at the current location to the current photo.

`\insertThumbs{⟨rows⟩}{⟨columns⟩}`

Lays out a `tabular` environment with ⟨*rows*⟩ and ⟨*columns*⟩; within this `tabular` environment, the thumbnails are inserted.

The commands `\digiDisplaySpace`, `\insertCaptions`, and `\insertCaptions` placed on the page following `\presentationOrder`, and can be arranged anyway desired; the three demo files give examples of different arrangements.

• Additional Controls

The `\digiDisplaySpace` command ultimately uses `\digiCap` to display the photos, but `\digiCap` has two optional arguments, labeled ⟨*pos-kvs*⟩ and ⟨*design-kvs*⟩ in the description of `\digiCap`, page 5, that cannot be accessed. The digicap-pro package provides a way of setting these option globally, and for a particular photo.

```
\dcFirstOpt[⟨name⟩]{⟨pos-kvs⟩}
\dcSecondOpt[⟨name⟩]{⟨design-kvs⟩}
```

Command Description: `\dcFirstOpt` inserts its key-value pairs into the first optional argument of `\digiCap`, the one labeled ⟨*pos-kvs*⟩. See Section 4.1, page 5, for a list of these options. When the key-values are passed without a first argument, the key-values are applied to all photos; when the optional argument is specified (⟨*name*⟩ is a symbolic name of one of the photos in the collection defined by `\PicsThisDoc`), the key-value pairs are applied only to that photo. For example,

```
\dcFirstOpt{vcaption=b,hcaption=c,outerboxsep=0pt}
\dcFirstOpt[p1]{vcaption=t,hcaption=c,outerboxsep=0pt}
```

The first line sets the global options for all the photos (this is actually the package default, and need not be specified here), the second line is the specification for the photo labeled `p1`. To repeat, the default definition for `\dcFirstOpt` is

```
\dcFirstOpt{vcaption=b,hcaption=c,outerboxsep=0pt}
```

Similar comments are made for `\dcSecondOpt` which sets the second optional argument of `\digiCap` (which is actually the third parameter of that command), see, again, Section 4.1, page 5, for a listing in the paragraph titled **Optional key-values for the third parameter**. The default setting for `\dcSecondOpt` is

```
\dcSecondOpt{borderwidth=0bp,fboxsep=10bp,
    bordercolor=nocolor,bgop=.7}
```

The default behavior is that the caption appears with the photo. The `\digiCap` command does have an option for making the caption itself into a rollover; when the user rolls over the photo, the caption appears. To activate this feature of `\digiCap` use the command `\useRollovers` before the `\presentationOrder`.

```
\useRollovers  \noRollovers
```

You can turn off the roll over feature with `\noRollovers`. It is possible to have some of the photos displayed on one page, and the others on another page. The rollovers can be activated for one set of pictures, and deactivated for the other. (For photo displays over two pages, see the demo file `eastern_trip_ls_2pg.tex`.

Formatting the Long Caption The long caption is the text that accompanies the photo, and is overlaid on top of the photo using a "see through" box. `\longCapFmt` is used for globally formatting the caption. This formatting can changed locally from within the fourth parameter—the ⟨*caption*⟩ parameter—, see the syntax for `\PicsThisDoc`, at the beginning of this section on page 8. The default long caption formatting is `\longCapFmt{}`, but a declaration of `\longCapFmt{\bfseries}` puts all the captions in bold.

```
\longCapFmt{⟨format-declns⟩}
```

Formatting for the Short Captions The short captions, perhaps a better term might have been the title of the photo, are defined as the third parameter, the ⟨*title*⟩ parameter, (in the set of four) of `\PicsThisDoc`. Use `\shortCapFmt` to apply format declarations:

```
\shortCapFmt{⟨format-declns⟩}
```

The default definition for `\shortCapFmt` is

```
\shortCapFmt{\sffamily\bfseries\color{blue}}
```

Setting Appearance and Width of the Thumbs. The thumbnails are automatically generated by `\insertThumbs`, but `\insertThumbs` does not contain any controls over the appearance or width of the buttons created. For this reason, `\setThumbAppearances` and `\setWidthOfThumbs` are provided.

`\setThumbAppearances[⟨name⟩]{⟨ro-kvs⟩}`

Command Description: When the optional parameter is not present, the ⟨*ro-kvs*⟩ are taken a global key-value pairs, applying to all the thumbs. When ⟨*name*⟩ is passed, the key-value pairs are applied only to the thumb associated with ⟨*name*⟩. The key-value pairs themselves allow the document author to set the rollover attributes of the thumb, and to set the boundary color and width.

- `normalop`: The opacity of the normal appearance of the thumb, the default is .5.
- `rolloverop`: The opacity of the rollover appearance of the thumb, the default is 1.
- `downop`: The opacity of the down appearance of the thumb, the default is .3.
- `boundarywidth`: The boundary width of the unscaled digital photo. The default is 30 (points).
- `rgbcolor`: The RGB color of the boundary, a space delimited list of three numbers between 0 and 1. If the `xcolor` package is used, than you can use a named color for the value; for example, `rgbcolor=red`. There is no default, since, the default color is in CMYK color space.

  xcolor and named colors
- `cmykcolor`: The CMYK color of the boundary, a space delimited list of four numbers between 0 and 1. If the `xcolor` package is used, than you can use a named color for the value; for example, `cmykcolor=magenta`. The default is `0 0 1 0` (yellow).

  xcolor and named colors

The following code,

```
\setThumbAppearances[p1]{rgbcolor=1 0 0}  % or possibly rgbcolor=red
```

sets the border color to red of the thumbnail associated with the name `p1`; the other default values are still in effect.

The width of the thumbnails are calculated automatically, based on the number of columns and the linewidth of the tabular environment the thumbs are being laid out in. The `digicap-pro` package sets the width of the thumbs using `\setWidthOfThumbs`. The default setting is `\setWidthOfThumbs{0pt}`. If the width is set to 0pt (the default), the width of the thumbs are set dynamically using the formulas:

```
\setWidthOfThumbs{\linewidth/(\dc@maxCols)-\tabcolsep*2}
```

Here, \dc@maxCols is the number of columns declared in the second parameter of \insertThumbs. The calc package is used in this calculation. If the document author sets \setWidthOfThumbs to a length other than 0pt, this declared length is used as the width of the thumbs.

The width between rows of the tabular layout can be adjusted using command \addvspacetorows.

\addvspacetorows{⟨*length*⟩} (1ex)

The default of ⟨*length*⟩ is given in parentheses above.

4.3. The \opcolorbox Command

The \opcolorbox commands creates two color boxes, a larger one with a smaller one centered vertically and horizontally inside the larger one. Transparent options allow separate control over the opacity settings of the larger and smaller rectangle as well as the text that is written within the smaller rectangle.

The purpose of this \opcolorbox is to contain the caption of the digital photo, and is laid on top of the photo. The key-value pairs passed through the third (optional) parameter of \digiCap, are, in turn, passed on to \opcolorbox to create the underlying color box for the caption.

\opcolorbox[⟨*kvs*⟩]{⟨*text*⟩}

The optional parameter consists of key-value pairs, the same ones as for the second option parameter of \digiCap, see page 5. We reproduce these key-values here for your convenience:

Optional key-values for the first parameter

borderwidth: The border width. The default is 2pt

fboxsep: The space between the border and the text, the default is 6pt

width: The width of \parbox, the default is \linewidth

bordercolor: A named color of border, the default is black. A special value of nocolor is recognized, in that case, no color is applied.

bgcolor: A named color of background, the default is white. A special value of nocolor is recognized, in that case, no color is applied.

borderop: A number type, the opacity for border $0 \le$ number ≤ 1, the default is .5

bgop: A number type, the opacity for background $0 \le$ number ≤ 1, the default is .5

textop: A number type, the opacity for text $0 \le$ number ≤ 1, the default is 1

borderblendmode: The blend mode for the border, the default is Normal

`bgblendmode:` The blend mode for the background, the default is `Normal`

The second parameter ⟨*text*⟩ is the text that is to appear within the box.

A document author does not normally have a need to use `\opcolorbox`, the demo file `eastern_trip_ls_2pg.tex` demonstrates one possible use of this box.

Limitations of dvips. It appears that the **CA** entry is not obeyed when the PDF is distilled from a PS file created by dvips (Refer to the documentation for the opacity-pro package for a discussion of these entries). Therefore, only the **ca** entry is obeyed.[2] The setting of ⟨*ca*⟩ should be small enough to get discernable transparency, but not so much that the text is difficult to read. Recommendation: set ⟨*ca*⟩ to .7 or there abouts.

That's all for now, I simply must get back to my retirement. ☺

[2] The key that directly sets the **ca** entry is `textop`; however, the digicap-pro does the following: