

TUG 2023 (BONN)

**BEHIND THE
SCENES OF THE
GREAT TIKZLINGS
XMAS EXTRAVAGANZA**

ULRIKE & GERT FISCHER, CARLA MAGGI, PAULO CEREDA, SAMCARTER

A TIKZDUCKS PRODUCTION

GRAPHICS, ANIMATIONS, VIDEO AND SOUND

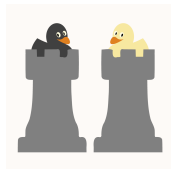
SAMCARTER



PAULO CEREDA



ULRIKE FISCHER



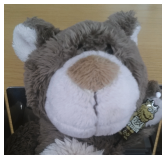
CARLA MAGGI



**STORYBOARD
GERT FISCHER**



**ASSISTANT
BÄR**



**CAST
LOADS OF TIKZLINGS**

MUSIC, SOUND AND LYRICS BY ARTHUR BROWN, PAULO CEREDA, VINCENT CRANE, GERT FISCHER, GERRY AND THE PACEMAKERS, FRANZ XAVER GRUBER, JIMI HENDRIX, PIERRE KARTNER, TOM KELLY, CINDY LAUPER, JOHN LENNON, GOFFREDO MAMELI, MICHELE NOVARO, FREDERICK OAKELEY, LUCIANO PAVAROTTI, GIACOMO PUCCINI, MIKLÓS RÓZSA, ROBERT SCHUMANN, BILLY STEINBERG, RICHARD STRAUSS, VANGELIS, JOHN FRANCIS WADE

How it started

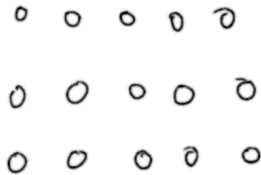
YES!



**Ulrike can make
a tikzducks video
for samcarter!**

Artful and detailed storyboards were created

15 Pirate Ducks



15 Men ... [A Bottle of Rum]

3 Ducks with Bagpipes





"Scotland the Brave"

Artful and detailed storyboards were created



Help will always be given to those who ask for it

Dear  Carla, dear  Paulo,

I think we should make a video for samcarter . . .

Do you think that this would a good idea and will you participate?



Ulrike




Well prepared for the task



- never tried it before
- I tried something but it doesn't work
- I have almost no experience with videos
- when everything fails, I will record my own screen
- the arara rule doesn't work
- it's the first time I use github


Many scenes were created



The announcement

Ulrik    @samcarter We want to ask you when you have some time. We have a surprise. It makes noises, so you shouldn't be in a conference. And a not too small screen would be good too.

Ulrik   @PauloCereda, @CarLaTeX, my husband and me 2:16 PM
have a christmas present for you. It is a bit early but some ducks are killed by the suspense and not so good at keeping secrets.

sam  @UlrikeFischer Oh, this is so gorgeous!!!!!!!!!!!!!!!!!!!! I love it!

The next year we got professional



samcarter joined the team



Let's get TeXnical...

Animation

Basic idea:

create a multipage document with incremental movement between pages

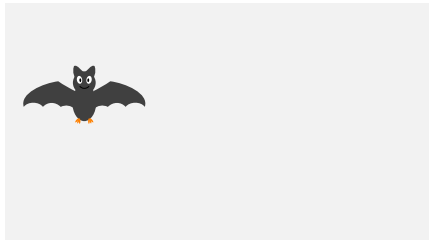
Many possible implementations, one possibility:

- beamer overlays for multipage document
- tikz for easy positioning

Source code available, e.g. <https://github.com/TikZlings/Extravaganza2022>

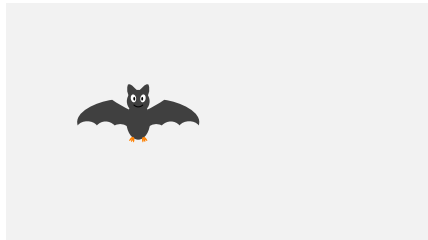
Animation example

```
\documentclass{beamer}
\usepackage{tikz}
\usetikzlibrary{tikzlings}
\begin{document}
  \begin{frame}
    \begin{tikzpicture}[overlay]
      \path (2*\thepage,-0.7*\thepage)
        pic{bat};
    \end{tikzpicture}
    \pause[6]
  \end{frame}
\end{document}
```



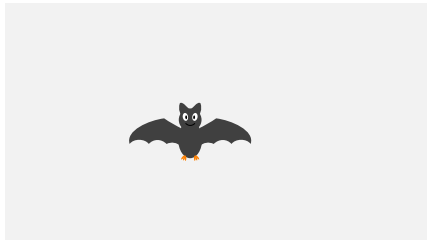
Animation example

```
\documentclass{beamer}
\usepackage{tikz}
\usetikzlibrary{tikzlings}
\begin{document}
  \begin{frame}
    \begin{tikzpicture}[overlay]
      \path (2*\thepage,-0.7*\thepage)
        pic{bat};
    \end{tikzpicture}
    \pause[6]
  \end{frame}
\end{document}
```



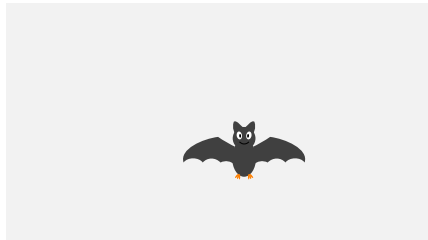
Animation example

```
\documentclass{beamer}
\usepackage{tikz}
\usetikzlibrary{tikzlings}
\begin{document}
  \begin{frame}
    \begin{tikzpicture}[overlay]
      \path (2*\thepage,-0.7*\thepage)
        pic{bat};
    \end{tikzpicture}
    \pause[6]
  \end{frame}
\end{document}
```



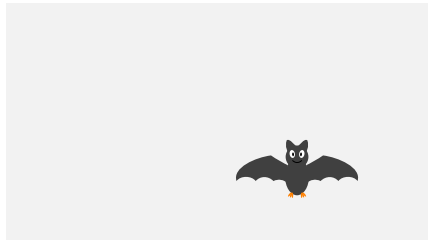
Animation example

```
\documentclass{beamer}
\usepackage{tikz}
\usetikzlibrary{tikzlings}
\begin{document}
  \begin{frame}
    \begin{tikzpicture}[overlay]
      \path (2*\thepage,-0.7*\thepage)
        pic{bat};
    \end{tikzpicture}
    \pause[6]
  \end{frame}
\end{document}
```



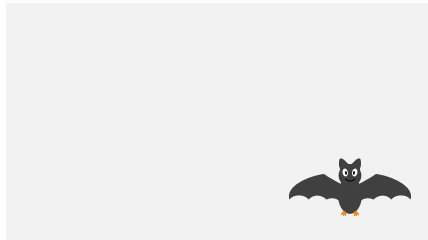
Animation example

```
\documentclass{beamer}
\usepackage{tikz}
\usetikzlibrary{tikzlings}
\begin{document}
  \begin{frame}
    \begin{tikzpicture}[overlay]
      \path (2*\thepage,-0.7*\thepage)
        pic{bat};
    \end{tikzpicture}
    \pause[6]
  \end{frame}
\end{document}
```

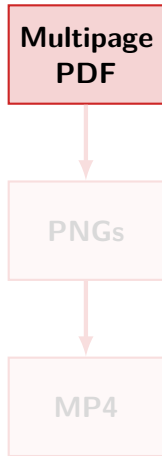


Animation example

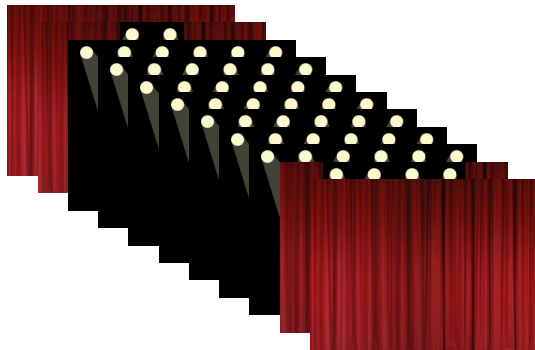
```
\documentclass{beamer}
\usepackage{tikz}
\usetikzlibrary{tikzlings}
\begin{document}
  \begin{frame}
    \begin{tikzpicture}[overlay]
      \path (2*\thepage,-0.7*\thepage)
        pic{bat};
    \end{tikzpicture}
    \pause[6]
  \end{frame}
\end{document}
```



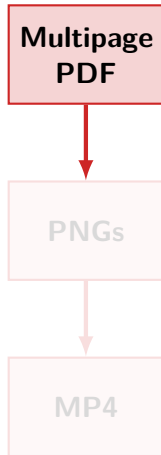
Converting PDF into video



Multipage PDF



Converting PDF into video



Convert PDF to PNG

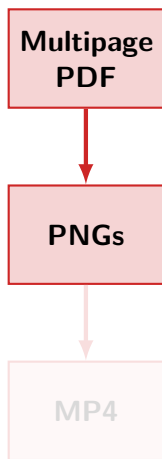
Many possible tools

- convert from Image Magick
- sips from macOS
- pdftoppm from poppler-utils
- ...

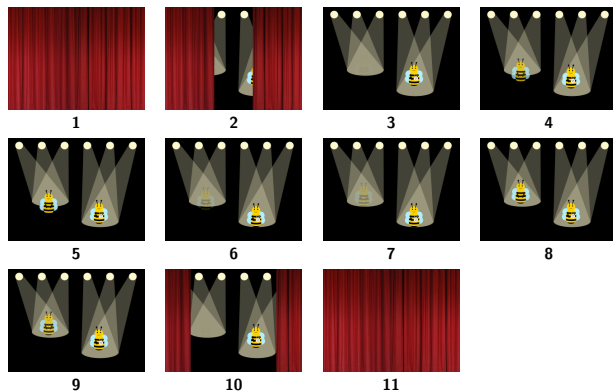
Current choice:

```
pdftoppm -png -r 240 Example.pdf Example
```

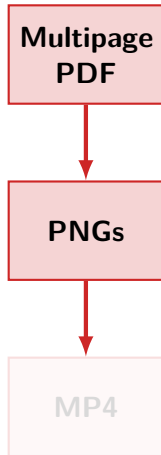

Converting PDF into video



Set of numbered PNGs



Converting PDF into video



Convert PNGs to MP4

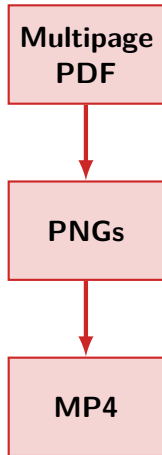
First step:

```
ffmpeg \  
  -ss 00:00:00 -i Example-%03d.png \  
  -ss 00:00:10 -i Music.m4a \  
  -shortest \  
  Example_raw.mp4
```

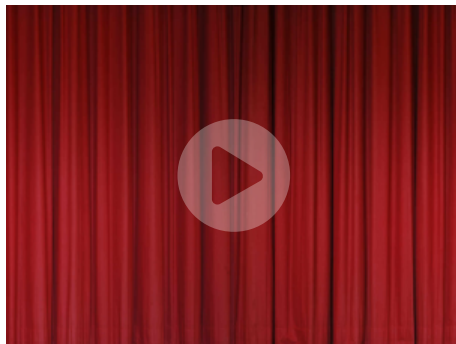
Second step:

```
HandBrakeCLI --crop 0:0:0:0 \  
  -i Example_raw.mp4 -o Example.mp4
```

Converting PDF into video



Movie clip as MP4



Stitching clips together

Many possible tools:

- **Freemake Video Converter (MS)**
- **iMovie (macOS)**
- **kdenlive**
- **moviepy**
- ...

Requirements:

- **transfade videos for smooth transitions**
- **adjust volume levels individually**
- **scriptable**

Example script: https://github.com/TikZlings/Extravaganza2022/blob/main/videos/merge_videos.py

Finalise video with another pass through HandBreak



Vimeo

<https://vimeo.com/>



List with links to all previous videos

<https://github.com/TikZlings#extravaganza-videos>

Movie time



<https://vimeo.com/780457002>