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PresVoz

Generating Presentations with Voice

https://presvoz.gitlab.io

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Contents

Introduction

What is PresVoz?

PresVoz is a ConT_EXt module that generates presentations or slides with voice. It might be also considered as vector video for presentations.

Slides (or frames in *Flash*) keep text and other vectors as such. This avoids any degradation in image quality. Each slide is displayed as long as required and included only once. There is no file size increase from the image part in the final presentation (when compared to its source).

Slides are automatically synced with sound, according to the transition time of each slide.

Requirements

Each source presentation has two basic requirements:

- It may not be generated by ConT_EXt, but it will copy each slide from the source in its final version.
- It cannot already include multimedia content, because it will be lost in the final presentation.

Both requirements come from the way the source slides are included in the final presentation with voice. Each page from the source PDF document is copied using \externalfigure. As the time of writing, this command cannot copy any multimedia.

Document Conventions

This document is typeset using a slightly modified version of *Truetypewriter PolyglOTT* de Сергей Битов (also known as Sam_T). The italic font is only *slanted regular*. For the typewriter usage (where the keyboard is required to enter text, such as commands or internet addresses), the font is **slightly engrossed.**

Interactive links in this document are surrounded by a colored border. Internal links (pointing to other parts of this very same document) have green borders. External links (opened by your internet browser) have red borders. Both red and green colors are set to a bit darker tone than its pure values.

Interactive link borders are a PDF feature. They are displayed on screen, but the shouldn't be printed. As far as I know, the viewer in *Chrome* or *Edge* doesn't display them. *PDF.js* in *Firefox* displays them fine. If links lack colored borders, you may blame your browser compilance with the PDF standard.

There are also page icons that include text to be simply copied and pasted. This avoids the extra format in the PDF body, which will cause errors when pasted in the terminal. Again, this is a pure interactive feature, so it won't be printed on paper.

1 What is PresVoz?

PresVoz is a ConTEXt LMTX (**https://www.pragma-ade.com/install.htm**) module that allows to mix slides and sound, including transition times. It generates a single PDF document with playing buttons.

The reasoning behind *PresVoz* is to have the best possible quality in the slides, voice with reasonable quality, automatic slide transitions and minimal output size.

Just in case you might wonder, *PresVoz* name comes from the Spanish *presentaciones con voz* ("presentations with voice").

A Why Does It Work?

Presentations with voice are a different approach from video generation containing recorded voice.

The recorded voice only differs from the one included in standard video files in extra compression ratio. Recorded voice doesn't require the same quality as music. This is the reason why the final sound size is smaller.

As for the slides, they aren't converted to bitmaps which would be added in a file with a rate of multiple frames per second. Vectors are kept, both in text (displayed as such, not as image) and in images containing them. This results in no quality degradation and smaller global size (when compared to bitmaps in total number of frames).

B License

PresVoz is released under the second version of the *GNU General Public License*.[1] This is the same license used for ConTEXt.

It comes with no warranty and code may contain bugs. Unless you are willing to deal with glitches and faulty code, please don't use *PresVoz*.

C Acknowlegments

The main *JavaScript* contribution for the PDF generation comes from Michal Vlasák. I really indebted to him for his huge generosity and readiness to help.

ActionScript for the *Flash* presentations comes originally from Leonard Lin and Sergio Costas.

Besides them, I couldn't generate this module without the help of Hans Hagen, by replying the questions I posted on the mailing list for ConTEXt users.

All errors are mine. Of course, I'm the only one to blame when it comes to misunderstandings of their statements.

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1 https://www.gnu.org/licenses/old-licenses/gpl-2.0.html#SEC1›.

2 Requirements

Since presentations with voice rely on *JavaScript* for slide transitions, *Acrobat* is required. Its latest version is recommended.

Although you can generate the presentations on any OS that runs ConTEXt, only *Acrobat DC* can play these presentations (using OS multimedia resources).

Since *QuickTime* seems not to be reporting sound position to *Acrobat*, the resulting presentations won't work in *macOS* (an there is nothing to do about this).

As a goodie, *PresVoz* can also generate *Flash* presentations (see *4.B.* Flash *Presentations*).

A Input Requirements

To generate the presentations with voice, you must have on the same directory[2]:

1. The original slides in PDF format.

   As long as the PDF document contains no format error, it is irrelevant how it has been generated.

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[2] *PresVoz* expects these three files in the same directory. If they aren't, please generate as many symbolic links (or junctions, in *Windows* parlance) as required to have these three files in the same directory.

2. Sound file with voice in MP3 format.

   If there is an uncompressed WAV file and LAME is installed on your computer, *PresVoz* will generate the MP3 file.

   PresVoz will only generate the MP3 file if there is none available.[3] Being both MP3 and WAV given, MP3 is included in the final presentation.

3. A pure text file with timeline. Times should be in milliseconds, such as in:

   599
   1049
   1526
   2031
   2494
   2876
   3404
   3903
   4338
   4845

To record voice and transitions times, *PresVoz* includes *GVoz*. It is a minimal *Python* script that records audio and times, while displaying the slides and generating sound and

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3 This requires **lame** (`https://lame.sourceforge.io/`) to be installed on your system (with its path known to the OS). Recorded voice may be automatically converted to MP3 format right after recording sound and slides with *GVoz*, as explained in *2.C. A Handy Script*.

timeline files. It is part of the ConTEXt module, although it has dependencies not included with ConTEXt.[4]

B *Naming Conventions*

Files should be named in the following way (honored by *GVoz*):

1. Main PDF document with slides, with any given name: **document.pdf**.
2. Sound file, with the following naming structure: **docu ment-audio.mp3**, **document-audio.wav**.
3. Timeline file has to be named so: **document-times.txt**

Sound files add **-audio.mp3** or **-audio.wav** to the PDF document name. Timeline adds **-times.txt** to the main document name.[5]

C *A Handy Script*

As already mentioned, recording your computer screen and sound from the microphone is automatically synced. But this approach is different and it requires knowing the duration of each slide, as accurate as possible. Voice and slides can be only synced when a list of slide durations is available.

It would be feasible to extract sound and reconstruct each slide transition from a recorded video.

Another approach would use a tool to display the slides and also record the voice and times each slide is advanced.

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4 **gvoz.pdf** (included with *PresVoz*) details those dependencies.
5 *GVoz* creates files following these naming conventions.

This is exactly what *GVoz* does. You may think it is a too simplistic script.

GVoz performs its task (perhaps reasonably) well: record voice and transition times when displaying each slide from the source presentation.

From my personal experience, this can be the most difficult data to obtain. Recording times are set with an acuracy of milliseconds (which is the how the times are set in *Flash* format.)

After recording the required data, *GVoz* automatically generates presentations with voice given that these requirements are known to the system:[6]

1. A ConTEXt distribution with **presvoz** installed.[7]
2. *SWFTools* is needed to generate *Flash* presentations.[8]

Being *GVoz* a *Python* script that displays pages from PDF documents and records voice from your computer, you need to install some required dependencies. This is all explained in its manual.[9]

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6 Or MSYS2, as discussed in the documentation for *GVoz*.

7 If *TEX Live* is installed, it might prevent the system to reach ConTEXt.

8 **https://swftools.org**. Before you consider installing it, be warned that it has already over a hundred known security vulnerabilities (and already reported, **https://nvd.nist.gov/vuln/search/results?query=swftools&search _type=all**). Never install it on a work or corporate computer and save their binaries in a computer without relevant information.

9 **gvoz.pdf** included with the *PresVoz* module. Direct link to its relevant section in the public version: **https://modules.contextgarden.net/dl/ presvoz/doc/context/third/presvoz/gvoz.pdf#nameddest=_19**.

3 Invocation

A *Basic Invocation*

Invocation is simple:[10]

```
context --extra=third-presvoz document-filename.pdf
```

I'd rather suggest to add **-purgeall** to remove extra files.

Both **document-times.js**[11] and **document-audio.mp3** cannot be removed automatically. Otherwise, they won't be embedded in the final PDF document.

B *Using a Script*[12]

α Windows

If you run *Windows*, follow these steps:

1. Open a pure text file and type:

   ```
   context --purgeall --extra=third-presvoz "%~1"
   ```

2. Give the resulting file a meaningful name, such as **presvoz.bat**.

---

10 Please, consider that you can avoid all this by using *GVoz*.

11 This is one of the files *PresVoz* generates, not one of the source files (**document-times.txt**).

12 On both cases, the path to ConTeXt binaries must be known to the system.

I'd rather save it on the desktop, but place it wherever you think it fits you needs.

3. After that, you might drag and drop the PDF presentation[13] and *PresVoz* will generate everything automatically.

β Linux[14]

In case you happen to run *Linux*:

1. Type in a pure text file:

   context --purgeall --extra=third-presvoz "$1"

2. You might want to name this file to **presvoz.**

3. Give execution permissions to that file, such as in:

   chmod u+x presvoz

4. Move the file to your local **~/bin/** directory.

After that, you could invoke in any terminal:[15]

presvoz document.pdf

Everything will run automatically after that.

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13 Given that *2.A. Input Requirements* are met.

14 Something similar should apply to *macOS*.

15 Of course, nothing prevents from having a drag-and-drop option as in *Windows*. But I don't use it in *Linux*, since *GVoz* already has a section explaining how to add this feature (*2.C.γ Desktop Icon*, **https://gitlab. com/presvoz/gvoz/-/raw/master/gvoz.pdf#nameddest=_35**). It makes more sense with *GVoz*, since it will generate the presentation after you have recorded it.

4 Issues

If you experience an issue with *PresVoz*, please report it at **https://gitlab.com/presvoz/presvoz/-/issues/new**.

The single already known issue is that most of the times the presentation goes back to the second last page, after the main sound file is completely played. This is an issue in the *JavaScript* code and I don't know how to fix it.

Since *GVoz* is external to ConTeXt, its issues should be reported at **https://gitlab.com/presvoz/gvoz/-/issues/new**.

A Technical Issues

Multimedia handling in PDF documents is still something to be specified in PDF version 2.0.

RichMedia might be the right approach to multimedia in PDF 2.0. But that documentation has to be written (and I think there is no way to check position in media).

The same applies for *JavaScript* in PDF. Behind ISO paywalls, its availability may be very limited.

B Flash *Presentations*

As a goodie, if you have *SWFTools* (**http://www.swftools. org**) installed,[16] it will generate a *Flash* version of this presentation with voice.

Ruffle (**https://ruffle.rs**) allows to play *Flash* files. It delivers desktop versions for *Windows*, *macOS* and *Linux*, and extensions for *Firefox*, *Chrome* and to self host on a server.

PresVoz presentations play pretty well with the current version of *Ruffle*. After all, these presentations are basic animations. But if you find a bug in *Ruffle*, please report it to the developers (**https://github.com/ruffle-rs/ruffle/ issues/new**).

16 **pdf2swf** and **swfc**. *Windows* binaries are available at **http://www. swftools.org/download.html**. *Homebrew* has binaries for *macOS*. But before any installation, please take into serious consideration note 8.

This document was generated with pandoc
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