Animated GIFs with GIMP
WORKSHOP

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While you wait... download these files!

http://ur1.ca/qoj3z

(https://duffy.fedorapeople.org/presentations/libreplanet2017/downloads/)

Types of Animated GIFs

(a non-exhaustive list)

Types of Animated GIFs

Video Frames

Probably the most common form of animated GIF. Frames are captured frame-by-frame and reconstructed as frames in an animated GIF.

Types of Animated GIFs

Layered effects

This image started with a single static image, on top of which various effects created in either an image editing or animation program were layered on top.

Citation: Earthquake in San Francisco, 1906 GIF IT UP 2015 entry from François Dejardin in Liège, Belgium. https://imgur.com/gallery/qTJ7J

Types of Animated GIFs

Deformation

Using graphic program tools to deform / warp a single static image to create an animation.

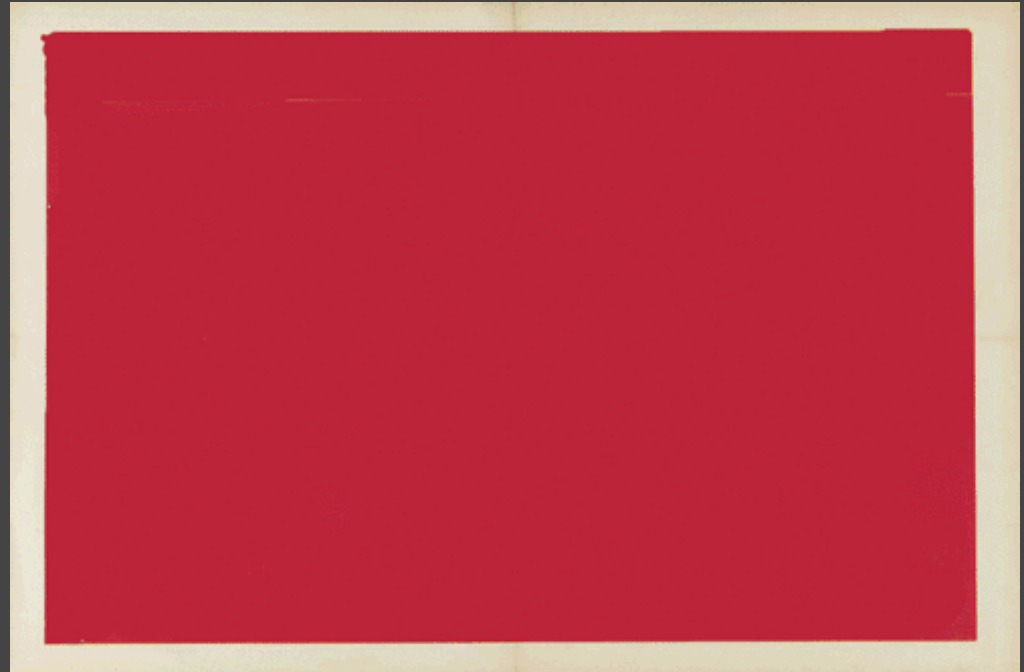Citation: Gunknot GIF IT UP 2015 entry from Anneliese Dehner of Portland, Oregon.https://imgur.com/gallery/qTJ7J

Types of Animated GIFs

Basic Sprite Motion

Often source is a single static image. Technique involves cutting sprites out of their original image or another image and creating simple animation by moving them around on the screen.

Citation: GIF IT UP 2015 entry from Nono Burling in Olympia, Washington. CC-BY-SA
https://imgur.com/gallery/qTJ7J

Types of Animated GIFs

Cinemagraph

Citation: Harper's May GIF IT UP 2015 entry by Sara Levine of Forest Hills, New York. https://imgur.com/gallery/qTJ7J

This is also sprite-based.
Small, subtle movements with long pauses and an infinite loop. Tends to be very minimalistic.

Often used for environmental compositions (falling snow, smoke coming out of a chimney, etc.) Also used for eyes blinking, lights blinking, clouds moving, steam coming off of food or drinks, etc.

Think subtle.

Types of Animated GIFs

Scrolling Sprites

This kind of image starts with a single static image. A transparent "window" is created and a second image layered beneath the first is animated with a simple scrolling motion.

Types of Animated GIFs

Peekaboo Sprites

Sometimes these are looped, sometimes they aren't. They usually try to fake the appearance of a static image and after a relatively long period of time the animation becomes apparent.

Citation: crudelegend on Reddit
https://www.reddit.com/r/gifs/comments/y3s74/wait_for_it/
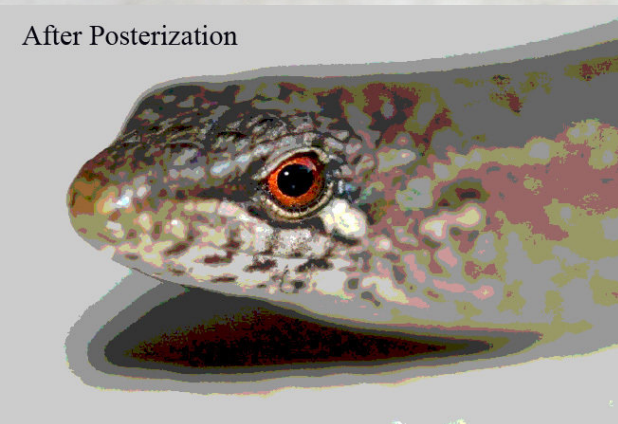
About the GIF Format

About the GIF format

Limited to 256 colors

Before Posterization

After Posterization

Avoiding gradients, using as few colors as possible, or even working in grayscale can make this limitation less apparent.

The more colors your image needs, the more likely colors will get dropped and it can have an unnatural-looking, posterized effect if you aren't careful about the color palette.

About the GIF format

Supports transparency

Boundary around the edge of the
transparency can be jagged depending
on the background color that was cut
from the image.
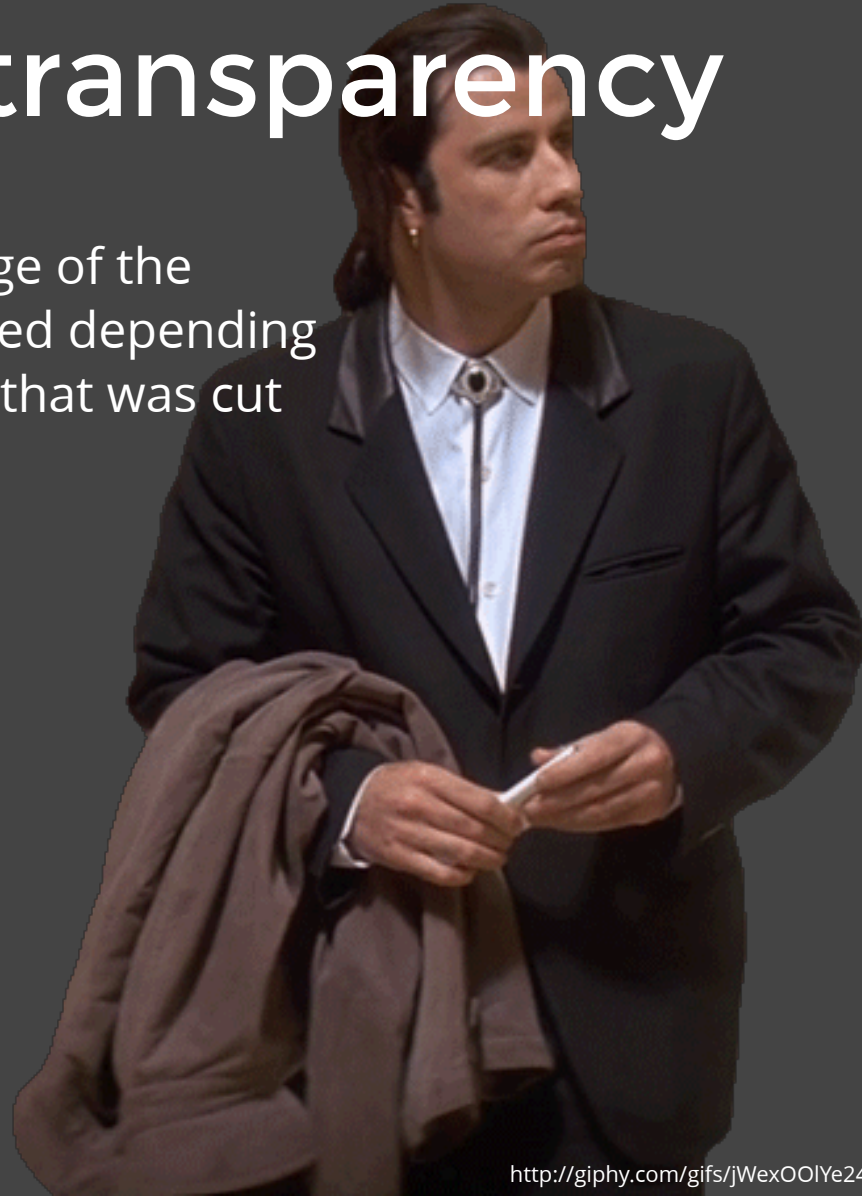
About the GIF format

Looping can be customized

Animations can:

- Play once
- Loop only a specified number of times
- Loop infinitely

The timing between frames can be customized too.

Chainmail_Danno on Reddit https://www.reddit.com/r/NoLoop/comments/vtkek/lets_do_this/

About the GIF format

Watch your filesize

Source: http://www.gifbin.com/988704

Animated GIFs can get large quickly, particularly as you add additional frames.
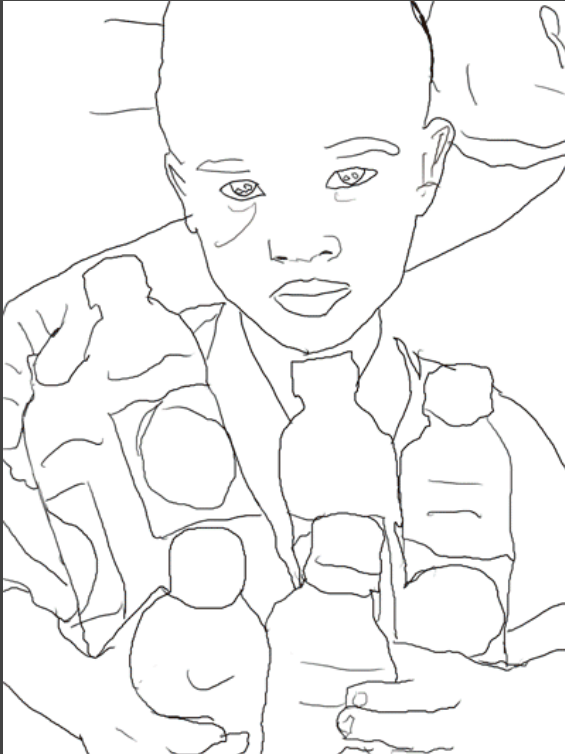
Watch your filesize :)

(This one is 3.8 MB, about the size of a typical mp3 song.)

Finding Source Material

Finding Source Material
Generate your own

Progress of a digital painting I did of a Malagasy beekeeper's daughter after a harvest. by Micklevandickle1
https://imgur.com/gallery/wckMB

Sometimes creating your own source material is the easiest and quickest way to get what you need.

You can use your cell phone camera, webcam on your laptop, or simple drawings (flip-book style) to create a video or frames that can be used to create an animated GIF.

Stop-motion photography using props like toys and other items works too.

Finding Source Material
Openly-licensed videos

http://ur1.ca/qoj3z

Here are some pretty good sources for openly-licensed video materials.

General Electric Refrigerator Commercial (1952)
Public Domain. https://archive.org/details/GE_Commercial

- **The Internet Archive's Moving Image Archive**
  https://archive.org/details/movies
- **National Park B-Roll Archive**
  http://www.nps.gov/pub_aff/video/
- **Prelinger Archives**
  https://archive.org/details/prelinger
- **Vimeo CC Collection**
  https://vimeo.com/creativecommons
- **Videvo CC3 Collection**
  https://www.videvo.net/
- **Internet Archive Stock Footage**
  https://archive.org/details/stock_footage
- **Digital Public Library of America Collections**
  https://dp.la/info/gif-it-up/select-collections-available-for-re-use/
- **Pixabay**
  https://pixabay.com/

Finding Source Material
Openly-licensed images

- **Creative Commons Search**
  http://search.creativecommons.org
- **Open Clipart Library**
  http://openclipart.org
- **Pixabay**
  http://pixabay.com
- **Library of Congress**
  https://www.loc.gov/collections/
- **Digital Public Library of America Collections**
  https://dp.la/info/gif-it-up/select-collections-available-for-re-use/
- **Internet Archive Images Collection**
  https://archive.org/details/image

Here are some pretty good sources for openly-licensed images. Licenses may vary so take care to note them.

Finding Source Material
Licensing

The more permissive the license it has, the better the source material content is for usage. Some permissive licenses we recommend:

- Public Domain
- Creative Commons Zero (CC0)
- Creative Commons Attribution (CC-BY)
- Creative Commons Attribution ShareAlike (CC-BY-SA) (has copyleft built-in)

This being LibrePlanet, we don't need to lecture you on content licenses and the need to be conscious & careful. Just a reminder. :)

Animation Basics: Video-based GIF

(Your first animated GIF!)

Video-based Animation
Download these files!

Grab these now if you didn't before this presentation started:

http://ur1.ca/qoj3z

(https://duffy.fedorapeople.org/presentations/libreplanet2017/downloads/)

Video-based Animation
Convert video to GIF

There are many freely-licensed tools to accomplish this, but all appear to be command-line programs. Choose your poison; I prefer node-gify (https://github.com/tj/node-gify + MIT license). Steps:

- `git clone https://github.com/tj/node-gify`
- `cd bin`
- `./gify input-video.ogv output.gif`

Option details:

```
./gify -w 500 -s 00:42:15 -D 10 input-video.ogv output.gif
```

Max width 500px
(-h for max height)

Starting time
(hh:mm:ss)

Duration in
seconds

Video-based Animation
GIMP Animation Tips

Some tips you'll need to know as you start playing around with your video GIF....

First, open it in Gimp.

Video-based Animation

1. Optimized vs Unoptimized

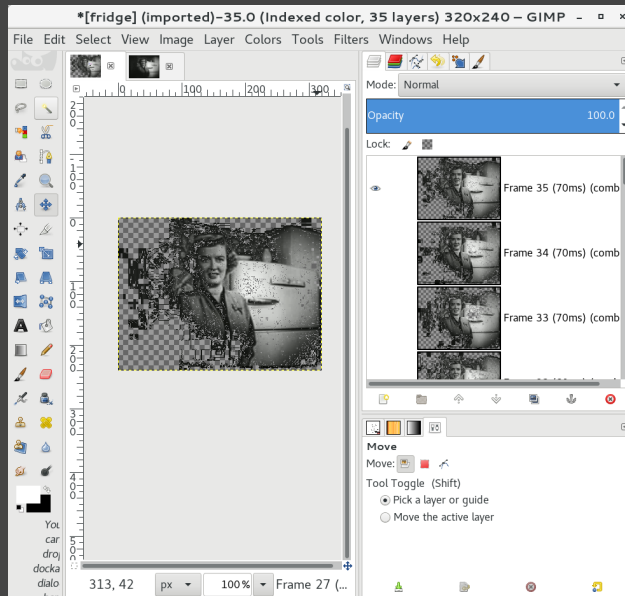Why are there holes in the image? Try **Filters > Animation > Unoptimize**.
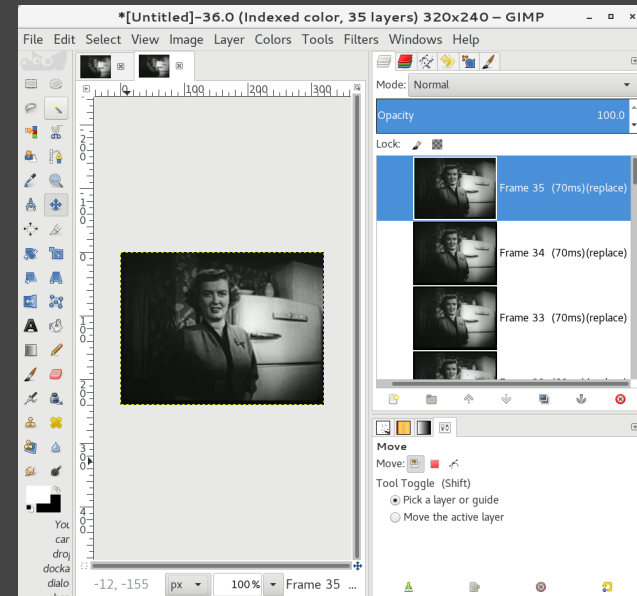

Image has holes, each frame has "(combine)" note on each.

Each frame is a full image, has "(replace)" note on each.

(Optimized in this context means only the parts of the image
that changed are stored, to minimize file size)

Video-based Animation

2. Layers are frames (Part 1)

Each layer in Gimp is a different frame of the animation. The first frame is at the bottom of the stack; the last at the top.
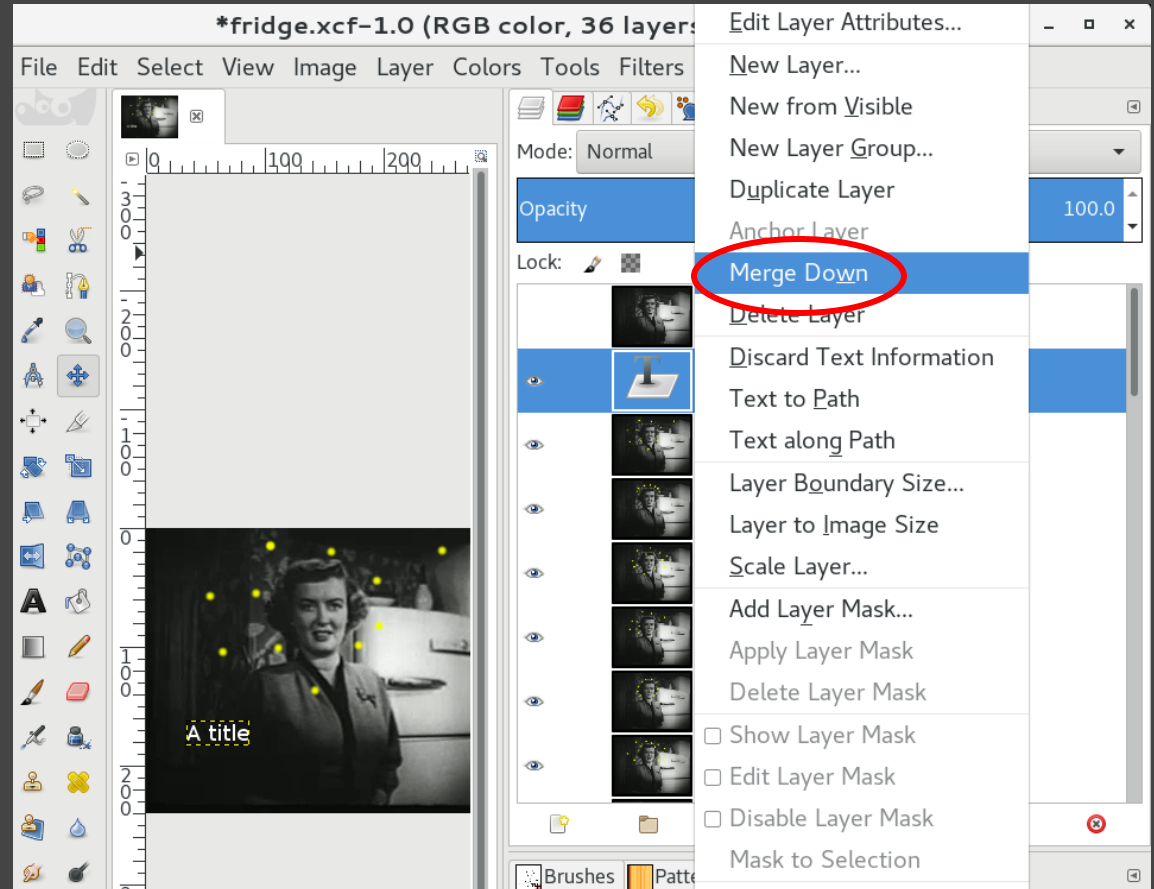
Frames play in order from the bottom to the top.

Video-based Animation
2. Layers are frames (Part 2)

If you add another layer of text or with some drawings in it, you need to merge it down to the frame of the animation you want it in, or it will become a separate frame in the animation.
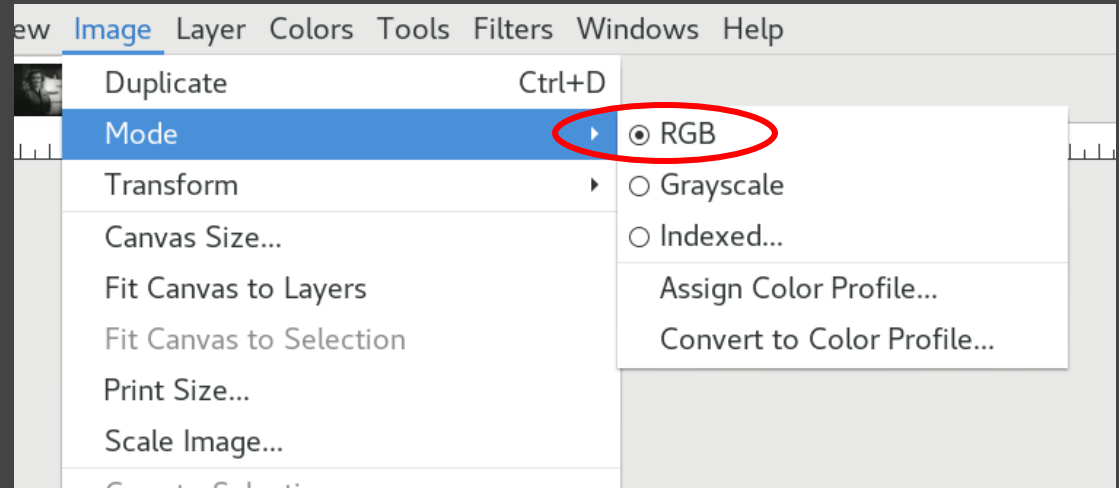
Video-based Animation

3. Adding more colors

Remember, GIF is a limited palette. Convert to RGB color for full access to all colors:

Image > Mode > RGB.

When you save out later, a new 256-color palette will be generated.

Video-based Animation
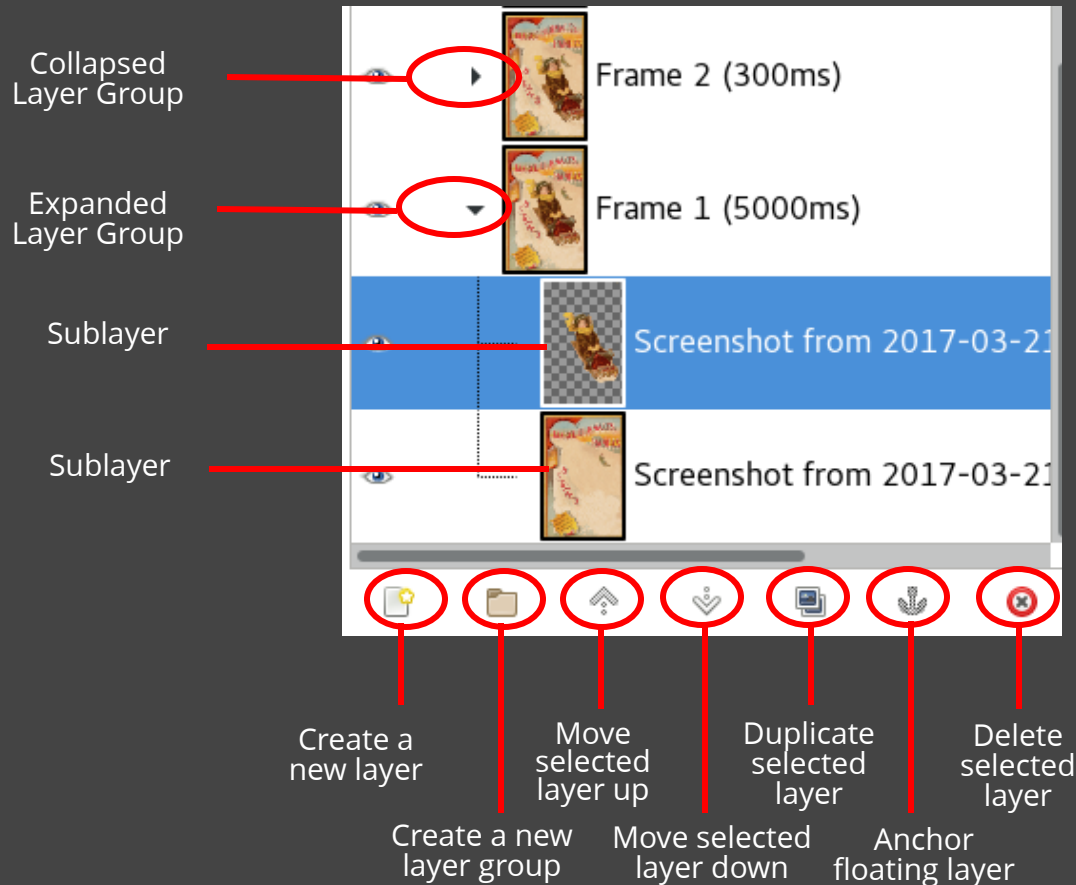
4. Viewing individual frames

Click on the 'eye' icon to the left of a layer to hide that layer. Hide all the way down the stack to see the bottom-most layer.
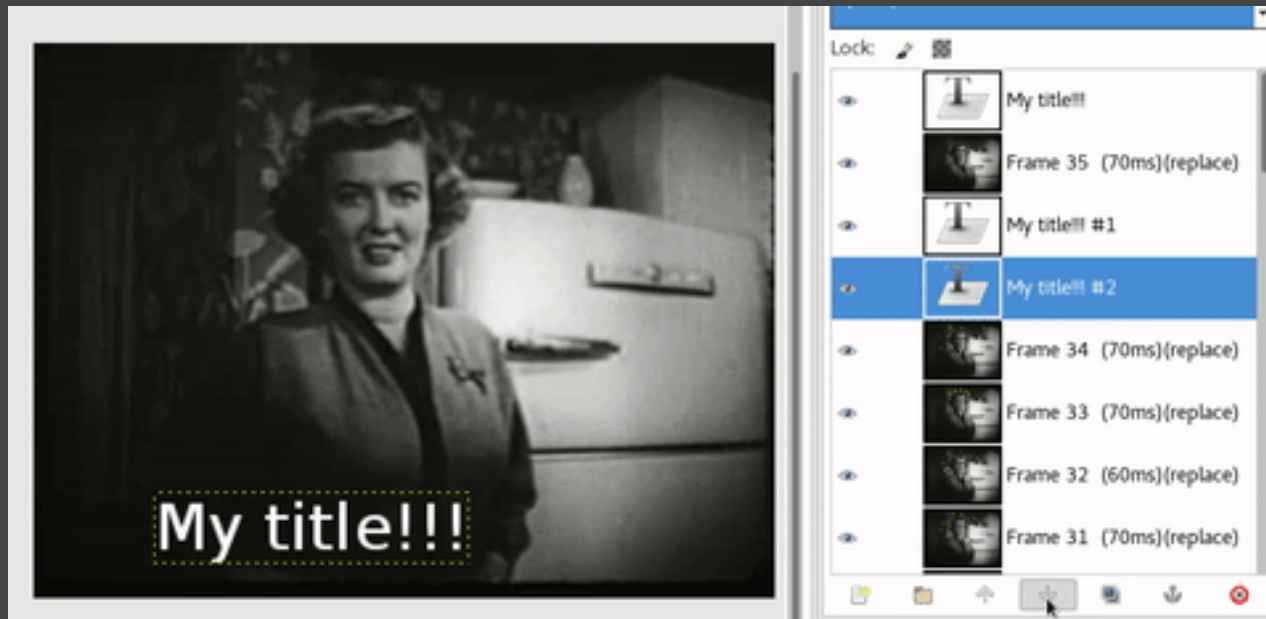
Video-based Animation

5. Layer Controls

Some layer controls you'll need to know about:

Collapsed Layer Group

Expanded Layer Group

Frame 2 (300ms)

Frame 1 (5000ms)

Sublayer — Screenshot from 2017-03-21

Sublayer — Screenshot from 2017-03-21

Create a new layer

Create a new layer group

Move selected layer up

Move selected layer down

Duplicate selected layer

Anchor floating layer

Delete selected layer

Video-based Animation

6. Draw on a new layer

In case you make mistakes, it's a good idea to draw on a new layer on top of the frame you're drawing on (then merge down when ready.) You can also use this technique to copy the same item to multiple frames.

Video-based Animation
7. Secrets in the layer name!

By modifying the text in parentheses in the layer name (double-click to edit) you can manipulate the length of time certain frames are displayed as well as how they are displayed.

Frame delay: In milliseconds. In the format (80ms). (Want to make a peek-a-boo? Make this value very long for the first frame.)

Frame mode: (replace) or (combine). Combine is optimized (only parts that change will be stored) while replace will store the entire frame.

Frame 35 (70ms)(replace)

Frame 34 (70ms)(replace)

Frame 33 (70ms)(replace)

Frame 32 (60ms)(replace)

Frame 31 (70ms)(replace)

Frame 30 (70ms)(replace)

Frame 29 (60ms)(replace)

Frame 28 (70ms)(replace)

Video-based Animation

8. Animation preview

You can preview how the animation will look so far by opening up the playback window in **Filters > Animation > Playback**...
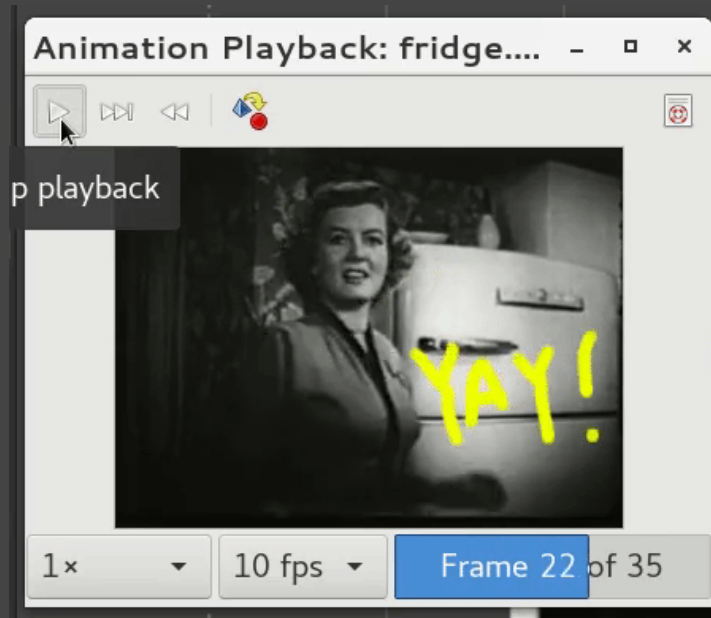
Sprite-based Animation

Sprite-based Animation
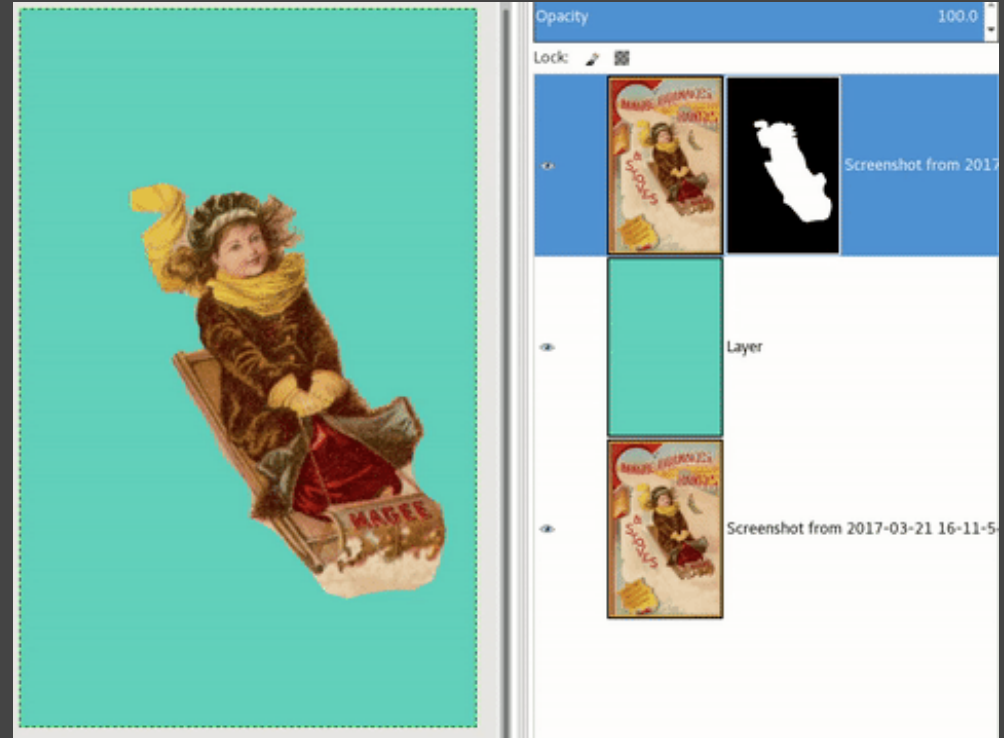
Sprite-based Animations

Create animations like this using a single static image!

We'll create sprites from this image using masking and stamping/healing techniques, then animate using the sprites.

https://www.digitalcommonwealth.org/search/commonwealth:w9505j36k

"Magee furances" Boston Public Library

Sprite-based Animation
Masking to cut out sprite

1. Right-click layer to add a layer mask (use "White (full opacity.)
2. Create a new layer beneath the masked layer with a bright color (so it's easier to see transparent background around item you're masking out.
3. Paint black where you want to cut out and white where you want to keep the image.

Sprite-based Animation
Masking fine-details

(You can just use the mask included in the downloads :))

The best way to mask fine details:

1. Right-click masked layer, uncheck '**edit layer mask**'
2. Use magic wand tool to select areas you want to exclude. Hold down **Shift** to progressively add to selection.
3. Right-click masked layer, check '**edit layer mask**'
4. Use fill tool with option '**Fill whole selection**' and fill in black

Sprite-based Animation
Creating a clean background

This takes a bit of finesse. You'll use the cloning tool:

- Hold down the "Ctrl" key with the cloning tool selected to select an area to copy.
- Paint with the cloning tool brush, refreshing your source as needed.
- You may blend with the smudge tool as well.

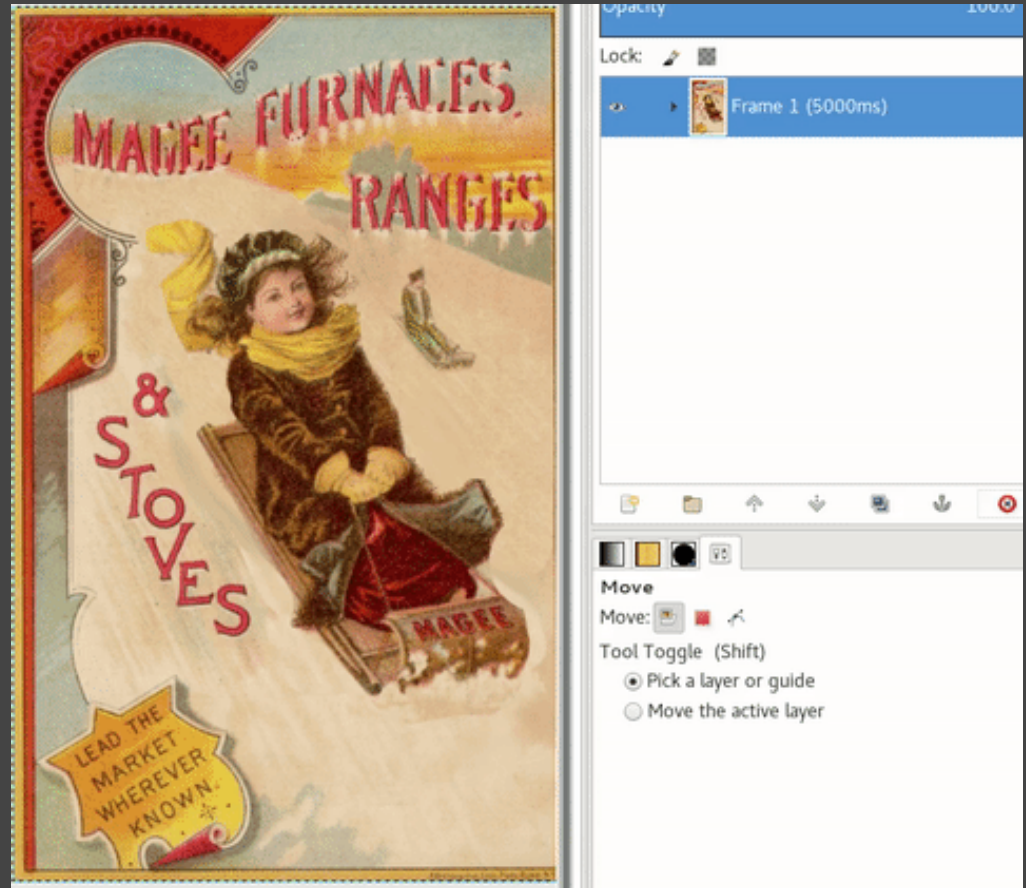(You can just use the background included in the downloads :))

Sprite-based Animation
Animating the sprite!

You'll use layer groups as your animation frames this time.
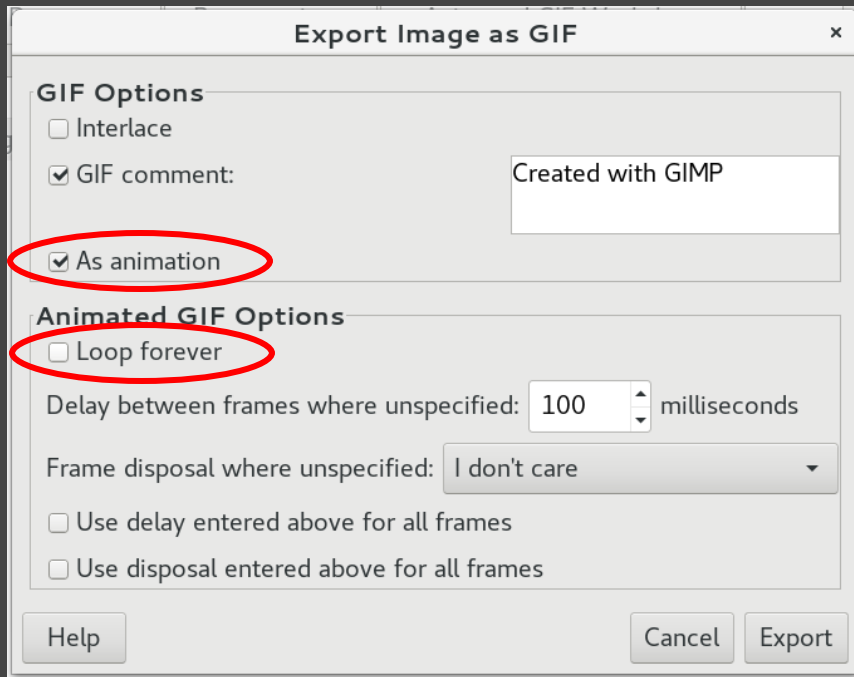
Create a layer group with the background and sprite inside of it.

Duplicate the group, animate the sprite, duplicate the latest group, repeat!

Sprite-based Animation
Saving your GIF

- Go to **File > Export As...**
- Save the file with a .gif extension
- You'll get the dialog shown at the left:
    - Make sure you check on "**As animation**"
    - Check on or off "Loop forever" depending on your preferences.
- Hit Export!

Where to go from here + Q&A