

Lab 07 – Processing Images!

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420-141-VA - GAME PROGRAMMING 1 - VANIER COLLEGE



Outline

Processing Images Guidelines and Tools

- Planning for all images needed in-game
- Image Formats and Properties
- Searching images on the web
- Making Background Transparent
- Cropping images
- Scaling Images
- Gimp Tutorials



Planning for all images needed in-game



Planning for all images needed in-game

BRAINSTORMING

When implementing a new game, you must come up with an idea

Find many ideas and pick the best one

Try to understand all the different interactions between game elements, draw on paper or on the board

Especially think of the “edge cases” where gameplay would be challenging and plan solutions for these cases

BREAKING DOWN THE WORK

No that you have a great game idea, break down the different assets you need for the game

- Playable Game objects
- Computer Controlled objects
- Props and backgrounds

Make a list of all the images you need, make a quick prototype to establish the resolution for your images

Image Formats and Properties

Bitmap (.bmp): No compression, transparency supported with RGBA format

JPEG (.jpg): Supports compression, not transparency (Good for photographs)

Portable Network Graphics (.png): Supports Compression and Transparency

GIF (.gif): Supports transparency and animation

- GIF images are not natively supported in Greenfoot
- You can import the [GifImage](#) class to enable support

A good website for finding free GIF images is giphy.com



Searching images on the web (1/2)

Content online is regulated with Licenses, u

Image contents is owned by the author of the image

The owner of the image may grant permissions to other people by assigning a license to his image

- **Copyright notice:** (example below). You need written permission to use contents or modify contents.
- **Creative Commons License:** right to share, use, and build upon the material
- **Fair Dealing:** is an exception in the **Canadian** Copyright Act (for research, education, etc)
- **Fair use:** Equivalent of Fair Dealing in the USA ([overview](#))

In Google Images and Bing images, you can filter images according to their license

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Searching images on the web (2/2)

The screenshot shows a Google Images search interface. The search bar contains the text "rock paper scissors lizard spock". The "Images" tab is selected. The "SafeSearch" is set to "Moderate". A red box highlights the "Filter" button in the top right corner. Another red box highlights the "All Creative Commons" filter option in the top left of the results area. A red arrow points from a text box to the "Filter" button, and another red arrow points from the same text box to the "All Creative Commons" filter option. The text box contains the following text:

- 1- Filter results
- 2- Specify license (All creative commons)

The search results show several image thumbnails. The first thumbnail is a diagram of the Rock Paper Scissors Lizard Spock game. The second thumbnail is a diagram of the game in Italian, with labels like "Forbici", "Carta", "Sasso", "Lizard", and "Spock". The third thumbnail is a diagram of the game with hand gestures. The fourth thumbnail is a meme titled "Meme Rock Paper Scissors Lizard Spock".

Making Background Transparent

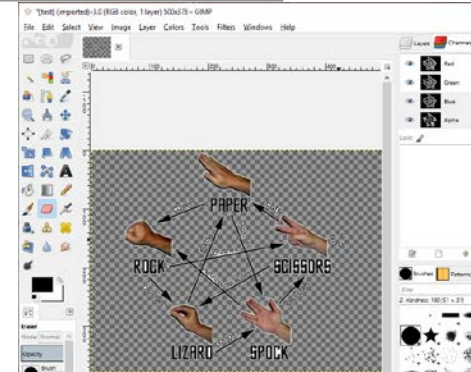
There are many Tools allowing to do this operation. In Gimp ([tutorial](#))

- File -> Open as Layers...
- Using Fuzzy Select Tool, select Background area
- Add Alpha Mask to image
- Write Alpha Mask
- Export image as PNG

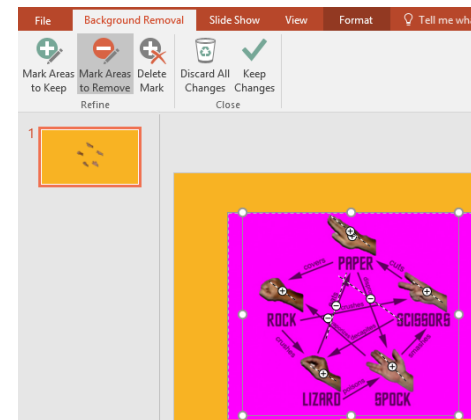
In PowerPoint, you can drag your image on a slideshow (use colored background for best results)

- Format -> Remove Background
- Mark areas to keep and remove
- Save as by right-clicking on the image

Gimp

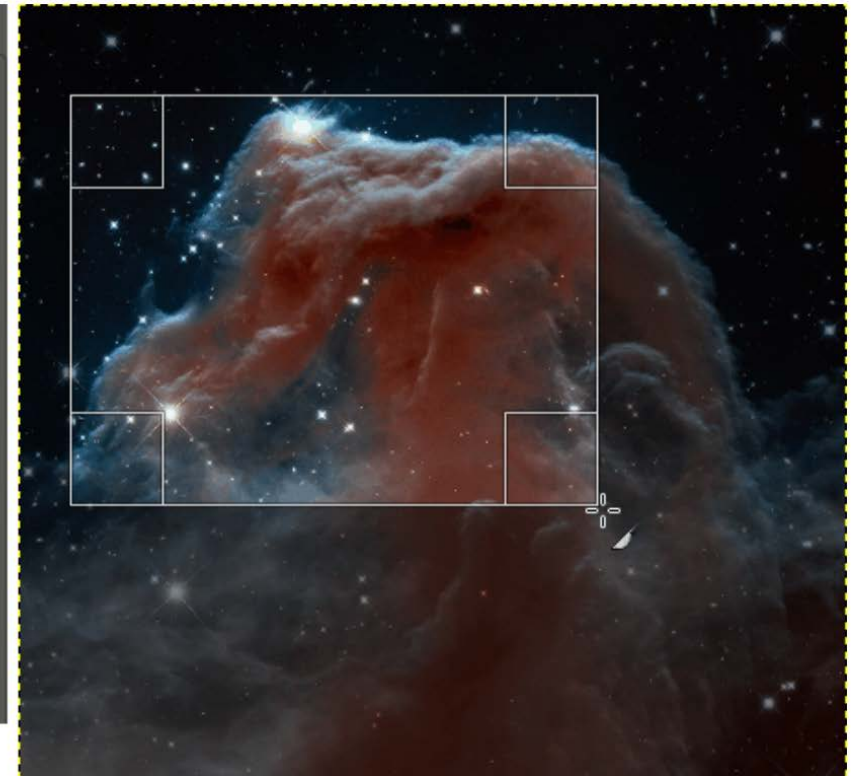
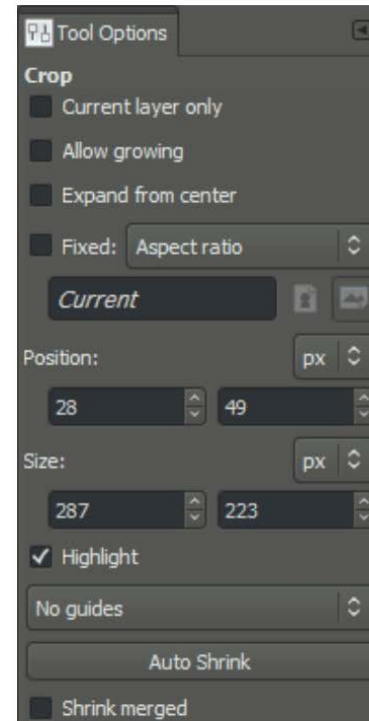


PowerPoint



Cropping images with GIMP

- Cropping an image allows removing an unwanted area in an image and keep only the region of interest.
- Once an image is cropped, a portion of the image is lost and can't be recovered
- With GIMP: Tools -> Transform Tools -> Crop



Scaling Images with GIMP

- The aspect ratio of an image is the width / height
- To prevent distortion effect, the aspect ratio should generally be preserved when scaling an image
- Press the lock to toggle enabling or disabling the aspect ratio lock
- Select the units for the width and height (px means pixels)
- Quality changes the algorithm for resizing the image



Gimp Tutorials

<https://www.gimp.org/tutorials>



GIMP

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GIMP Quickies

Use GIMP for simple graphics needs without having to learn advanced image manipulation methods.

Simple Floating Logo

This tutorial walks through some basic image and layer manipulation techniques.

Making a Circle-Shaped Image

How to create a circular shaped image

