

# PETSCII Compositor Tool

Version 1.10

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**Concept / Code:** Jason Page (NoOtherMedicine - MSL)

<https://csdb.dk/scener/?id=4121>

<https://soundcloud.com/nothermedicine>

**Wizball image:** Steven Day (STE'86)

<https://csdb.dk/scener/?id=4280>

**Logo:** James Svård (Joe - The Tuneful Eight, Wrath Designs)

<https://csdb.dk/scener/?id=1672>

**Petscii Cola (Samar Productions):** Code by TheTom

PETSCII Compositor exports files in a format which is compatible with Petscii Cola

Using this tool, you can further edit your PETSCII, or export to a wider range of formats.

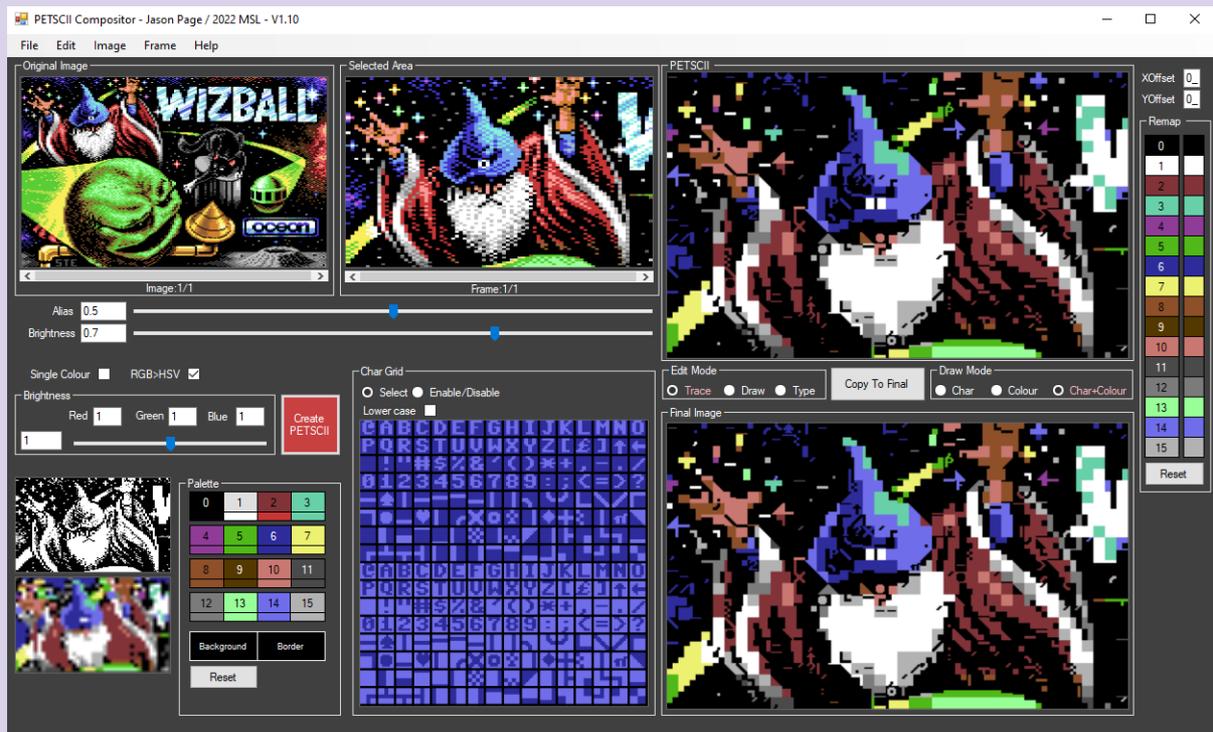
Thanks to TheTom for creating this tool.

[https://csdb.dk/release/?id=185842&fbclid=IwAR3pf32\\_euEIQgacTV\\_GfzIOxni46smyWYV4YrOYx6OCivIIMlePPC4FChU](https://csdb.dk/release/?id=185842&fbclid=IwAR3pf32_euEIQgacTV_GfzIOxni46smyWYV4YrOYx6OCivIIMlePPC4FChU)

**PETSCII (Markku Reunanen)**

Thank you for the .c file format!

[http://www.kameli.net/marg/?page\\_id=2717](http://www.kameli.net/marg/?page_id=2717)



## What is it?

The PETSCII Compositor Tool allows you to convert images into C64 PETSCII.

When converting images, it is common to create results where one area of an image converts well to PETSCII (for example, displaying the finer details), where other areas do not convert so well. Finding a balance means that the results are likely less than perfect - A compromise has had to be made.

The compositor tool allows you to create multiple PETSCII versions of an image (known as FRAMES), and then take the best parts of each to create the final outcome. You can also load multiple images (again, each with multiple frames)

The final PETSCII image can be created by copying PETSCII characters from any image frame. No compromises.

The PETSCII which is generated would be able to be displayed on any Commodore 64 computer:

- 1000 characters (40x25) (eg: \$0400 screen RAM space)
- 1000 foreground colours (\$d800 colour RAM space)
- Background colour (\$D021)
- Border colour (\$D020)
- Upper or lower case character set flag (\$D018)

# What's New?

V1.10

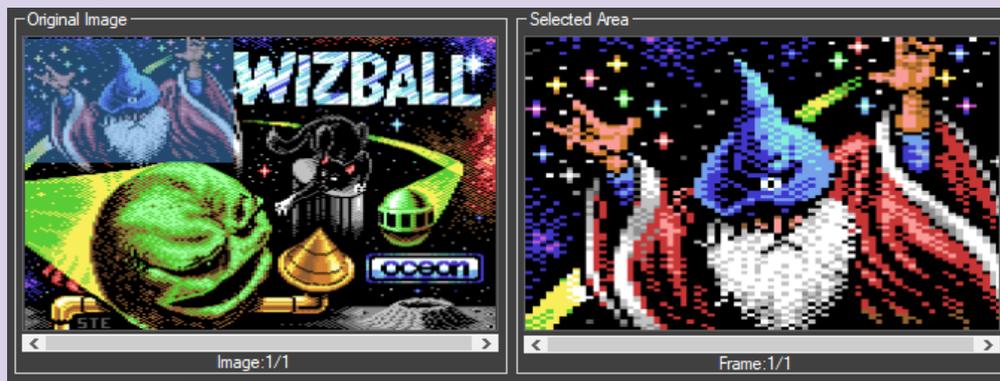
- (EXPERIMENTAL) Commodore Plus4 - Basic support added.
  - Export to Image (PNG, BMP, GIF, JPG)
  - Export to Petscii.c (For use in PETSCII tool by Markku Reunanen)
  - Export to .PRG (C64 program file)
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## PETSCII Conversion: How does it work?

The tool processes the source image in a number of steps.

Understanding these steps will help make sense of the controls and settings within the tool

Step 1 - Select an area to convert to PETSCII

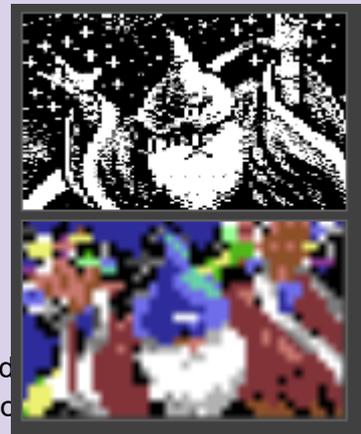


Select an area to convert to PETSCII by dragging on the top/left image.

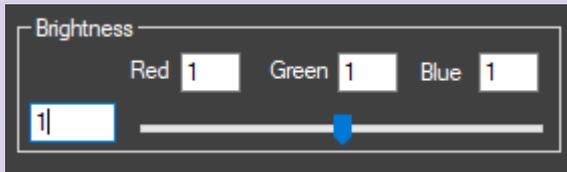
The selected area (shown with a blue-tint) of the source image is initially converted to a 320x200 pixel image.

This image is then separated into two further 320x200 pixel images:

- **Grey scale**
  - Containing the details of the image
- **Colour map**
  - Containing the C64 colours of the image as 8x8 pixel blocks
  - This uses the average colour from within the 8x8 pixel area And then calculates the closest C64 palette colour.
  - If the closest colour is that of the background colour, the second closest colour is chosen instead, so to ensure more detail is shown



You can control the overall brightness and hue of the colour map



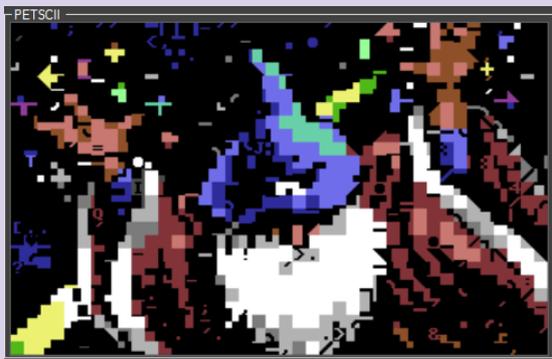
Red, Green and Blue values will scale the individual colour element. For example, setting Red to 0 will remove all reds from the RGB (red becomes black. Magenta becomes blue..)  
The Brightness value (and slider) will scale all RGB values

The closest C64 palette match is then made using the above parameters. Therefore, if you lower the brightness, a yellow pixel may well be translated into orange, brown or dark grey, for example.

The colour map image updates to reflect any changes made



The generated PETSCII is displayed in the top-right panel



Note that this is **NOT** the final image that you will save. This is a single frame. You can create multiple frames, using the same source image, and then copy various parts of each to create your final masterpiece.

All settings are saved and restored when selecting different frames. For example, brightness, selected area and so on.

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## Step 2 - Modify PETSCII parameters



There are two main parameters for modifying the PETSCII conversion. These only affect how the PETSCII character matching is calculated. None of these parameters will affect the actual colour of the character. A cyan will stay as a cyan. Essentially, it is just using the data from this image:



- Alias
  - This “blurs” the 8x8 pixels. Essentially, the lower this value, the more closely it will use the original frame data to compare against all C64 PETSCII characters (to eventually find the closest match)
  - When this is set to a higher value, the character becomes “fatter”, The final PETSCII image loses some finer details, but contains less background colour.
  - Basically, it’s detail vs smudged!
- Brightness
  - A pixel can only be either on or off. So anything below a certain brightness will be considered OFF. Otherwise it is ON
  - Modifying the brightness level will scale the pixel grey scale value accordingly. This can result in blockier results (which may be fine for large, background areas of an image, for example).
  - A “brighter” character essentially has more pixels enabled.

The PETSCII conversion then compares each 8x8 of the frame (processed with the Alias and Brightness controls) to all C64 PETSCII characters to find the closest match.

## Single Colour and RGB->HSV



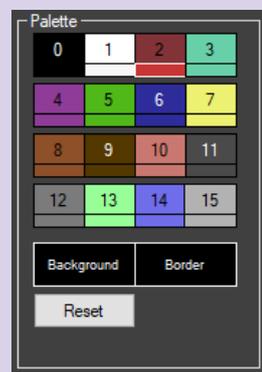
Images can either be single or multi-colour. Just click the “Single Colour” checkbox to select. The single colour is selected from the colour palette panel (see below)

RGB->HSV allows for an alternate method to be used to calculate the C64 colour palette. This can often result in colours that are closer to your expected results - But not always. As such, this is optional

## Colour Palette Panel

Each button in the colour palette is split into two parts:

- Top part: Select colour
- Bottom (thinner) part: Target colour



## Target Colours

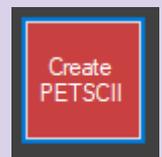
Target colours are used to help the colour conversion from the original image palette to a C64 palette. By default, the conversion will try to find the closest C64 colour. However, in many cases, this can produce undesirable results. For example the C64 red is not a vibrant (255,0,0 RGB) red colour. As such, a vibrant red may well convert to a pink or brown. We can help the conversion by telling it what colours we want red (in this case) to try to match. In the image above, you will see that the C64 red (number 2) has been given a hint as to what red in the image looks like (the strip under the main button shows a vibrant red colour)

## Selecting Colours

The colour palette panel allows you to select from the C64 palette for a number of purposes:

### 1. Select the colour for a single colour PETSCII

- Select the colour and then click on the *Create PETSCII* button to recreate the PETSCII frame

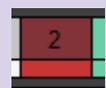


### 2. Select the colour for the background or border

- First click on Background or Border. They will flash.
- Next, click on one of the palette colours to select
- Note that changing the background colour will update both the frame AND final image to reflect this. It may well cause the final PETSCII image to look far worse, as only the frame image PETSCII has been recalculated to take into consideration the background colour change. The final PETSCII image is just the same final image with a different background colour.

### 3. Select a target colour to help the RGB>C64 Palette matching

- You'll see that below each palette button is a smaller strip. In this example, this is the colour that the colour matching will use as its target when converting to the C64 red.
- To set the target colour:
  - Click on the strip. It will flash
  - Next, click anywhere in the Selected Area panel to select a pixel
  - In this example, I chose the vibrant red from the wizard cloak
  - The strip colour will change to the pixel colour
- Click on the strip again to disable colour matching
- The PETSCII image will update accordingly



### 4. Set the target colour to another C64 colour

- When the strip is flashing, you can also click on any of the 16 C64 Palette buttons. This allows you to remap one colour to another, or to reset the individual colour to its default RGB.

Click the reset button to return all RGB targets to their default colours

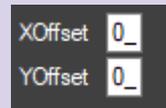
## X Offset / Y Offset

At the top, right of the window are two text boxes.

X Offset can range from 0-39

Y Offset can range from 0-24

Setting these will offset the Frame PETSCII image by x and y chars. Essentially, you can position the frame image to a different location. This can be useful when tracing different images to your final PETSCII.



## Colour Remapping

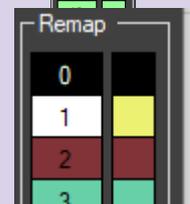
The final stage of the PETSCII generation is the colour remapping.

The panel on the right side shows the current remap settings. The column on the left Shows the original colour. The column on the right shows the remapped colour.

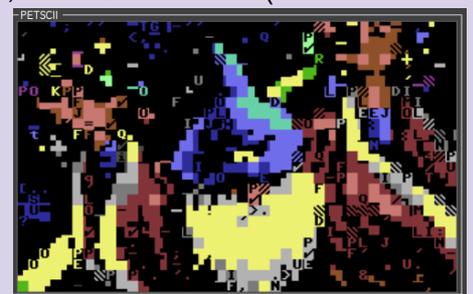
To remap a colour:

- Click first on the colour in the left column. It will flash.
- Click again on another colour in the left column.

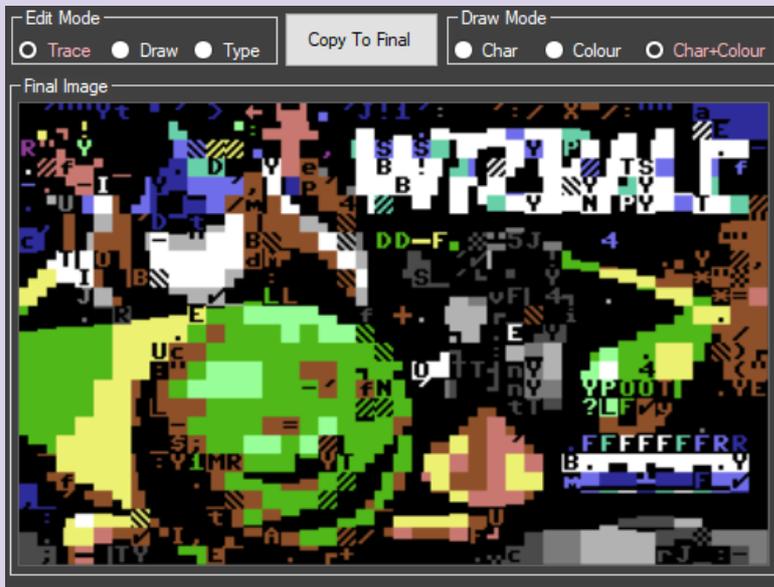
As an example, clicking on the white (1) button and then on the yellow (7) button. The display shows that white will be remapped to yellow in the PETSCII Frame



The Frame PETSCII Image is also updated accordingly. In this case, the wizards beard (and anything else which was white in colour) is now yellow.



## Step 3 - Creating the final PETSCII



You'll see a *Copy To Final* button. Pressing this will copy the Frame above to the **final image**. This is the image that you save / export.

### Edit Modes

To the left of the "Copy To Final" button, you can see 3 different edit modes: Trace, Draw and Type

#### Trace

Trace will allow you to copy the character from the same position in the Frame image to the final image. For example, you create a final image. You then modify the brightness parameters and then trace some specific parts to your final image.

To use Trace, just hold the left mouse button over your final image.

You can trace (copy) the current frame's character, colour, or both

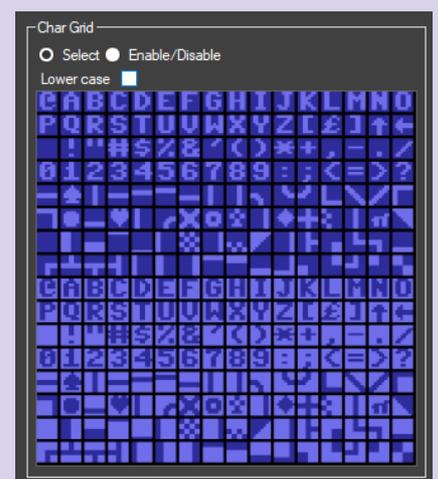
#### Draw

Draw mode just allows you to draw the currently selected character (selected from the C64 char grid)

As with Trace, you can select to draw the character, colour or both.

#### Type

Very basic. Selecting this, you can type using the keyboard.



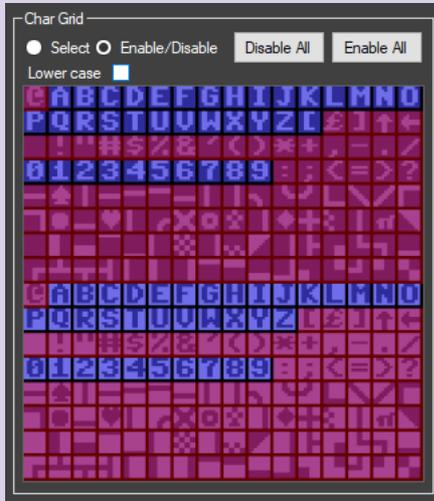
## Disabling / Enabling PETSCII Characters

It is possible to disable specific characters for the PETSCII conversion. For example, you may only want to use letters A-Z and numbers 0-9.

To do this, select “Enable/Disable” from the Char Grid view. Then, by left clicking on the Char Grid, you can toggle characters on or off.

Red = Character is disabled.

Press “*Create PETSCII*” button to generate the PETSCII Frame with your changes



To quickly disable or enable all characters, click on the “*Disable All*” or “*Enable All*” buttons. There are two separate enable/disable “banks”: One for upper case charset, and one for lower.

## Upper or Lower case character set

To switch between upper or lowercase charset, click on the “Lower case” tick box.

Note that this affects ALL displays. The final PETSCII display can not contain a mixture of both character sets.

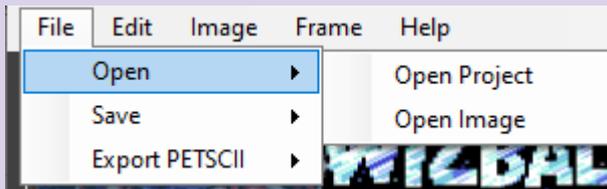
Changing the charset may require you to regenerate the PETSCII again (click on “*Create PETSCII*” button) as the initial display will not be using the closest matching characters.

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# Menu Options

## File

### Open



### Open Project

Opening a project that has been previously saved.

This will reload all images from the path that they were originally in when the project was saved, and set all settings to match accordingly.

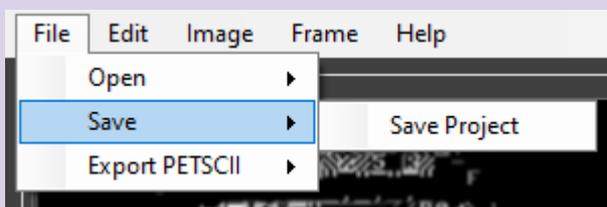
### Open Image

This will add an image to your project.

As the image on the right shows, the scroll bar under the image will allow you to select the image that you want to work with.



### Save

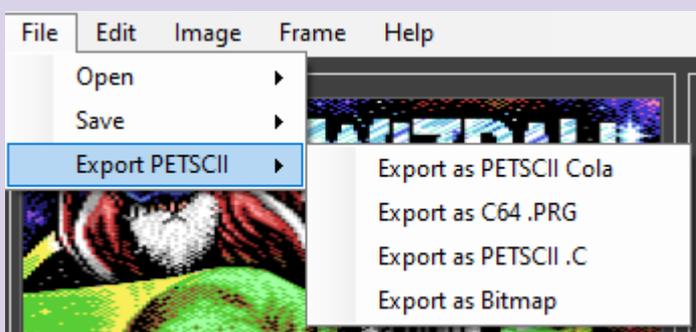


### Save Project

This allows you to save the project file, containing all information.

Note that the images are not saved within the project file - only the file paths to the images

### Export PETSCII



#### Export as .PETSCII Cola

This exports the PETSCII in a format that can be loaded into the PETSCII Cola editor. As such, if you wish to perform far more detailed PETSCII editing, or save the PETSCII in other formats, this editor can be used.

#### Export as C64 .PRG

This exports the PETSCII in a format that can be loaded a Commodore C64 or C64 emulator (such as Vice64)

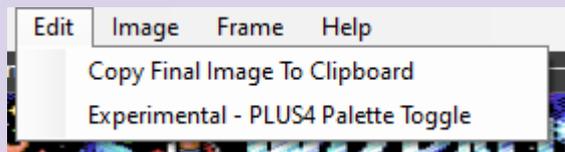
#### Export as PETSCII .C

This exports the PETSCII in a format that can be loaded into PETSCII tool ([http://www.kameli.net/marq/?page\\_id=2717](http://www.kameli.net/marq/?page_id=2717)) - possibly other tools too.

#### Export as Bitmap

This exports the final image as a JPG, PNG, BMP or GIF file.

### Edit



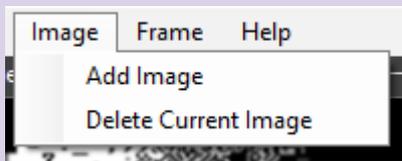
#### Copy Final Image to Clipboard

This copies the final image (bottom left panel) to clipboard. This could then be pasted into another program (such as photoshop / or MS Paint) Note that CTRL+C will perform the same action

#### Experimental - PLUS4 Palette Toggle

Click on this option to toggle between the Commodore Plus4 palette. Note that currently, many other C64-specific options will not work in this mode, such as the target palette, remap palette, border and screen colours. These are disabled (removed from view when PLUS4 mode is enabled) It is recommended to export as PETSCII.C format for further editing in other PETSCII editors which handled PLUS4 if necessary

## Image



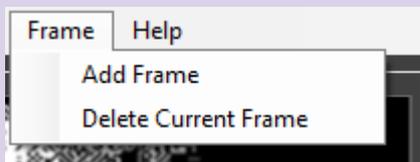
### Add Image

This will add an image to your project.  
This performs the same action as *Open / Open Image*  
See *Open / Open Image* for more details

### Delete Current Image

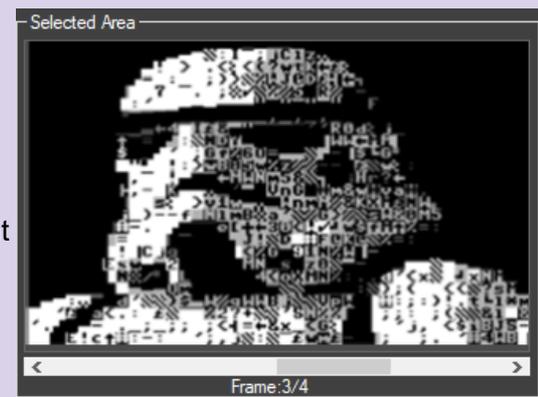
This will delete the current image and all of its frames

## Frame



### Add Frame

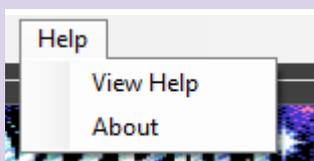
This will add a frame to your image  
You can have multiple frames for each image, each with different PETSCII settings.  
As with multiple images, a scroll bar under the Frame panel allows you to select the frame.



### Delete Current Frame

This deletes the current frame

## Help



### View Help

Displays this information in a browser window (hopefully)

About

Displays credits / version info

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**The End.**

Enjoy.

Jason