

Image Processor User Manual

- *how to initialise & run the processor*

To make running this processor as easy as possible, it is (really) recommended to place the images you wish to edit into the same directory as the processor, be it individually or in a folder. Batch image jobs should definitely be placed in a folder, for better organisation.

In the folder you have placed the processor, open terminal and enter -

```
./IMGPRO
```

From here we can either hit enter and go into *Basic Editing Mode*, and run through a user friendly menu system for editing, previewing and saving single images or we can enter in further arguments to reach *Advanced Editing Mode*.

Supported formats -

BMP, PNM (PPM/PGM/PBM), XPM, LBM, PCX, GIF, PNG, TGA, and TIF formats.
(if your image is a .tiff, just rename it .tif)

Both menu systems and the correct inputs are outlined below.

- *basic editing mode*

Basic Editing Mode is really useful for users to get to grips with the filters the processor offers. Once you have entered Basic using `./IMGPRO`, you'll be presented with the following menu choices for applying your chosen settings to a single image.

'Frame Input -'	<i>the name of your file, could be 'image1.bmp', or 'directory/image1.bmp'</i>
'Filter Mode -'	<i>filter selection, choose from the following inputs</i> <i>'bw' – Greyscale</i> <i>'rf' – Red Channel Filter</i> <i>'gf' – Green Channel Filter</i> <i>'bf' – Blue Channel Filter</i> <i>'in' – Inversion Filter (Negative)</i> <i>'st' – Standard Inputs (No Filter Mode)</i>
'Brightness Value -'	<i>ranges between -255 (darken) to 255 (brighten), where 0 is no change.</i>
'Contrast Value -'	<i>ranges between -255 (less contrast) to 255 (more contrast), 0 no change.</i>
'Blur Value -'	<i>ranges between 0 (no blur) to 500 (lots and lots of blur).</i>
'Sharpen Value -'	<i>ranges between 0 (no sharpen) to 500 (really really really sharp).</i>
'Highlight Value -'	<i>ranges between 0 and 255, only pixels with values above input will display.</i>
'Glare Value -'	<i>ranges between 0 and 255, pixels with value over input value will glare.</i>
'Threshold Value -'	<i>ranges between 0 and 255, pixels with value over input go white, else go black.</i>
'Gamma Value -'	<i>recommended input between 0.2 and 5.0, where 1.0 is no change.</i>

Whilst the preview window is open, you can save the result by pressing 'S' on the keyboard and quit by pressing 'Q', if you close without saving the result is discarded.

Example input for an image in Basic Editing Mode-

```
i7463487@wg0637:IMGPRO$ ./IMGPRO  
  
Basic Editing Enabled, for Image Transfer & Batch Edit, please read the documentation.  
Frame Input - bliss1.bmp  
Image 'bliss1.bmp' Loaded  
Filter Mode - bw  
Brightness Value (-255 to 255) - 20  
Contrast Value (-255 to 255) - 20  
Blur Value (0 to 500) - 0  
Sharpen Value (0 to 500) - 20  
Highlight Value (0 to 255) - 0  
Glare Value (0 to 255) - 200  
Threshold Value (0 to 255) - 0  
Gamma Value (No change = 1.0, otherwise 0.2 to 5.0) - 1.0  
Greyscale Filter Selected
```

This loads 'bliss1.bmp', adds a greyscale filter, adds brightness of 20, adds contrast of 20, sharpens by a value of 20, adds glare for values over 200 and leaves the existing gamma values intact.



Illustration 1: Original Image 'bliss1.bmp'



Illustration 2: Resulting Image

- **advanced editing mode**

Advanced Editing Mode allows advanced users to enter all the required values at once, allows use of the image colour transfer feature and use of frame batch editing. The arguments are outlined below:

Standard, Inversion and Colour Filter Editing -

```
./IMGPRO [filename.ext] [filtermode] [1] [2] [3] [5] [6] [7] [8] [pr/sr] [framecount]
```

Image Transfer -

```
./IMGPRO [filename.ext] [tr] [sourceimage.ext] [1] [2] [3] [5] [6] [7] [8] [pr/sr] [framecount]
```

IMPORTANT NOTE – Images loaded in Advanced Mode must end with a number. If you only wish to edit one image, simply add '1' before the filetype extension in the system. So, 'image.png' must be renamed 'image1.png', but when being entered in the command-line, it must be entered as image.png, the application automatically adds the numbers for loading.

[filename1.ext]	Input filename with filetype extension
[filtermode]	'bw' – Greyscale 'rf' – Red Channel Filter 'gf' – Green Channel Filter 'bf' – Blue Channel Filter 'in' – Inversion Filter (Negative) 'st' – Standard Inputs (No Filter Mode) 'tr' – for image transfer (Requires second image input)
[sourceimage.ext]	Input filename with filetype extension for sourcing colour for transfer.
[1]	Brightness Input (ranges between -255 (darken) to 255 (brighten), where 0 is no change)
[2]	Contrast Input (ranges between -255 (darken) to 255 (brighten), where 0 is no change)
[3]	Blur Input (ranges between 0 (no blur) to 500 (lots and lots of blur).
[4]	Sharpen Input (ranges between 0 (no sharpen) to 500 (really really really sharp))
[5]	Gamma Input (recommended input between 0.2 and 5.0, where 1.0 is no change.)
[6]	Highlight Input (ranges between 0 and 255, only pixels with values above input will display.)
[7]	Glare Input (ranges between 0 and 255, pixels with value over input value will glare)
[8]	Threshold Input (ranges between 0 and 255, pixels with value over input go white, else go black.)
[pr/sr]	Preview Result with 'pr' or Save Result with 'sr'
[framecount]	For batch images, enter the number of frames you wish to count through. If only one frame is required, enter 0.

For batch edits images are loaded in the following format - [{file name1} + {frame number} + {.ext}]

An example follows -

```
./IMGPRO images/frame1.png rf 20 10 5 0 1.0 0 0 0 sr 4
```

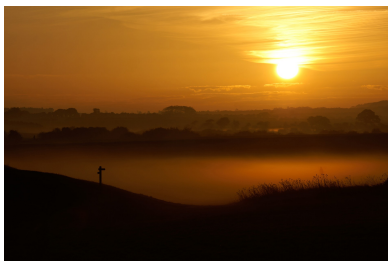
1. Loads frame1.png from the 'images' folder, applies a red filter.
2. Edit with brightness 20, contrast 10, blur 5, sharpen 0, gamma unchanged, highlight 0, glare 0, threshold 0.
3. Sets to save result in processed folder instead of preview.
4. Continues until frame 4 is reached.

***So the processor will load, edit and save results of the following frames-
frame1.png, frame2.png, frame3.png, frame4.png***

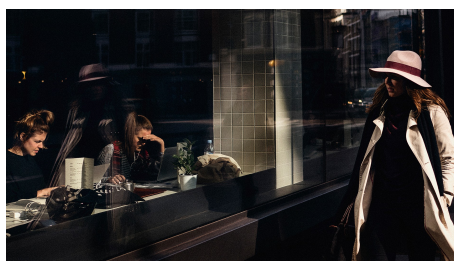
```
File Edit View Search Terminal Help
i7463487@wg0637:IMGPRO$ ./IMGPRO images/frame.png rf 20 10 5 0 1.0 0 0 0 sr 4
Image 'images/frame.png' Loaded
Processing Frame: 1 of 4
Processing Frame: 2 of 4
Processing Frame: 3 of 4
Processing Frame: 4 of 4
Frame process complete.
i7463487@wg0637:IMGPRO$
```

Using Image Transfer -

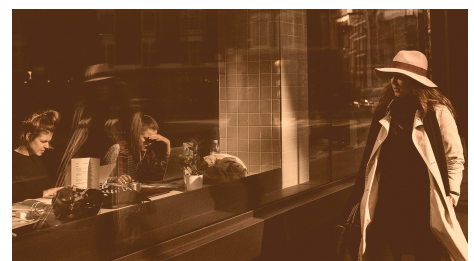
The image transfer feature allows the user to essentially transfer the 'grade' or 'feel' (colours) of an image onto another image.



Source Image



Target Image



Result Image

Using a similar arguments system we just declare 'tr' as the filter mode, followed by the source image, along with the rest of the edits wished to be made to the resulting image.

```
./IMGPRO images/frame1.png tr bliss1.bmp 20 10 5 0 1.0 0 0 0 pr 0
```

1. Loads 'frame1.png' from the 'images' folder, applies the colour transfer from 'bliss1.bmp'
2. Edit with brightness 20, contrast 10, blur 5, sharpen 0, gamma unchanged, highlight 0, glare 0, threshold 0.
3. Previews the result in a window.

