


# Interactive Image Manipulation with popi

~/gocode/popio/presentation/f.png - Sublime Text

f.png



512x512 pixels, 111602 bytes

~/gocode/popio/presentation/f.popi - Sublime Text

f.popi

```
r ajs
new=(x<X/2)?Z-ajs:ajs
w f

```

[Finished in 73ms]

Line 4, Column 1

Tab Size: 4

# popi (portable pico)



popi is the portable version of the pico program, described in “Beyond Photography: The Digital Darkroom” by Gerard Holzmann.

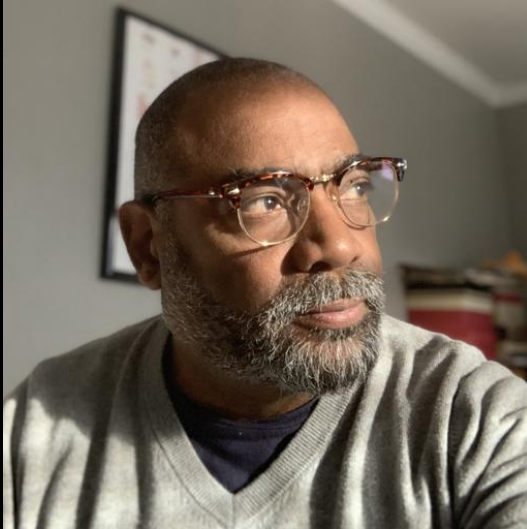
popi works with square, 8-bit (0-255, black-white) raw grayscale images.

# popio (popi I/O)

```
popio -import < ajs.jpg > ajs
```

run popi

```
popio -export < ajs > f.png
```



original image



raw image



edited image

popio is a Go program to import and export raw popi images. popio reads from stdin and writes to stdout in two modes; (1) read images (JPEG or PNG) writing to raw, and (2) read raw files and write to PNG.

# Editor Set up

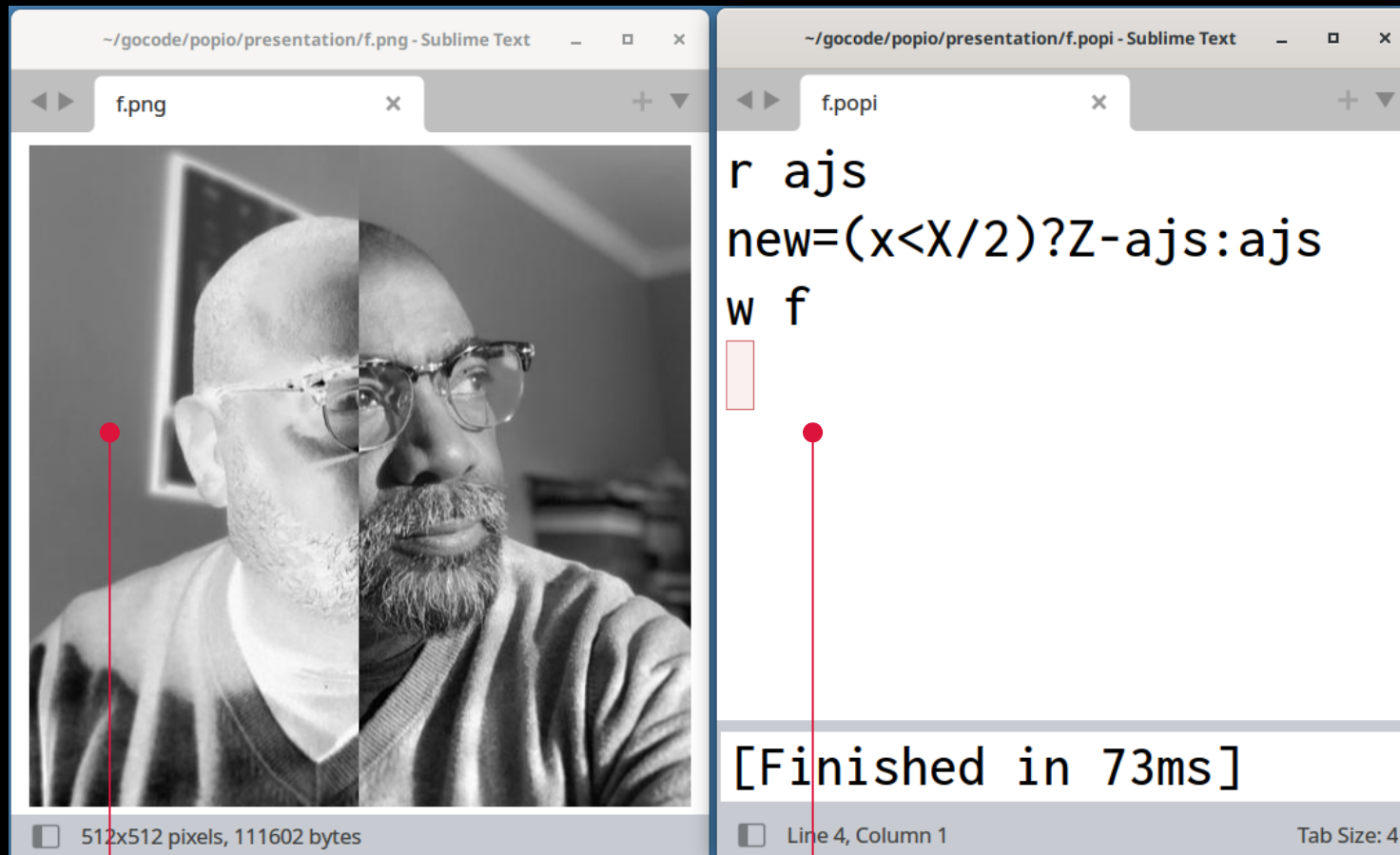


image in another editor tab

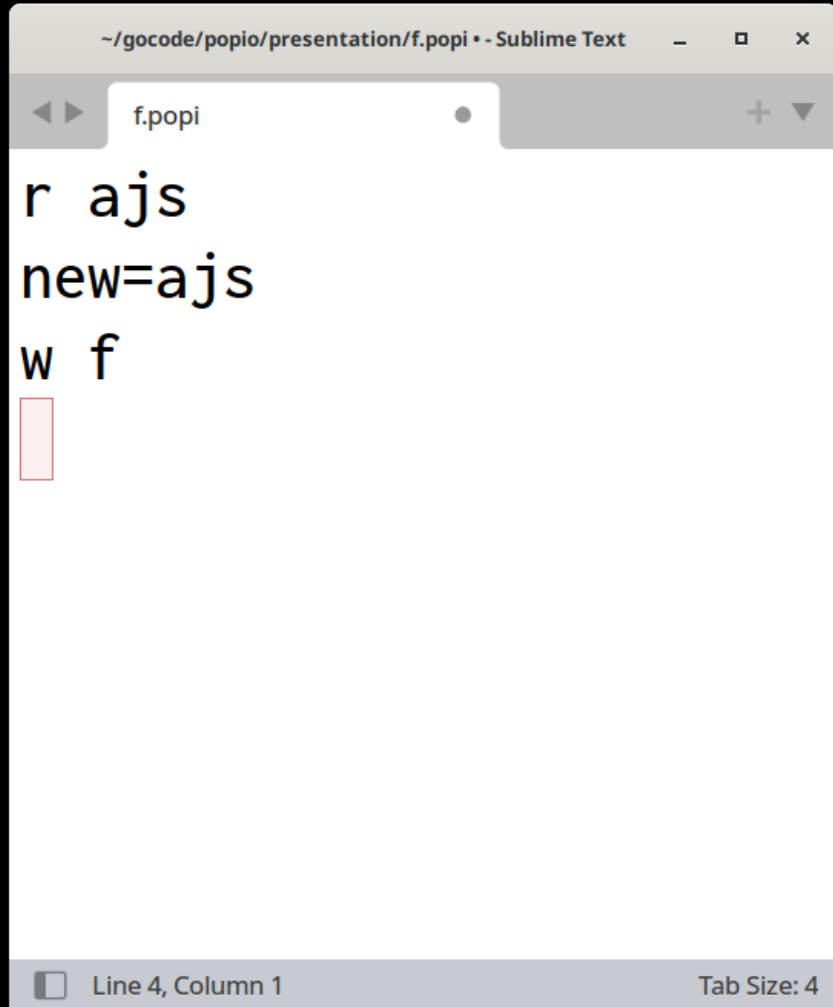
f.png

popi script in editor

popi < \$file; popio -export < f > f.png

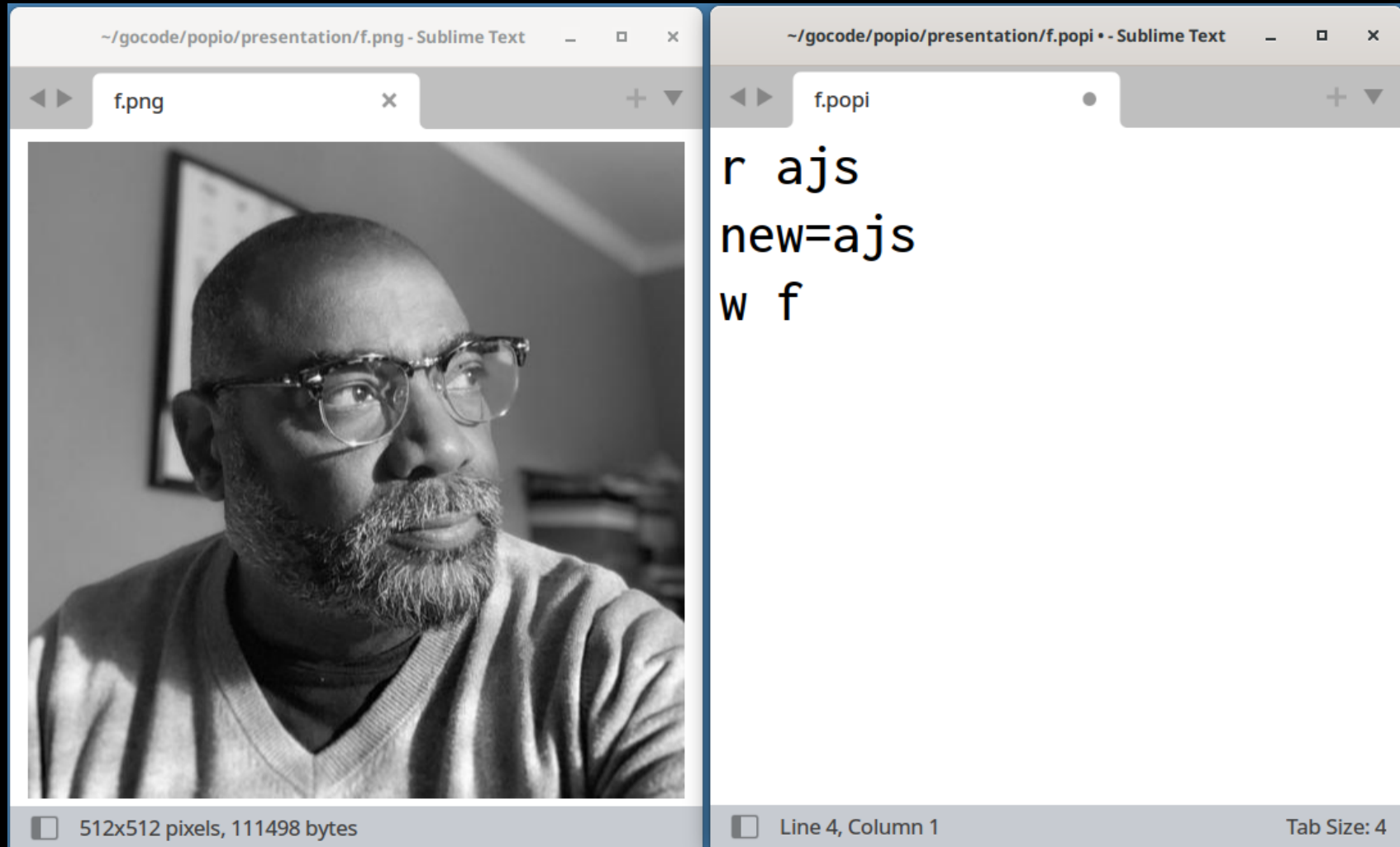
Running the build system (Ctrl- or Cmd-B) within the editor runs the script, making the output shown in another editor tab. To change the output, edit the script and re-run the build.

# Editor with popi code

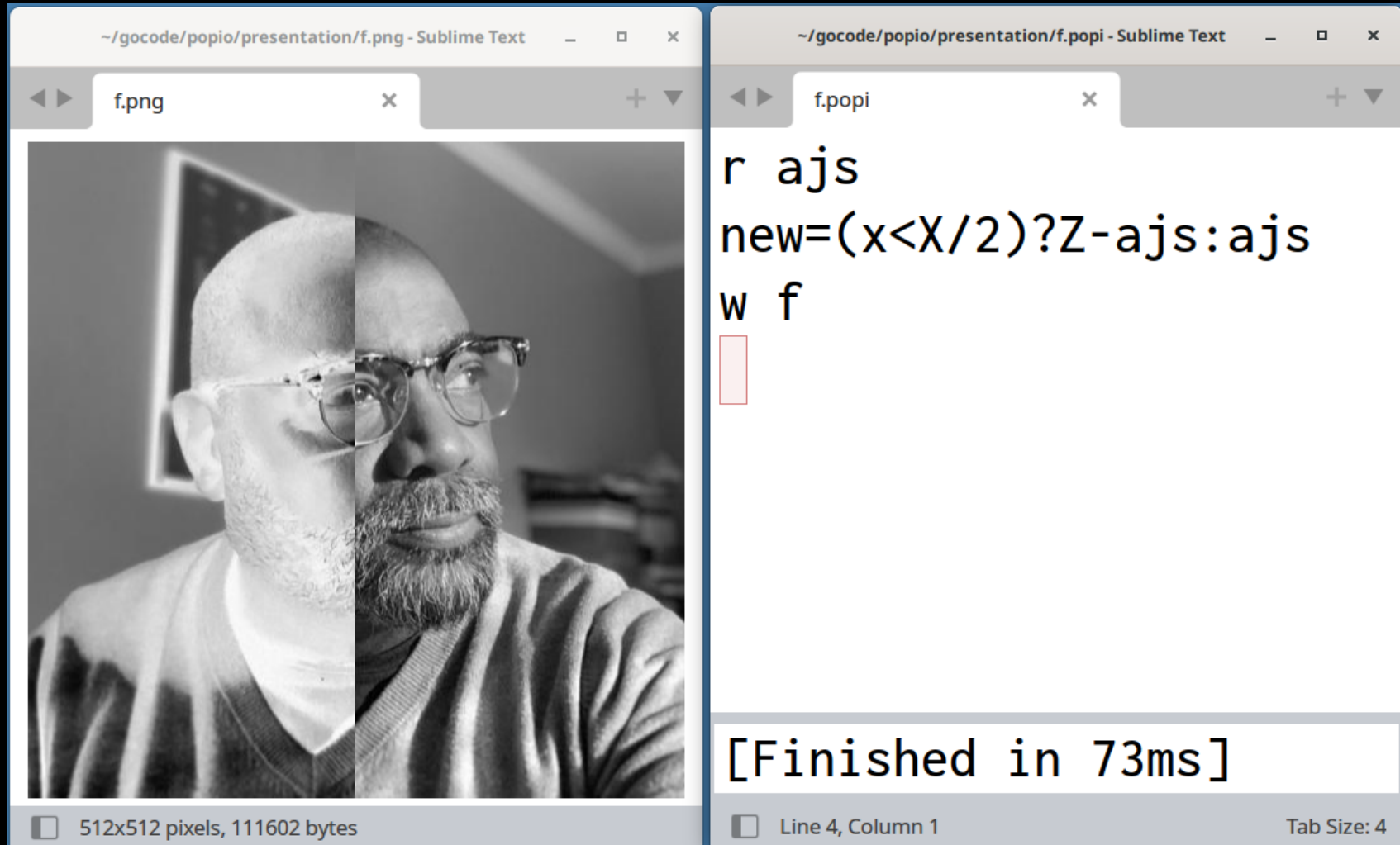


```
~/gocode/popio/presentation/f.popi • Sublime Text  
f.popi  
r ajs  
new=ajs  
w f  
█  
Line 4, Column 1 Tab Size: 4
```







# Editor and Image



# Update and re-build






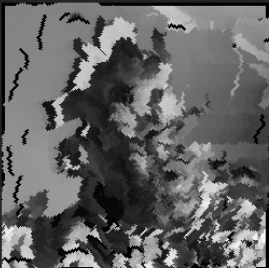


# Examples

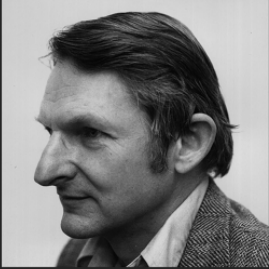





	<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=doug w f q  [Finished in 30ms] Line 4, Column 9    Tab Size: 4</pre>		<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=(doug+gerard)/2 w f q  [Finished in 33ms] Line 4, Column 20   Tab Size: 4</pre>
	<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=gerard w f q  [Finished in 27ms] Line 4, Column 11; Build finished</pre>		<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=(x&lt;X/2)?doug:gerard w f q  [Finished in 40ms] Line 4, Column 24   Tab Size: 4</pre>
	<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=hilary w f q  [Finished in 31ms] Line 4, Column 11; Build finished</pre>		<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=(x&lt;X/2)?hilary:doug w f q  [Finished in 31ms] Line 4, Column 24   Tab Size: 4</pre>



# Examples

	<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r ajs new=ajs w f q  [Finished in 26ms] Line 2, Column 8; Build finished</pre>		<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r ajs new=ajs o w f  [Finished in 83ms] Line 3, Column 2 Tab Size: 4</pre>
	<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r ajs new=Z-ajs w f q  [Finished in 27ms] Line 2, Column 7; Build finished</pre>		<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r ajs new=ajs u w f  [Finished in 30ms] Line 3, Column 2; Build finished</pre>
	<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r ajs new=ajs*2 w f q  [Finished in 51ms] Line 2, Column 10 Tab Size: 4</pre>		<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r ajs new=ajs o; u; s w f  [Finished in 105ms] Line 3, Column 8 Tab Size: 4</pre>

# Examples

	<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=doug w f q  [Finished in 30ms] Line 4, Column 9 Tab Size: 4</pre>		<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=(doug+gerard)/2 w f q  [Finished in 33ms] Line 4, Column 20 Tab Size: 4</pre>
	<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=gerard w f q  [Finished in 27ms] Line 4, Column 11; Build finished</pre>		<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=(x&lt;X/2)?doug:gerard w f q  [Finished in 40ms] Line 4, Column 24 Tab Size: 4</pre>
	<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=hilary w f q  [Finished in 31ms] Line 4, Column 11; Build finished</pre>		<pre>~/gocode/popio/popio/f.popi (gift-women) - Sublime Text f.popi r doug r gerard r hilary new=(x&lt;X/2)?hilary:doug w f q  [Finished in 31ms] Line 4, Column 24 Tab Size: 4</pre>

# Building popi

Download shell archive

<https://netlib.org/poplib/bundle>

Download face1.uu

<https://netlib.org/poplib/face1.uu>

```
$ sh bundle # expand shell archive
$ uudecode face1.uu # decode image to raw format
# change DEF_X and DEF_Y in popi.h to specify image size
$ gcc -std=c89 -o popi *.c -lm # build popi
$ ./popi # run popi
-> r face1
-> new=face1
-> w f
-> q
# convert to raw popi image to png
$ popio -export -width 248 -height 248 < f > f.png
$ open f.png # show the image
```

