

# Raspberry Compote

Pseudo-random ramblings about programming and other geeky stuff

Thursday, 11 February 2016

## Low-level Graphics on Raspberry Pi [even more palette]

Another effect with palette: fade in/out. We can - in addition to [rotating the entries](#) - modify the palette entry RGB values on the fly and make the pixels drawn in this color to fade in or out.

Draw some background stuff (blue and white checkerboard), a black block to hold the actual piece and something to fade:

```
...
#define DEF_COLOR 14
#define MOD_COLOR (16 + DEF_COLOR)
...
int x, y;
int t = vinfo.xres / 24;

// t x t pix black and white checkerboard
for (y = 0; y < vinfo.yres; y++) {
    int xoffset = y / t % 2;
    for (x = 0; x < vinfo.xres; x++) {

        // color based on the tile
        int c = ((x / t + xoffset) % 2) == 0 ? 1 : 15;

        // draw pixel
        put_pixel(x, y, c);

    }
}
// black block in the middle
for (y = (vinfo.yres / 2); y < (vinfo.yres / 2 + t); y++) {
    for (x = (vinfo.xres / 4 - t / 2);
         x < (vinfo.xres / 4 * 3 + t / 2); x++)
    {
        put_pixel(x, y, 0);
    }
}
// something in the color in the extended palette
for (y = (vinfo.yres / 2 + t / 4);
     y < (vinfo.yres / 2 + t - t / 4); y++)
{
    int n = 0;
    for (x = (vinfo.xres / 4); x < (vinfo.xres / 4 * 3); x++) {
        if (n % (t / 4)) {
            put_pixel(x, y, MOD_COLOR);
        }
        n++;
    }
}
```

```
#include <linux/kd.h>
#include <stdint.h>
#include "vcio.h"
#include <time.h>

// 'global' variables to store s
int fbfd = 0;
char *fbp = 0;
struct fb_var_screeninfo vinfo;
struct fb_fix_screeninfo finfo;

...

size = 0;
...

... 200
```

### Blog Archive

- ▼ 2016 (6)
  - March (1)
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    - [Low-level Graphics on Raspberry Pi \(more images\)](#)
    - [Modifying Ctrl+Alt+Del behavior in Debian Jessie v...](#)
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    - [Low-level Graphics on Raspberry Pi \(more palette\)](#)
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### Code Repository

- [Low-level Graphics on RPi](#)

### Discussion

- [Low-level Graphics on RPi](#)
- [Python Programming on RPi](#)
- [Java Programming on RPi](#)

### Links

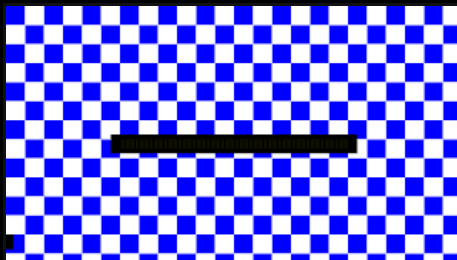
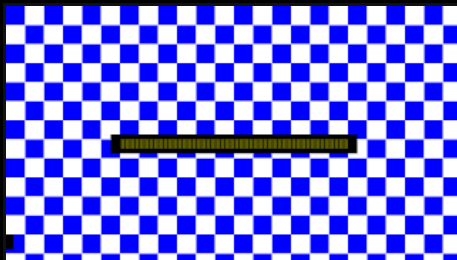
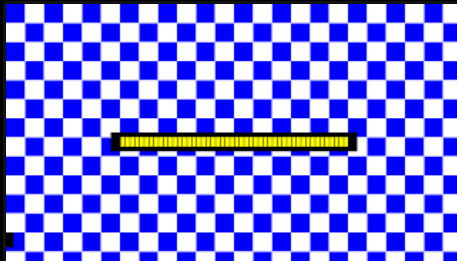
- [Raspberry Pi](#)
- [Python](#)

```
}  
...
```

And then modify the associated palette entry:

```
...  
    // fade palette entry out (to black)" and back in  
    int j;  
    int fps = 60; // frames per second  
    int f = 255;  
    int fd = -2;  
    while (f < 256) {  
        r[DEF_COLOR] = (def_r[14] & f) << 8;  
        g[DEF_COLOR] = (def_g[14] & f) << 8;  
        b[DEF_COLOR] = (def_b[14] & f) << 8;  
        // change fade  
        f += fd;  
        // check bounds  
        if (f < 0) {  
            // change direction  
            fd *= -1;  
            f += fd;  
        }  
        // Note that we set up the 'pal' structure earlier  
        // and it still points to the r, g, b arrays,  
        // so we can just reuse 'pal' here  
        if (ioctl(fbfd, FBIOPUTCMAP, &pal) != 0) {  
            printf("Error setting palette.\n");  
        }  
        usleep(1000000 / fps);  
    }  
    ...
```

Compile with 'gcc -o fbtest5z fbtest5z.c' and run with '. /fbtest5y'. The yellow bars should fade out and back in:



...imagine for example black background and white text fading in and out... movie titles :D

Full code available in [GitHub](#).

Posted by [Unknown](#) at [12:03](#)



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