

`$SPAD/src/lib xdither.c`

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**Abstract**

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# 1 License

```
/*  
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```

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*/
```

— \* —

```
#ifndef MSYSplatform  
  
#include <stdio.h>  
#include <stdlib.h>  
#if !defined(BSDplatform)  

```

```

#include <X11/Intrinsic.h>
#include <X11/StringDefs.h>
#include <X11/cursorfont.h>

#define XDitherWidth 3
#define XDitherMax 10

char XDitherBits[] = {
    0x00, 0x00, 0x00,
    0x00, 0x02, 0x00,
    0x00, 0x03, 0x00,
    0x00, 0x03, 0x02,
    0x00, 0x07, 0x02,
    0x04, 0x07, 0x02,
    0x04, 0x07, 0x03,
    0x05, 0x07, 0x03,
    0x05, 0x07, 0x07,
    0x07, 0x07, 0x07 };

#include "xdither.h1"

Pixmap XDither[XDitherMax];
unsigned int DITHERINIT = 0;

/*
 * This routine has the function of returning the number of characters needed
 * to store a bitmap. It first calculates the number of bits needed per line.
 * Then it finds the closest multiple of 8 which is bigger than the number of
 * bits. Once that is done, it multiplies this number by the number of bits
 * high the bitmap is.
 */
int
dither_char_bitmap(void)
{
    int bits_line;
    int total_chars;

    for (bits_line = 8, total_chars = 1; bits_line < XDitherWidth; total_chars++)
        bits_line += 8;

    total_chars = total_chars * XDitherWidth;

    return total_chars;
}

int
XInitDither(Display *display, int screen, GC gc, unsigned long fg,
            unsigned long bg)

```

```

{

char *bits;
int count;
int chars_bitmap = dither_char_bitmap();
int bit;
XGCValues xgcv;

DITHERINIT = 1;

/*
 * First thing I should do is load in the Pixmaps
 */
bits = (char *) malloc(chars_bitmap * sizeof(char));

for (count = 0; count < XDitherMax; count++) {

    /*
     * Load in the next bitmap
     */
    for (bit = 0; bit < chars_bitmap; bit++)
        bits[bit] = XDitherBits[count * chars_bitmap + bit];

    /*
     * Create it and put it into the Pixmap array
     */
    XDither[count] = XCreatePixmapFromBitmapData(display,
                                                RootWindow(display, screen),
                                                bits,
                                                XDitherWidth, XDitherWidth,
                                                BlackPixel(display, screen),
                                                WhitePixel(display, screen),
                                                1);

}

/*
 * Now reset the gc values to be as I need them
 */
xgcv.background = bg;
xgcv.foreground = fg;
xgcv.fill_style = FillOpaqueStippled;
xgcv.stipple = XDither[4];

XChangeGC(display, gc,
          GCForeground | GCBackground | GCFillStyle | GCStipple, &xgcv);

return (XDitherMax);

}

```

```

int
XChangeDither(Display *display, GC gc, int dither)
{
    if (!DITHERINIT) {
        fprintf(stderr, "XChange Error: Init Not Called\n");
        exit(-1);
    }
    if (dither >= XDitherMax || dither < 0) {
        fprintf(stderr, "Dither %d, out of range\n",dither);
        return (-1);
    }
    XSetStipple(display, gc, XDither[dither]);
    return (1);
}

void
XDitherRectangle(Display *display, Drawable drawable, GC gc, int x,
                 int y, unsigned int width, unsigned int height)
{
    if (!DITHERINIT) {
        fprintf(stderr, "xdither Error: Tried to fill before INIT called\n");
        exit(-1);
    }
    XFillRectangle(display, drawable, gc, x, y, width, height);
}

void
XDitherRectangles(Display *display, Drawable drawable, GC gc,
                  XRectangle *rectangles, int nrectangles)
{
    if (!DITHERINIT) {
        fprintf(stderr, "xdither Error: Tried to fill before INIT called\n");
        exit(-1);
    }
    XFillRectangles(display, drawable, gc,
                    rectangles, nrectangles);
}

void
XDitherPolygon(Display * display, Drawable drawable, GC gc,

```

```

        XPoint *points, int npoints, int shape, int mode)
{
    if (!DITHERINIT) {
        fprintf(stderr, "xdither Error: Tried to fill before INIT called\n");
        exit(-1);
    }

    XFillPolygon(display, drawable, gc,
                 points, npoints, shape, mode);
}

void
XDitherArc(Display *display, Drawable drawable, GC gc, int x, int y,
            unsigned int width, unsigned int height, int angle1, int angle2)
{
    if (!DITHERINIT) {
        fprintf(stderr, "xdither Error: Tried to fill before INIT called\n");
        exit(-1);
    }
    XFillArc(display, drawable, gc, x, y, width,
             height, angle1, angle2);
}

void
XDitherArcs(Display *display, Drawable drawable, GC gc, XArc *arcs, int narcs)
{
    if (!DITHERINIT) {
        fprintf(stderr, "xdither Error: Tried to fill before INIT called\n");
        exit(-1);
    }
    XFillArcs(display, drawable, gc, arcs, narcs);
}
#endif /* MSYSplatform */

```

## References

- [1] nothing