

```

/* Engine.c - Execute me to compile me with SAS/C 5.10a
LC -cfistg -v -y -j73 Engine.c
quit ;*/

#include <exec/types.h>
#include <exec/memory.h>
#include <dos/dostags.h>
#include <dos/dos.h>
#include <diskfont/diskfonttag.h>
#include <diskfont/diskfont.h>
#include <diskfont/glyph.h>
#include <diskfont/oterrors.h>
#include <utility/tagitem.h>
#include <string.h>

#include <clib/dos_protos.h>
#include <clib/exec_protos.h>
#include <clib/utility_protos.h>
#include <clib/bullet_protos.h>

#define OTAG_ID 0x0f03 /* this really belongs in <diskfont/diskfont.h>, */
/* but it's not there, yet. */

extern UBYTE *librarystring; /* ".library", defined in BulletMain.c. */

struct TagItem *AllocOtag(STRPTR);
void FreeOtag(void *);
struct Library *OpenScalingLibrary(struct TagItem *);
void CloseScalingLibrary(struct Library *);
struct GlyphEngine *GetGlyphEngine(struct TagItem *, STRPTR);
void ReleaseGlyphEngine(struct GlyphEngine *);

#define BUFSIZE 256

extern struct Library *BulletBase, *UtilityBase;

/*****
/* open the otag file, allocate a buffer, read the file into the buffer, verify that */
/* the file is OK, relocate all of the address relocation tags, close the otag file. */
*****/
struct TagItem *
AllocOtag(STRPTR otagname)
{
    BPTR otfile;
    struct TagItem *ti, *tip, *returnti;
    struct FileInfoBlock *fib;

    ti = NULL;

    if (fib = AllocDosObject(DOS_FIB, NULL)) /* The FileInfoBlock of the OTAG file */
    { /* contains the file's size. */
        if (otfile = Open(otagname, MODE_OLDFILE))
        {
            if (ExamineFH(otfile, fib))
            {
                if (returnti = (struct TagItem *) AllocVec(fib->fib_Size, MEMF_CLEAR))
                {
                    if (Read(otfile, (UBYTE *) returnti, fib->fib_Size))
                    {
                        if ((returnti->ti_Tag == OT_FileIdent) /* Test to see if */
                            && (returnti->ti_Data == (ULONG) fib->fib_Size)) /* the OTAG file */
                        { /* is valid. */
                            tip = returnti;
                            while (ti = NextTagItem(&tip)) /* Step through and relocate tags */
                            {
                                if (ti->ti_Tag & OT_Indirect)
                                {
                                    ti->ti_Data = (ULONG) returnti + ti->ti_Data;
                                }
                            }
                        }
                    }
                }
            }
        }
    }
    Close(otfile);
}

```

```

    }
    FreeDosObject(DOS_FIB, fib);
}
return (returnti);
}

/*****
*****/
void
FreeOtag(void *vector)
{
    FreeVec(vector);
}

/*****
*****/
struct Library *
OpenScalingLibrary(struct TagItem * ti)
{
    STRPTR enginename;
    UBYTE libnamebuffer[BUFSIZE];

    if (enginename = (STRPTR) GetTagData(OT_Engine, NULL, ti))
    {
        strcpy(libnamebuffer, enginename);
        strcat(libnamebuffer, librarystring);

        return (OpenLibrary(libnamebuffer, 0L));
    }
    return(NULL); /* <---- BUG!-- This line was missing in the original */
/* publication of this code module. */

/*****
*****/
void
CloseScalingLibrary(struct Library * bbase)
{
    CloseLibrary(bbase);
}

/*****
*****/
struct GlyphEngine *
GetGlyphEngine(struct TagItem * ti, STRPTR otagpath)
{
    struct GlyphEngine *ge = NULL;
    BOOL ok = TRUE;

    if (ge = OpenEngine())
    {
        ok = FALSE;
        if (SetInfo(ge,
            OT_OTagList, ti,
            OT_OTagPath, otagpath,
            TAG_END) == OTERR_Success)
        {
            if (SetInfo(ge,
                OT_DeviceDPI, ((ULONG) 77) << 16 | 75,
                TAG_END) == OTERR_Success)
            {
                ok = TRUE;
            }
        }
    }

    if (!ok)
    {

```

```

    CloseEngine(ge);
    ge = NULL;
}
return (ge);
}

/*****
/***** Deallocates resources allocated by GetGlyphEngine(). *****/
/*****
void
ReleaseGlyphEngine(struct GlyphEngine * ge)
{
    CloseEngine(ge);
}

```

```

/* BulletMain.c - Execute me to compile me with SAS/C 5.10a
LC -cfistq -v -y -j73 BulletMain.c
quit ;*/

#include <exec/types.h>
#include <exec/memory.h>
#include <dos/rdargs.h>
#include <dos/dos.h>
#include <dos/var.h>
#include <diskfont/diskfonttag.h>
#include <diskfont/diskfont.h>
#include <diskfont/glyph.h>
#include <diskfont/oterrors.h>
#include <utility/tagitem.h>
#include <string.h>
#include <graphics/displayinfo.h>
#include <intuition/intuition.h>
#include <intuition/screens.h>

#include <clib/dos_protos.h>
#include <clib/graphics_protos.h>
#include <clib/exec_protos.h>
#include <clib/utility_protos.h>
#include <clib/bullet_protos.h>
#include <clib/intuition_protos.h>

#define OTAG_ID 0x0F03

#ifdef LATTICE
int CXBRK(void) { return (0); } /* Disable Lattice CTRL/C handling */
int chkabort(void) { return (0); }
#endif

UBYTE *readargsstring = "fontName,Size/N,XDPI/N,YDPI/N,CharCode/N,CharCode2/N\n";
UBYTE *librarystring = ".library";
UBYTE *fontstring = "fonts:cgtimes.font";
UBYTE *dpivarname = "XYDPI"; /* Name of an X/Y DPI environment variable. */
/* If this ENV: variable exists, this code */
/* will use the X and Y DPI stored there. */
/* This code will also save the X and Y DPI */
/* in XYDPI if the user supplies a DPI. */
/* XYDPI encodes the DPI just like the */
/* OT_DeviceDPI tag. */

extern struct TagItem *AllocOtag(STRPTR);
extern void FreeOtag(void *);
extern struct Library *OpenScalingLibrary(struct TagItem *);
extern void CloseScalingLibrary(struct Library *);
extern struct GlyphEngine *GetGlyphEngine(struct TagItem *, STRPTR);
extern void ReleaseGlyphEngine(struct GlyphEngine *);
extern void
BulletExample(struct GlyphEngine *,
              struct Window *,
              struct RastPort *, ULONG, ULONG, ULONG, ULONG, ULONG);

#define BUFSIZE 256

#define NUM_ARGS 6 /* Arguments for ReadArgs(). */
#define FONT_NAME 0
#define SIZE 1
#define XDPI 2
#define YDPI 3
#define CODE 4
#define CODE2 5
LONG args[NUM_ARGS];
struct RDargs *myrda;

struct Library *BulletBase, *UtilityBase, *GfxBase, *IntuitionBase;

UBYTE buf[BUFSIZE];
BPTR fontfile, dpifile;
UBYTE *otagname;
UWORD fchid;

struct GlyphEngine *ge;

```



```

/* Rotate.c - Execute me to compile me with SAS/C 5.10a
LC -cfistq -v -y -j73 Rotate.c
Blink FROM LIB:c.o,BulletMain.o,engine.o,Rotate.o TO Rotate LIBRARY
LIB:LC.lib,LIB:Amiga.lib
quit ;*/

#include <exec/types.h>
#include <diskfont/diskfonttag.h>
#include <diskfont/diskfont.h>
#include <diskfont/glyph.h>
#include <diskfont/oterrors.h>
#include <graphics/gfx.h>
#include <graphics/regions.h>
#include <utility/tagitem.h>
#include <intuition/intuition.h>
#include <devices/timer.h>

#include <clib/alib_stdio_protos.h>
#include <clib/alib_protos.h>
#include <clib/bullet_protos.h>
#include <clib/exec_protos.h>
#include <clib/layers_protos.h>
#include <clib/graphics_protos.h>
#include <clib/intuition_protos.h>

extern struct Library *BulletBase, *UtilityBase, *GfxBase, *IntuitionBase;
struct Library *LayersBase;
void      BulletExample(struct GlyphEngine *,
                        struct Window *,
                        struct RastPort *,
                        ULONG, ULONG, ULONG, ULONG, ULONG);

UBYTE      *vers = "\e0$VER: Rotate 38.9";

#define TABLE_ENTRIES 24
#define SINE_INDEX 0
#define COSINE_INDEX 1

/* precalculated sine and cosine */
LONG      table[TABLE_ENTRIES][2] =
{
  {0x0, 0x10000}, /* 0 degrees */ /* Notice that the sine and cosine */
  {0x424e, 0xf747}, /* 15 degrees */ /* values have to correspond to the */
  {0x8000, 0xddb4}, /* 30 degrees */ /* same angle. The IntelliFont */
  {0xb505, 0xb505}, /* 45 degrees */ /* engine will have severe mental */
  {0xddb4, 0x8000}, /* 60 degrees */ /* problems if the values aren't */
  {0xf747, 0x424e}, /* 75 degrees */ /* close to representing the same */
  {0x10000, 0x0}, /* 90 degrees */ /* angle. */
  {0xf747, 0xffffbdbc}, /* 105 degrees */
  {0xddb4, 0xffff8000}, /* 120 degrees */
  {0xb505, 0xffff4afb}, /* 135 degrees */
  {0x8000, 0xffff224c}, /* 150 degrees */
  {0x424e, 0xffff08b9}, /* 165 degrees */
  {0x0, 0xffff0000}, /* 180 degrees */
  {0xffffbdbc, 0xffff08b9}, /* 195 degrees */
  {0xffff8000, 0xffff224c}, /* 210 degrees */
  {0xffff4afb, 0xffff4afb}, /* 225 degrees */
  {0xffff224c, 0xffff8000}, /* 240 degrees */
  {0xffff08b9, 0xffffbdbc}, /* 255 degrees */
  {0xffff0000, 0x0}, /* 270 degrees */
  {0xffff08b9, 0x424e}, /* 285 degrees */
  {0xffff224c, 0x8000}, /* 300 degrees */
  {0xffff4afb, 0xb505}, /* 315 degrees */
  {0xffff8000, 0xddb4}, /* 330 degrees */
  {0xffffbdbc, 0xf747} /* 345 degrees */
};

struct Rectangle rectangle;
struct Region *region;

void
BulletExample(struct GlyphEngine *ge,
              struct Window *w, struct RastPort *rp,
              ULONG pointheight, ULONG xdpi, ULONG ydpi, ULONG unicode, ULONG unicode2)
{
  struct GlyphMap *gm;
  PLANEPTR      tempbitmap;

```

```

ULONG      centerx, centery, x, y, dx, dy, sin, cos, oldx, oldy, olddx,
olddy, emheight, emwidth;
ULONG      i = 0;

struct IntuiMessage *mymsg;
BOOL      done = FALSE;

if (pointheight > 180) pointheight = 180;

if (SetInfo(ge,
            OT_DeviceDPI, ((ULONG) xdpi) << 16 | ydpi,
            TAG_END) != OTERR_Success)
  return;

emheight = (pointheight * ydpi) / 72; /* Calculate the pixel dimensions */
emwidth = (pointheight * xdpi) / 72; /* of the EM square. */
centerx = w->BorderLeft + emheight;
centery = w->BorderTop + emwidth;

dx = (2 * emwidth) + w->BorderLeft + w->BorderRight; /* Calculate window size to */
dy = (2 * emheight) + w->BorderTop + w->BorderBottom; /* fit around glyph com- */
dx = (dx > 640) ? 640 : dx; /* fortably. */
dy = (dy > 200) ? 200 : dy;
dx = (dx < 80) ? 80 : dx;
dy = (dy < 50) ? 50 : dy;

if (ModifyIDCMP(w, IDCMP_CHANGEWINDOW))
{
  ChangeWindowBox(w, w->LeftEdge, w->TopEdge, dx, dy); /* Set window size */
  WaitPort(w->UserPort); /* and wait for the */
  while (mymsg = (struct IntuiMessage *) GetMsg(w->UserPort)) /* dimension change */
    ReplyMsg((struct Message *) mymsg); /* to take place. */
  if (!(ModifyIDCMP(w, NULL))) return; /* Quit if there is a problem with IDCMP. */
}

x = centerx; /* calculate original rendering position. */
y = centery;
dx = 1; /* Since dx and dy are no longer necessary for figuring out the window */
dy = 1; /* dimensions, I use them to measure the full width and height of the */
/* glyph bitmap supplied by bullet. I need this to erase the glyph. */

if (LayersBase = OpenLibrary("layers.library", 37L)) /* These lines are */
{
  rectangle.MinX = w->BorderLeft; /* here to install */
  rectangle.MinY = w->BorderTop; /* a clipping */
  rectangle.MaxX = w->Width - w->BorderRight - 1; /* region to the */
  rectangle.MaxY = w->Height - w->BorderBottom - 1; /* window to keep */
  /* the glyph within */
  /* window bounds. */
  if (region = NewRegion()) /* For more information, */
  {
    if (OrRectRegion(region, &rectangle)) /* see the "Layers" */
    {
      InstallClipRegion(w->WLayer, region); /* chapter of the */
      /* RKR: Libraries */
      /* Manual. */
    }
  }
  if (SetInfo(ge,
            OT_GlyphCode, unicode, /* Set the glyph to */
            OT_PointHeight, (ULONG) pointheight << 16, /* rotate and its */
            TAG_END) == OTERR_Success) /* pointsize. */
  {
    SetDrMd(w->RPort, JAM1);
    if (tempbitmap = AllocRaster(640, 200))
    {
      if (ModifyIDCMP(w, IDCMP_CLOSEWINDOW)) /* Turn on close window reports */
      {
        for (i = 0; done == FALSE; i++) /* so the example can quit. */
        {
          if (i == TABLE_ENTRIES)
            i = 0;

          sin = table[i][SINE_INDEX]; /* Step through the sine/cosine array */
          cos = table[i][COSINE_INDEX]; /* 360 degrees @ 15 degree increments */

          if (SetInfo(ge,
                    OT_RotateSin, sin, /* Set the current rotation angle. */
                    OT_RotateCos, cos,
                    TAG_END) == OTERR_Success)
          {

```