libcrtxy

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Source: https://libcrtxy.sourceforge.net/

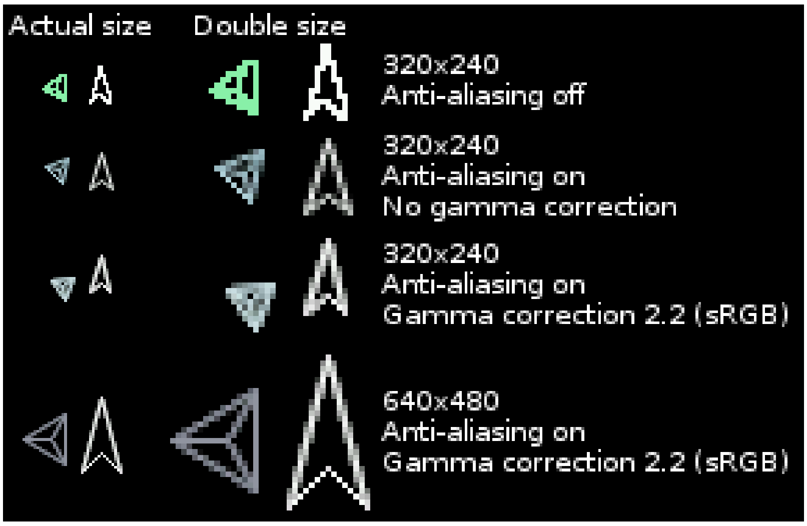

Figure 1. Draw lines, make games.

1. News

- September 11, 2009 - Last code changes were from December, then life got in the way! I just rolled together a 0.0.4 source tarball.

2. Purpose

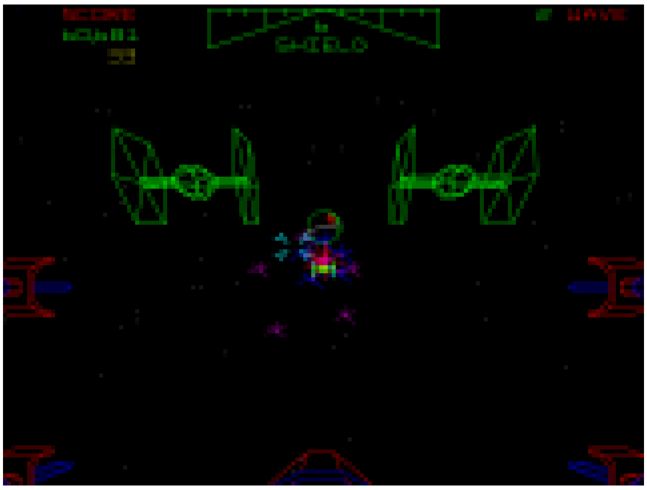

Figure 2. 'Star Wars' by Atari, 1983

The purpose of `libcrtxy` is to provide an easy way to create vector-graphics-basic games, similar to arcade games of the late 1970s and early 1980s, such as **Star Wars** (KLOV | Wikipedia), **Battlezone** (KLOV | Wikipedia), **Lunar Lander** (KLOV | Wikipedia), **Asteroids** (KLOV | Wikipedia), **Tempest** (KLOV | Wikipedia), and, of course, **Space Wars** (KLOV | Wikipedia).

3. What's the Point?

Some of my first games for modern systems (X-Window on Solaris in the late 1990s) were 3D games drawn using vector outlines (e.g., ICBM3D). One of my games, Vectoroids, has been ported to many platforms, including mobile devices and handheld game systems. This is no doubt because it's scalable (thanks to vector graphics), doesn't require much horsepower (it uses fixed-point math and trigonometric look-up tables), and is written atop a highly portable library (libSDL).

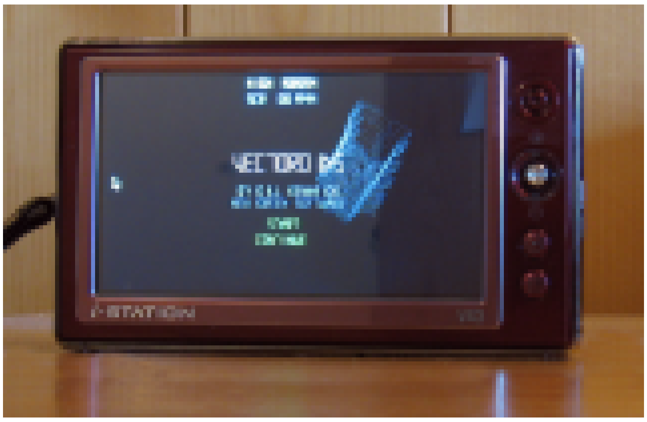

Figure 3. 'Vectoroids' on an i-Station V43 music player (Original, libSDL-based version)

I have a number of years experience doing cellphone game development on `BREW` and `J2ME`. The games that were easiest to port were some classic-arcade-style vector games, for the same reasons Vectoroids has been ported so often.

While doing mobile game development, one learns that there are many screen sizes to deal with, many CPU speeds to deal with, and therefore it's easiest to think of your game in a virtual canvas, and map those positions onto the physical screen. To keep gameplay timing and movement close, regardless of the different sizes and speeds of phone it will run on, frame-rate independent code works best.

libcrtxy puts these concepts together into a light API on top of libSDL.

4. Goal

My goals for libcrtxy are:

- Don't care about CPU or FPU — be fast, encourage framerate independence, and encourage use of fixed-point math.
- Scale — screen size shouldn't matter to a vector-based game, since vectors scale. A game should play, more-or-less, the same on a 2GHz PC with an Nvidia graphics card as it does on a 200MHz ARM-based handheld with a 320x240 screen.
- Look like an arcade game — on systems with the horsepower, it should be possible for a game to look a lot like a real arcade CRT with glowing phosphors. (On systems that don't, degrade to pixelated lines.)
- Developers of games don't decide the rendering level — **it's up to the user** (or the person packaging the game, say for some particular handheld game system or embedded platform) to decide how "nice" the game should look.
    - Environment variables
    - Config. files
    - Command-line options
- Open source license — libcrtxy is released under the GNU Lesser General Public License (LGPL), version 2.1. This means you may use it in both open source and commercial games.

5. Screenshots

Below are some screenshots of the test programs that come with libcrtxy 's source. When comparing two renders, remember that the game was not recompiled. libcrtxy itself was given a different set of options — via the library's configuration file, via command-line options to the app. which were then passed to the library, and/or via environment variable.

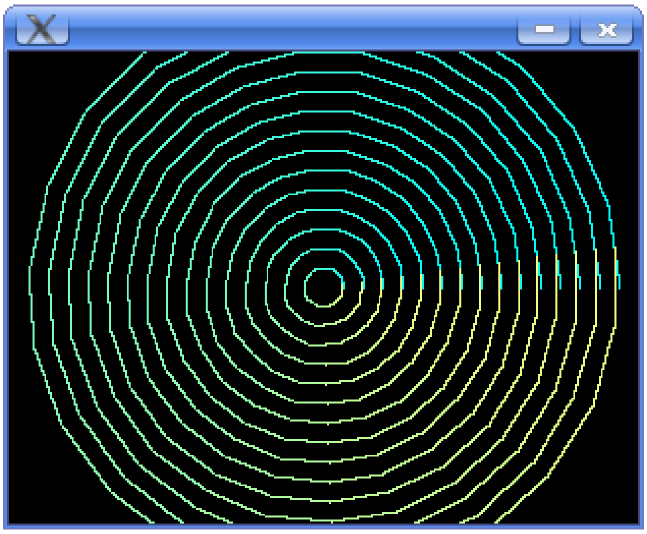

Figure 4. Drawlines demo at 320x200. Anti-aliasing, alpha-blending and backgrounds are all **off**.

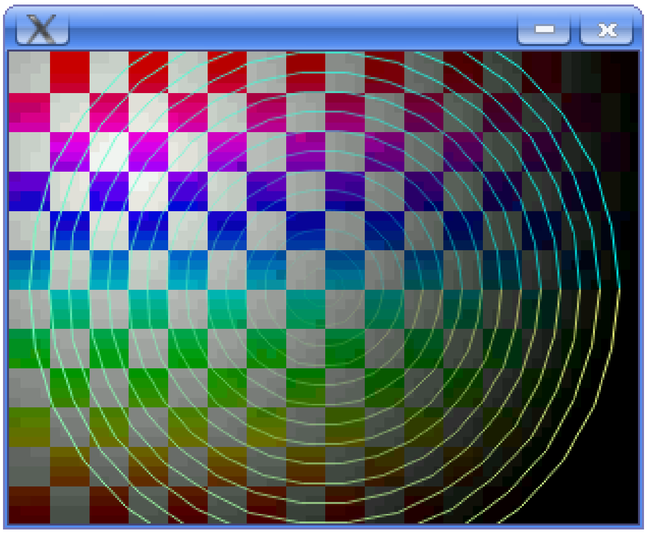

Figure 5. Drawlines demo at 320x200. Anti-aliasing, alpha-blending and backgrounds are all **on**.

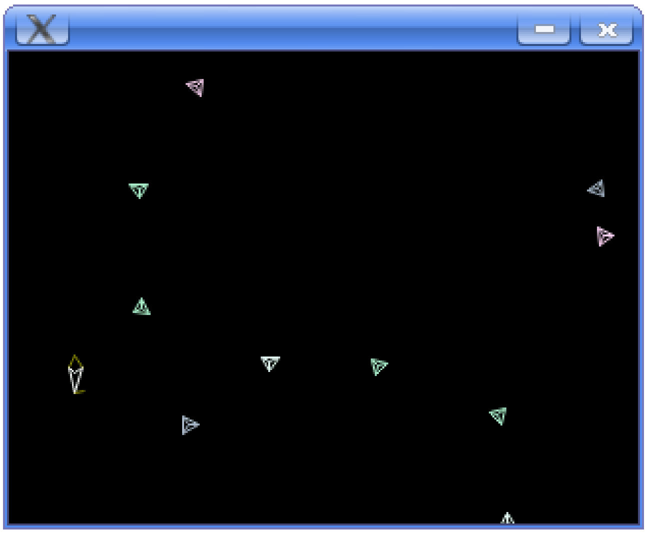

Figure 6. Rockdodge demo at 320x200. Anti-aliasing, alpha-blending are **on**.

6. Download

- **Latest Stable Releases:**
  - libcrtxy-0.0.4.tar.gz
    Version: 0.0.4 (alpha)
    Date: 2009.09.11
    Type: Source tarball
- **Developmental Code:**
  - Get the code from the CVS repository at SourceForge: CVS page
  - Browse the CVS repository over the web.

7. Documentation

You can browse the documentation (generated with 'doxygen') via the web interface to the CVS repository:

- Version 0.0.4 docs

8. Help Me!

I'm looking for help implementing all of the neat things I'd like libcrtxy to do! Know OpenGL and SDL? Can you build library DLLs for Windows? Etc.!

9. Links

- SourceForge project
- libcrtxy-devel mailing list
- New Breed Software (libcrtxy was initiated by Bill Kendrick in July 2008)

10. Comments

- Once again, you have your finger on the pulse of America. The future is vector-based games. -John M., 2008-07-31
- haha, beautiful! Heroically nerdy! -Adam R., 2008-07-31
- cool -Zach J., 2008-08-01

11. Contact

Using the mailing list is preferred, but you can also email Bill directly at: bill@newbreedsoftware.com. You can also find Bill on the libSDL IRC channel on Freenode, `#sdl`; nickname: **kendrick** or **kendwork**.

Hosted by SourceForge.net.