Chalkrag GP2X Port Report

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1 Differences from the PC Version

There are minor differences from the PC version, in the graphics, and the controls.

1.1 Graphics Differences

The GP2X doesn't have any graphics capabilities beyond a simple linear 16bit framebuffer. Thus all the rendering had to be done in software. Furthermore, the GP2X lacks a floating point unit, which further complicates the situation.

Figure 1: Photograph of chalkrag running on the GP2X.

For the aforementioned reasons, I used a software fixed point OpenGL implementation I wrote some years back, called *libfixgl*[1]. This choice allowed

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[1]Libfixgl is available at: `http://libfixgl.sourceforge.net`.

me to just recompile most of the graphics code unchanged, and still get a reasonable performance out of it, since libfixgl was designed with low-powered portable devices lacking an FPU in mind.

The first difference in the graphics of the gp2x port from the original is that the background image of a blackboard does no longer move along when panning the view. This was done as an optimization, to be able to just block-copy the background image directly to the framebuffer, without resorting to polygon filling with a huge background quad which could deteriorate performance.

The other difference, is that the chalky lines no longer have smooth edges. Multitexturing was used to achieve that effect in the PC version, but my fixed point OpenGL implementation does not support multitexturing, and a reimplementation of the effect with multiple passes and blending would significantly impact performance.

1.2   Controls

The original PC version uses keyboard and mouse for the controls, which where obviously reassigned to the gp2x gamepad buttons and stick. Figure 2 shows a graphical depiction of the controls for the gp2x version of the game.
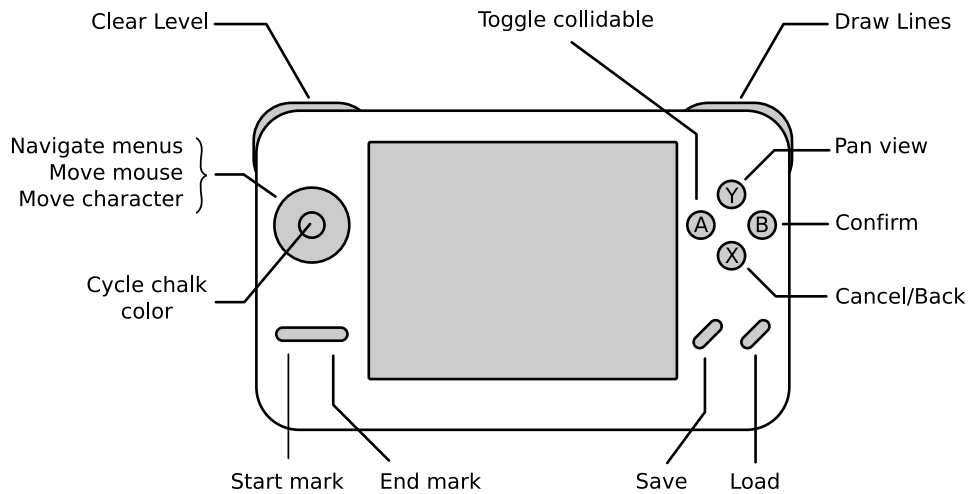

Figure 2: GP2X controls.

One repercussion of the absence of a keyboard from the gp2x console, is that the player no longer is able to enter his/her name at the options menu. An alternative text entry wasn't implemented as the name of the player doesn't have any significance on the game whatsoever apart from being displayed at the upper-left corner of the screen while playing.

2   Running the Game

In order to run the game, just copy the game executable (`chalk2x`), gp2x game start script (`chalk2x.gpe`) and the data directory on an SD card, insert it to a gp2x console, navigate to games from the gp2x menu, and select the `clalk2x.gpe` icon from the list.