The main part of our project will be a VGA controller. It will have multiple frame-buffers to emulate double-buffered rendering. There will be 4 or so ARGB back-buffers that will be painted pixel-by-pixel by the CPU. The CPU will also supply each of the back-buffers with an integer X and Y offset. When the buffers are done being painted, the back-buffers will be composited (with alpha and positions) into a final back-buffer, which will be switched with the front-buffer during the VSYNC.

This will enable us to smoothly and quickly pan multiple layers of 2D graphics above each other while leaving the processor free to other processing since we don't have to repaint the entire back-buffer in software if we want to simply move one of the layers.

The main portion of the project will be a fancy digital clock that displays pictures, captions, news headlines, and weather scrolling along the screen. We want to animate the picture scrolling the pictures one after another. In . First we would have the images stored in the board memory. After completing the VGA controller we will decide whether or not we will take the pictures and information from a network connection or from a media card.

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