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CONSUMER ELECTRONICS · USA

Educational Display Games for Children's Devices

Embedded Firmware | Display Driver Development | Game Development

CLIENT

A US-based company.

THE PROBLEM

The client's children's handheld device had a small monochrome display, and they wanted it to run educational games covering spelling, pronunciation, and basic arithmetic — engaging enough that a young child would actually want to keep playing, on a display with very limited resolution and no existing software to draw on it at all.

WHAT WE BUILT

As with similar small-display projects, the work started with the display driver software itself — nothing existed to put images or text on this screen, so we wrote that from scratch, capable of drawing to any position on the small monochrome display. From there we built higher-level drivers for displaying full images and text, since games built directly on raw pixel drawing would have been impractical to develop or maintain. With that foundation, we developed the actual games — spelling, pronunciation, and arithmetic — combining visuals and sound in a way designed to hold a young child's attention, which on a display this limited meant getting creative with how much could be conveyed through simple graphics and audio cues.

WHAT IT DOES

- ✓ Complete display driver software written from scratch for the device's small monochrome screen
- ✓ Higher-level drivers for displaying images and text, built on top of the raw display drivers
- ✓ Educational games covering spelling, pronunciation, and basic arithmetic, designed for young children
- ✓ Combines visuals and sound to keep engagement high despite the display's limited resolution
- ✓ Built the full stack from display drivers to finished games, with nothing pre-existing to build on

OUTCOME

The client's device gained a working set of educational games that hold up on a genuinely small, low-cost display — built end to end, from the drivers that let the screen show anything at all, to the finished games themselves.

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