

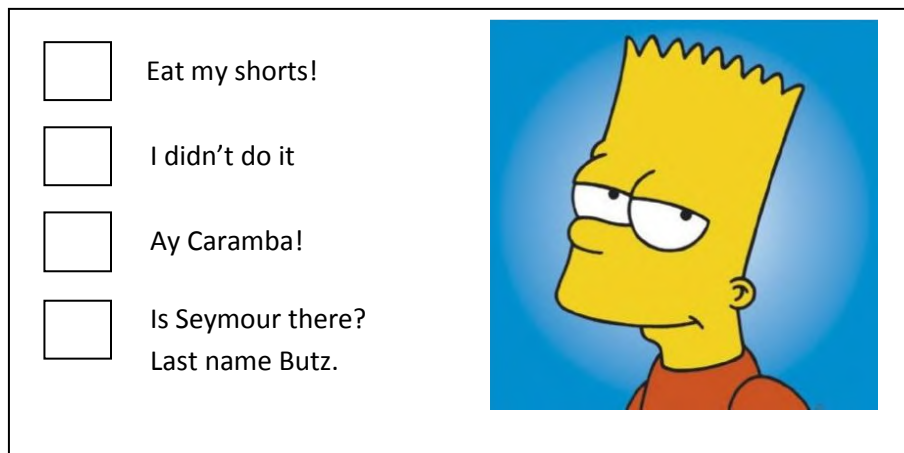
Funny Soundboard

Goal:

We plan to create an embedded system that plays back various sound clips when the user presses different buttons. The purpose is to generate laughs, and the potential application is for the system to be placed in theme parks, restaurants, or anyplace that people wait in line.

Description:

The system will consist mainly of an Altera DE2 board. It will have a VGA monitor output, on which a grid of buttons are displayed, along with text, pictures and/or animation representing the theme of the soundboard. A PS2/USB mouse is connected to the system and a cursor will be displayed on screen. When the user clicks on a button using the cursor, the associated sound clip is output through the Analog sound output of the DE2 board. The soundboard will have multiple themes (sets of picture/sound files) by reading from the SD card slot of the DE2 board. An example screen shot is below¹:



Implementation:

We will use an NIOS II microprocessor implementation on the Cyclone II FPGA as the CPU. A program written in C will be responsible for processing mouse input, generating screen background, process cursor movement, generating animation (if any), and load, decode, and output sound.

Hardware used will be: SD card slot, PS2/USB interface, VGA interface, and Analog audio out

Bitmap and Wave file formats will be used to save background and sound files.

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