Chroma Key Compositing with FPGA

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Checklist of Deliverables: for the Final Project Checkoff

Primary Input: Video streaming from an NTSC camera
Primary Output: VGA monitor

Modules:
1. Video System   2. Memory   3. Selector

Functionality:
1. Basic Testing
- Displaying the raw video streaming on the monitor
     To test the Video System module and basic function of the Memory Arbiter
- Displaying the static image on the monitor
     To test that the image is loaded from a Compact Flash memory, stored in the
     DDR RAM, and recalled by the Memory module correctly
- Displaying the static image with zoom functionality
     To test the Memory module zooming algorithm and the zero-order hold algorithm
- Marking Chroma Key pixels in a simple video streaming
     (without replacing them with corresponding pixels from the static image)
     To test the Selector module's Chroma Key detection
- Chroma Key Compositing of a simple video streaming
     For example, a stationary video streaming with screen partially covered by
     Chroma Key.

2. Chroma Key Compositing with NO zoom functionality
     To test the integrated system in real time real-time

3. Chroma Key Compositing with zoom functionality
     To test the integrated system in real time real-time, with zooming parameter
     input from the up button and the down button

4. Chroma Key Compositing with zoom functionality + morphological processing
     (if time permits)
     Morphological processing includes binary-filtering of pixels each video screen. It
     will be implemented as an extension of the Selector module.