

- Computer Interface
 - Preprocess images in MATLAB
 - Download images from computer through USB reader
 - Successfully store 3 images (w/ colortables) in memory (image → ZBT, colortables → BRAM)
- Frame Buffers
 - 2 frame buffers stored in ZBT
 - Smooth, glitch-free display from switching frame buffer every 1/60 seconds
 - Correct color display (24-bit RGB)
- Display
 - 800x600 SVGA
 - Image filmstrip – current image is centered on the monitor
 - Scrolling
 - Scroll through filmstrip using right/left buttons
 - *(if time)* Adjustable scroll speed
 - Stop at “end” of filmstrip (when end image is only image on the screen)
- Select
 - Use enter button to select image
 - Selected image becomes only image displayed
- Scaling
 - Smooth scale-up interpolation. Smooth wrt scale value
 - Smooth anti-aliasing when down scaling
 - Test cases testing basic as well as edge cases
- Rotation
 - Use nearest neighbor algorithm to rotate discrete values
 - Use sub-Pixel Area Average algorithm to display discrete rotations
 - Display smooth rotations responding to changing rotation value
- Transformation
 - Transform an image in both dimensions rotation and scaling
 - Serialize rotation and scaling
 - Pipeline to perform multiple pixels at once
 - Smooth transformation performing in under 1 frame cycle
- Integration
 - Basic integration showing mode switching
 - Smooth transformations and scrolling

Stretch Goal: Gesture Recognition

- Video Input

- Use camera to feed to vga
 - Store camera input in buffer
- Video Processing
 - Extract characteristics like position of finger tips
 - Transform characteristics to more useful domain
- Matching
 - Match extracted characteristics against database
 - Determine which gesture is happening
 - Generate input for picture browser like scroll direction, mode switching, scale factor and rotation value