Project Checkoff Checklist

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Modules:
- ❏ Sprite Module – Generic sprite module
  - Reads image data from a ROM
  - Capable of cycling through several images to produce animation effects
  - Accepts (x, y) coordinates for position on screen, (x, y) coordinates for which pixel to output
  - Duck module has extra input for status of duck (dead/not dead), Score module gets score from Game logic
- ❏ Game Logic Module -- Implements simple form of duckhunt
  - Moves duck around the screen
  - Checks if a duck has been killed when the trigger is pulled
    - Dead ducks fall to the ground, then a new duck is created
  - Keeps score, displays it on screen (If Time Permits!)
  - Keeps track of ammo, displays ammo on screen (If Time Permits!)
- ❏ Sprite ROM – Memory to hold all the graphics for the game
  - Implemented in B-RAM
  - each Sprite has its own B-RAMs to access

Functionality will be demonstrated during the final project checkoff by running a playable demo of the game that will show the functionality of all modules. We will be able to demonstrate the Sprites moving, animated sprites, all game logic functionalities, and the images loaded in the RAM while the game is running.

Daniel Southern
- ❏ ADV7185 – Frame Buffer Interface
  - Reads pixel data from ADV7185
  - Writes data to ZBT Frame Buffer

Functionality will be demonstrated by including a mode that just writes the camera data to the frame buffer then displays it back onto the screen.

- ❏ HSV Converter, Frame Buffer Reader
  - Iterates through frame buffer, converting each pixel to HSV color space
- ❏ Pixel Filter
  - Examines output of HSV Converter, outputs true if a pixel is a cursor pixel, false otherwise.
  - Adjustable parameters for pixel matching requirements (If Time Allows!)
  - Dynamic Relative Luminosity Detector (If Time Allows!)
    - Keeps good pixel detection performance in a range of lighting conditions

Functionality of these two modules can be demonstrated by including a mode that displays black pixel on the output for non-matching pixels, and white for matching pixels. We should see a white spot where the laser is pointed.
- ❏ Center of Mass Detector
  - Computes center of mass coordinate of pixels that are part of the cursor.

Functionality will be demonstrated during operation of the game, where the cursor drawn in the game will follow the laser pointer on the screen.