# Project Check Off Checklist

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## Minimum Commitment

| Maze game/FSM | ● Demonstrate transition through FSMs using labkit buttons  
|              | ● State outputs displayed on labkit LEDs | EZ |
| Real-time Colored Object Recognition | ● Display camera image in color on screen via VGA  
|              | ● Display object center of mass on screen (represented by colored block) | SP |
| Integrated display of scaled map and CoMs | ● Location of hand is scaled to the map on the monitor  
|              | ● Single map can be displayed (static) | EZ |

## Project Implementation

| Maze game/FSM | ● Demonstrate timeout functions when player is invalid  
|              | ● Control of visual elements using game state  
|              | ○ Map is hidden/visible depending on state  
|              | ○ Color overlay on screen when in warning state  
|              | ○ 16-dot LEDs display messages | EZ |
| Dual camera integration | ● Display data transmitted from second labkit on LED of first labkit  
|              | ● Display block representing center of mass as detected on second labkit on monitor attached to first labkit  
|              | ● Scale com data from both labkits to fit maze map  
|              | ● Integrate color recognition of two separate gloves  
|              | ● Implement offset factor for data from second labkit | SP |
| User interface | ● Screen automatically updates maze map based off of user selection (only during NEWGAME state)  
|              | ● Automatic start when player in area  
|              | ● Commands over 16-dot LED display  
|              | ● Display of total play time counter over 16-dot LED display | EZ |
| Player Feedback | 1. Outputs communicated with labkit LEDs  
|              | 2. Demonstrate communication over UART to peripheral LEDs  
|              | 3. Give haptic and visual feedback to player via UART and RF transmission | EZ |
## Stretch Goals

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| Storage and retrieval of play times from BRAM          | - Retrieve and display last high score/fastest time on LEDs  
- Retrieve and display multiple last fastest times on the monitor (see the next stretch goal) | SP      |
| Advanced main menu display using COE files and flash memory | - Allow users to choose between New Game or How To Play/High Scores screens during NEWGAME state  
- Add more visual frames (e.g. specific win/lose game display) | SP EZ   |
| Automatic edge detection of areas                      | - Areas must be 5' x 8' or small due to physical and camera limitations  
- Probably beyond the scope of this project with just two people (if we had a third person on our team, we could have made this a critical feature of the game!) |         |