FPGA Radar Guidance:

Checklist

Brian Plancher

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1. Main FPGA
   (a) Ultrasound
      - ☐ **Commitment:** Can calculate distance to an object with 1 ultrasound
      - ☐ **Commitment:** Can calculate angle to object from 6 ultrasounds
      - ☐ **The Goal:** Can calculate angle and distance as the median of multiple results to improve accuracy

   (b) Orientation and Path Calculation
      - ☐ **The Goal:** Can calculate calculate orientation based on two distance measurements and a bunch of angle calculations
      - ☐ **Stretch Goal:** Can calculate the distance and angle of rotation of the path to a target location
      - ☐ **Stretch Goal:** Can use feedback based controls to get the rover to the desired location

   (c) IR Transmit
      - ☐ **The Goal:** Can send IR commands on my custom protocol to the "Rover"

   (d) VGA Display
      - ☐ **Commitment:** Simple interface show the location of the "Rover"
      - ☐ **The Goal:** Display a more sohpisticated display with a basic target pattern in the background
      - ☐ **The Goal:** Display the location of the "Rover" and the target with Alpha blending
      - ☐ **The Goal:** Display the orientation of the "Rover"
      - ☐ **Stretch Goal:** Advance the sophistication of the display (e.g., scaling)
      - ☐ **Stretch Goal:** Add the path to the display

2. "Rover"
    (a) IR Reciever
        - ☐ **The Goal:** Can receive IR commands on my custom protocol from the Main FPGA
    (b) Motor Controls
        - ☐ **The Goal:** Can cause the rover to move forward
        - ☐ **Stretch Goal:** Can cause the rover to turn at a desired angle
        - ☐ **Stretch Goal:** Can cause the rover to move a desired distance
3. Other
    (a) Reports
        - ☐ Proposal Draft — *November 2nd*
        - ☐ Proposal Final — *November 13th*
        - ☐ Reflection — *November 23rd*
        - ☐ Final Report — *December 9th*
    (b) Presentations
        - ☐ Abstract Meeting
        - ☐ Block Diagram Converence — *Week of November 2nd*
        - ☐ Practice Presentation — *November 4th*
        - ☐ Actual Presentation — *November 9th*
        - ☐ Checklist Meeting — *November 20th*
        - ☐ Status Update — *November 30th*
        - ☐ Checkoff — *December 7th*
        - ☐ Project Demos — *December 8th*