Commitment

- Ray:
  - Display camera output
  - Calculate the centers of the hands of the two players (both wearing LEDs)
  - Use the centers of the players’ hands to calculate the change in position of their hands over some number of frames
  - Use the change in position to classify the players’ actions as None or Punching

- PJ:
  - Game logic
    - Hits when players are within range
    - Health bar logic
      - Give players specified health
      - Loss of points for player hit depending on the attack type
      - Shown on seven-segment display
  - Sprites
    - Motion depending on state
      - punches/kicks/walking
      - Sprites cannot move through each other

Goal

- Ray:
  - Use the change in position of the players’ hands (the LEDs) to classify their actions as None, Punching, Kicking, Moving Forwards or Moving Backwards
  - Track and display the players’ locations and actions

- PJ:
  - Display the players’ actions
    - Game logic
      - Hits when players are within range
      - Health bar logic
        - Give players specified health
        - Loss of points for player hit depending on the attack type
        - Shown on seven-segment display
        - Incorporate death sequence in seven segment
    - Sprites
      - Motion depending on state
        - punches/kicks/walking
    - Sounds
      - Scuffling sounds for movement
      - Attack sounds made when players make an attack/get hit
Stretch

- Ray:
  - Use the change in position of the players' hands to classify their actions as None, Punching (Regular), Punching (Fast), Kicking (Regular), Kicking (Fast), Moving Forwards or Moving Backwards.
  - Use the change in position of the players' hands (the LEDs) to classify their actions as None, Punching, Kicking, Moving Forwards, or Moving Backwards.
  - In the case of Punching, Kicking, Moving Forwards or Moving Backwards, determine a speed/magnitude rating as well based on how fast the players move their hands (the LEDs).
  - More advanced graphics.
  - Show hand tracking in the corner of the screen.
  - Use filtering to smoothen the tracking of the hands (LEDs).
  - Sew LEDs into gloves.
    - [https://www.exploratorium.edu/tinkering/projects/sewn-circuits](https://www.exploratorium.edu/tinkering/projects/sewn-circuits)
    - [https://www.ehow.com/how_8787939_sew-led-clothes.html](https://www.ehow.com/how_8787939_sew-led-clothes.html)

- PJ:
  - Game logic
    - Hits when players are within range.
    - Health bar logic
      - Give players specified health.
      - Loss of points for player hit depending on the attack type.
      - Shown on seven-segment display.
      - Incorporate death sequence in seven segment.
  - Sprites
    - Motion depending on state.
    - punches/kicks/walking.
  - Sounds
    - Scuffling sounds for movement.
    - Attack sounds made when players make an attack/get hit.
  - Leds flash for hits
    - Colour difference represents remaining health.
  - On screen hits.
  - Leds flash in response to player heartbeat.