**Input field**

Reset

Param 1

Param 2

Visualize

**Output field**

Ground Profile

**Source/ Receiver**

Sound vector

* Create HTML document to house the app.
  + Document will consist of two fields:
    - 1) Top field (<div> )
      * Create a container (<div>) which will take the upper portion (25-33%) of the screen.
      * Create 2 PARAMETER buttons (slider, user input from a valid range???) which will affect the sound propagation.
      * Create a RESET button which will return the parameters to default settings.
      * Create a VISUALIZE button which will execute the code for the visuals.
    - 2) Bottom field
      * Contains visual output for user to visualize sonar exp.
      * Create a container which will take the lower portion of the screen (67-75%)
      * Create a field which will house the graphics (HTML5 Canvas).
      * Create SOURCE/RECEIVER button which will emit/listen for sound.(elaborate)
      * Randomly generate ground profile (JS).
* Create CSS design (least important)
* Write JS code to handle sound propagation.
  + Create vectors (class?)
  + Create ground profile.
    - Utilize Math.random to generate points from the lower boundary?
      * Make profile “solid/impenetrable” (zero transmission coeff., one reflection coeff)
  + Create initial conditions
  + Draw sound vectors (?)
  + Find out how to loop and update vector propagation for animation
  + Find out how to interact sound vector with ground profile.
  + How to factor in “alpha”?