# Development Process and Challenges

## Day 1

1. A team of two brothers and two strangers stumbled together in the knick of time!
   1. Brad West
   2. Chris Wallace
   3. Geoff Sizemore
   4. Tim Sizemore
2. Decide On A Challenge - Easier Said Than Done!
   1. Discussion of what stuck out for each of us.
   2. We decided to do a NASA Challenge instead of a Community Challenge for the chance to enter the worldwide competition.
   3. Tim creates a list of the 10 challenges he likes and presents this list to the group.
   4. The other team members review the list and we discussed which challenges we preferred and the difficulties we would face with each.
   5. After 30 minutes we settled on Trace Invaders based on unanimous interest and our skillsets as they would apply to developing the goal product.
3. Where To Start? What is Trace Invaders?
   1. The Trace Invaders Challenge asks for “a tool to trace invasive species in your neighborhood over time!”
   2. Our interpretation of the goal
      1. To develop an interactive website experience where users can report local species sightings and also provide maps and overlays to visualize the data collected from all users.
      2. “Let’s track how Kudzu is taking over the landscape!”
      3. We believed it would be great to visit the website and immediately be presented with an up-to-date local map showing what invasive species were in the area and where the latest sightings were.
4. So Who Does What?
   1. We’re all coders and engineers, uh oh!
   2. Chris kicked us off by setting up a website to play with.
   3. Geoff presented options for the mapping libraries.
   4. Brad studied the mapping options
   5. Tim began brainstorming and documentation of the project.
   6. We set up our GitHub accounts and connected with each other online.
5. Conceptualization
   1. Functionality
      1. Interactive map that allows users to click on a point and add pest sightings to that location.
      2. Use a dropdown menu for them to select the pest they spotted.
      3. Save sightings in a server database
      4. Let users view pest sightings entered by other users all over the world.
   2. Bonus Features (Wishlist)
      1. Detailed Species Selector
      2. Species Information
      3. Map controls
         1. Species Selection
         2. Heatmap showing densities of sightings
6. Choosing Website Libraries
   1. We chose Leaflet for our map software for its free price, relatively simple presentation, capabilities, and that the code was in our skillset.
   2. We chose MySQL for our database because it’s free and hosted online.
   3. We chose to build the website layout from scratch until we needed more functionality and if time permitted.
7. Development
   1. Initial website with a Leaflet map
   2. Initializes at user’s location
   3. Click and add sightings to server database