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SoftDes Final Project Proposal

1. **The Big Idea:** What is the main idea of your project? What topics will you explore and what will you generate? What is your **minimum viable product**? What is a **stretch goal**?
 - a. We want to use Lidar images/non-visible-light images to find ground topography through image analytics in Python. We will be exploring image analytics and object detection. We will also be exploring how lidar images work. A stretch goal would be to look at lidar images through trees to determine ground topography. The minimum viable product would be to do such without tree interference.
2. **Learning Goals:** What are your individual learning goals for this project?
 - a. Ricky- To get better at Python, re-orient self with python since the break
 - b. Aiden- To learn how to do new things in Python and become comfortable learning how to do something currently unknown
 - c. Grace- To be more comfortable debugging and to gain an intuition on how to approach problems
3. **Implementation Plan:** This will probably be pretty vague initially. Perhaps at this early juncture you will have identified a library or a framework that you think will be useful for your project. If you don't have any idea how you will implement your project, provide a rough plan for how you will determine this information.
 - a. Our first step will be to find the data source for our lidar images
 - b. Find a way to display using python
 - c. Research potential libraries for image recognition
 - d. Write the code
4. **Project schedule:** You have 6 weeks (roughly) to finish the project. Sketch out a rough schedule for completing the project. Depending on your project, you may be able to do this in great specificity or you may only be able to give a broad outline. Additionally, longer projects come with increased uncertainty, and this schedule will likely need to be refined along the way.
 - a. Week One- Find a data set, choose a library, potential way to display our data
 - b. Week Two- Determine an analysis technique to use, and work in implementing it
 - c. Week Three- Get general image processing code working, skeleton code
 - d. Week Four- Scale up to deal with multiple colors/frequencies
 - e. Week Five- Scale up to handle interferences such as trees
 - f. Week Six- Add in some kind of User Interface
5. **Collaboration plan:** How do you plan to collaborate with your teammates on this project? Will you split tasks up, complete them independently, and then integrate? Will you pair program the entire thing? Make sure to articulate your plan for successfully working together as a team. This might also include information about any software development methodologies you plan to use (e.g. [agile development](#)). Make sure to make clear why you are choosing this particular organizational structure.

- a. Start by pair programming the basics, and working together until all of us are confident in the plan and what we are doing. If we reach a point where all of us are comfortable and wanting to work independently, then we can divide and conquer. This will ensure we all stay on the same page and no one gets lost.
- 6. **Risks:** What do you view as the biggest risks to the success of this project?
 - a. Our biggest risk for this project is over-scoping. We need to be careful that we do not bite up more than we can chew.
- 7. **Additional Course Content:** What are some topics that we might cover in class that you think would be especially helpful for your project?
 - a. It would be great to learn more about object and edge detection in class.

