Announcements

- Homework
  - If you haven't turned in any hw, try to get it in soon!
  - I'm grading midterm projects, then hw, then late hw
- Group Projects
  - Emails with group assignments should have gone out. Start thinking through and talking what you want to create as a group!
  - I'll be getting shared Github repositories made for each group to collaborate with. Will let you know once I have the details.
  - Let me know if you are looking for ideas or want to bounce some ideas off me!
- No class on Wednesday! Support the seniors by attending their talks virtually!
- Polling: `rembold-class.ddns.net`

Approach to Large Projects

1. Have a clear idea of the core of what you want to build:
   - Eg. A sofware terminal application to detect and record video and still images of shooting stars

Approach to Large Projects

1. Have a clear idea of the core of what you want to build:
   - Eg. A sofware terminal application to detect and record video and still images of shooting stars
2. Have clear goals for what you think success in the project would look like:
   - System should reliably detect shooting stars
   - System should periodically save current images of the night sky
   - System should save video clips of shooting star events
   - System processing should be able to run at real time framerates
   - Starting, stopping, and changing settings should be accessible through a terminal interface

Approach to Large Projects

1. Have a clear idea of the core of what you want to build:
   - Eg. A sofware terminal application to detect and record video and still images of shooting stars
2. Have clear goals for what you think success in the project would look like:
   - System should reliably detect shooting stars
   - System should periodically save current images of the night sky
   - System should save video clips of shooting star events
   - System processing should be able to run at real time framerates
   - Starting, stopping, and changing settings should be accessible through a terminal interface

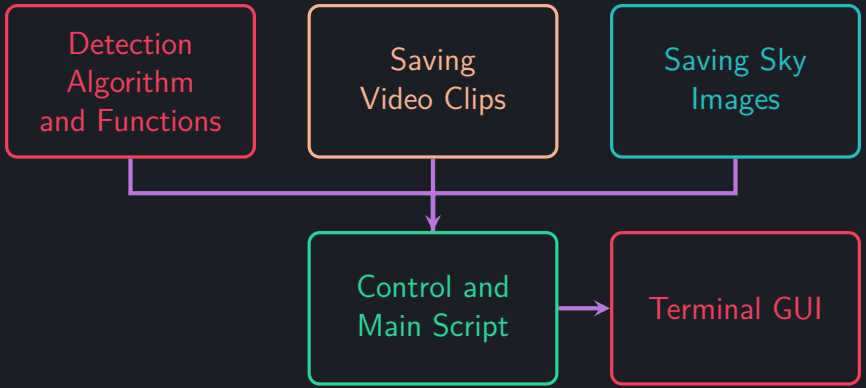
Important

- The more specific you can be, the easier life will be later.
- Everyone should know and be in agreement about these goals.
- Optional goals beyond the core features are totally ok.

Break It Up!

- Divide goals into self-contained chunks of code
- Map out graphically how those chunks of code are related
  - What depends on what? Or what will use objects defined in other code blocks?
  - Be as specific as you can!
  - Can help to make sure there is at least one chunk per group member, though more is fine

Example Breakdown



Code Block Details

- For each code chunk:
  - List out what inputs you think you'll need
  - Look at the calling code block and your goals to see what you should be returning
  - Decide if the needed functionality can best be served by a set of functions or a class
    - If a class, what getters and setters do you need? What methods?
    - If a function(s), do you really want just a collection of functions? Or would a class be a better fit?
    - Either way, *include docstrings and documentation!*
  - Each code chunk should be functional given the proper inputs without the other pieces!

Testing

- Since code chunks should function independently, you should be able (and should!) test your chunk.
- Should test to make sure:
  - Any desired goals are being met
  - You are returning the correct or necessary things
- Can write a few testing functions to help yourself if desired.
- Above all, just make sure you TEST IT! Mistakes that come from your code are *your* fault!

N'Sync

- Need a method to reliably share your parts of the code with everyone
  - Shared Github repositories are a good solution.
  - Should check for updates from others each time before working on your portion
  - Version control can save you if you manage to totally break something you once had working
- Problems can be mitigated if everyone is working on a different file
- Use imports to bring everything together
- Don't wait until the last minute to upload your portion!
  - Errors or misunderstandings will crop up
  - Give your group-mates time to react or adjust their parts to your code (or for you to adjust your parts to theirs)