**Database Ideas (Alina)**

1-3 are different types of data and 4 is an idea for image-based algorithms. Our options are to:

* Work on these projects independent of each other (plug-in architecture), which gives us the opportunity to explore different ideas and get a sense of how dense our project will be. Otherwise, we can
* Combine them as a large project as outlined in 5, which will take longer planning as requirements and specifications will be much more extensive, but it will be a big and cohesive project.

Highlighted are the big question marks in each section. If we were to divide each project into three parts (i.e. data in the backend, visualisation parameters somewhere in the middle, and user interactions in the frontend), most of them stem from the parameters and naturally spread to the UI. I think we have a solid set of data sources but need more specific ideation for the visuals. Please keep the following in mind as you read through the sections listed below:

* What style of art would we like users to generate? Will it include words and/or sound?
* What parameters should we control? How about the users?
* What kind of motion should we create and how? Should they be dynamic for each user?

1. Social Media APIs (i.e. language)
   1. Query hashtags, trends, comments, songs with Twitter, Instagram, Spotify APIs
   2. Run raw data through LLMs and generate usable data (e.g. positive/negative, active/passive)
   3. Parse generated data and match to visual parameters on UI
   4. Users can traverse through different social media moods/visual parameters
2. EOSDIS (needs more research on available data)
   1. [NASA APIs](https://api.nasa.gov/)
      1. “Astronomy Picture of the Day”
      2. “Near Earth Object Web Service”
      3. Space weather observations, analysis, models, forecasts, and notifications
      4. Landsat imagery
      5. “Exoplanet Archive”
      6. Continuous weather measurements (temperature, wind, pressure) on Mars
      7. Image data gathered by NASA's rovers on Mars
      8. “NASA Image and Video Library”
      9. “Satellite Situation Center”
      10. Asteroid and comet close approaches to the planets in the past and future
      11. Orbital elements of an Earth-orbiting object
      12. Vesta/Moon/Mars Trek imagery
   2. [GIBS APIs](https://www.earthdata.nasa.gov/engage/open-data-services-and-software/api/gibs-api): global, full-resolution satellite imagery
   3. [Earth science data by topic](https://www.earthdata.nasa.gov/topics)
      1. Atmosphere/Biosphere/Cryosphere/Hydrosphere
      2. Human dimensions
      3. Land/Ocean/Earth
      4. Sun-Earth interactions
3. EarthCam Network (i.e. video)
   1. Read live webcam footages and generate usable data/extract features
   2. Map generated data/features to visual parameters on UI
   3. Users can select/combine webcams from different locations
4. Image Blender (i.e. image)
   1. Collect datasets of similar images (e.g. flowers in <https://entangledothers.studio/self-contained-003/>)
   2. Blend images with noise/physics/algorithms
   3. Users can traverse through different datasets/algorithms/visual parameters
5. All of the Above
   1. Gather image data from NASA APIs to use as basis for art
   2. Map linguistic data from Social Media APIs to colour (i.e. hue, temperature, etc.)
   3. Map other data to noise (i.e. more parameters to transform base art)
   4. Use generated noise and physics and algorithms inspired by Cool Ideas section to create motion
   5. Give users a whole lot of parameters they can play around with in the UI