Idea Overview(quick notes)

- A website that is used to monitor the status and efficiency of an installed, stationary, home solar panel/panels.
- We determine the expected power output of a given location using NASA radiation data and other variable = A
- We determine the power output of a solar panel (simulated data) = B
- We give the efficiency of the solar panel using A as the expected power and B as the true power
- We use measures of current (and other things) to suggest 1 of 3 things
    - Solar panel is working as best as it can
    - Solar panel potentially has a faulty wire that needs changing
    - Solar panel potentially has some dust(or other debris) that needs cleaning

Use Case(s)

1. User opens a website
2. User enter location data: latlong OR address in website
3. Website uses location data to map to latlong
4. Website uses latlong to get NASA data
5. Website uses NASA Data to calculated expected power out of solar panel(s)
6. User enters current and voltage data(simulated)
7. Website calculates true power out of solar panel(s)
8. Website compares expected power to true power to get panel efficiency
9. Website uses comparison to suggest solution(if needed)

Notes

- Improvement: more accurate source data(NASA is good but not best)
- Extension: use for larger solar power structures; solar plants/parks
- Extension: use for moving/moveable solar panels