1. The system shall use two microcontrollers (one for the robot and one for the base station).
2. The two microcontrollers shall communicate with wireless technology (to be determined) capable of transmitting at a rate of 1kbps over a distance of 65 feet.
3. The system shall consist of a base station, a robot and an Android app.
   1. A base station is the part of the system that sits stationary and provides a docking station for the robot.
   2. The robot is the part of the system that traverses the solar panels and cleans them.
   3. The Android app is an application on an Android phone that will allow the remote control of the system.
4. The robot shall be powered by a battery capable of running the robot for at least 2 hours under normal operation.
5. The base station shall be powered by 120 v at 60 Hz converted down to meet system requirements.
6. The base station shall provide a way to charge the robot when docked.
7. If the robot’s battery is running low (low level TBD later) the system shall pause the cleaning, dock the robot, wait for the robot to recharge then resume cleaning.
8. The base station shall control the x-axis movement of the robot.
9. The robot shall control the y-axis movement of the robot.
10. The robot shall clean the solar panels using a brush at a rate of .1 inches per second.
11. The system shall provide a way to swap between manual and autonomous mode..
    1. Manual mode is when the robot is being controlled using the Android app.
    2. Autonomous mode is when the robot is following the schedule.
12. The system shall include an Android application that can control the robot.
13. The Android application shall provide a way to control the x and y axis movement of the robot. (way of controlling TBD later)
14. The Android application shall provide a way to turn on and off the cleaning brush.
15. The Android application shall provide a way to automatically dock the robot. (Docking the robot is when it positions itself in the base station and starts charging)
16. The system shall automatically dock the robot if the user did not dock the robot in manual mode and has swapped into autonomous mode.
17. The system shall have the ability to follow a schedule based on the time of day and day of week.
18. The system shall provide a way for the user to set the schedule.
19. The system shall provide a way to initiate a cleaning outside the set schedule.
20. The system shall include a temperature and wind sensor.
21. The system shall postpone cleaning if the outside temperature is above a set value (Value TBD later).
    1. This is to prevent damage to both the electronics and the battery of the robot.
22. The system shall postpone cleaning if the speed of the wind is above a set value (Value TBD later).
    1. This is to prevent damage to both the robot and the solar panels due to high winds.
23. The system shall clean the solar panels by traversing left to right or right to left from top to bottom.
    1. This is to prevent the robot from dirtying previously cleaned panels.
24. The system may include a way to get water to the robot.
25. The system may include a water or water-less cleaning style.
26. The system may include an option to turn on and off the water, when in manual mode, via the Android app.