Please provide the following information to be shared with on capstone information exchange platform:

1. **Project number**: 45

2. **Project title (as will appear on the poster)**: Appliance Power-Efficiency Monitor (APEM)

3. **Team members**: 1. Wilson Zhou - wz194@scarletmail.rutgers.edu  
   2. Chris Lombardi - cml330@scarletmail.rutgers.edu  
   3. Ken Lee - kl671@scarletmail.rutgers.edu  
   4. Ryan Sanghvi - rs1402@scarletmail.rutgers.edu  
   5. Tony Newmark - ttn50@scarletmail.rutgers.edu

4. **Adviser(s) name(s)**: 1. Michael Caggiano

5. **Up to 5 keywords that will help to classify the project scope**: Design, Data Collection, Data Transmission, User, Report

6. **Project abstract (up to 250 words) to be shared with judges**:

   For our Capstone project, we plan to create a device which will allow a user to monitor the power usage of their various appliances throughout the household. However, due to safety precautions, we are limited to under 50 watts. Because of this limitation, our design will merely be used to take in a single smaller wattage (such as USB devices) and transmit the data to Raspberry Pi.

   To do this, we will use an arduino that we can use for any particular outlet to receive the data on its power usage. From there, it will send this data to a Linux receiver. For this receiver, we will implement software using Python so we can translate this data into meaningful information for the user (i.e. consumption graphs) to help them better visualize how much power each particular device is using compared to other devices in the same household.

   The device will consist of two main parts, the arduino and a monitor. The monitor will display the information collected by the arduino and processed using a Raspberry Pi. The software within the Linux device will format the data it is receiving into an organized chart that lists the name of the appliance, power usage of the appliance, etc. This will allow any user to easily understand the data, monitor their appliances, and unplug any unnecessary appliance, so as to save power and have a more energy efficient home.