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| Project | Interactive Solar Panel Display |
| Project Website | https://steve-spiteri.github.io/ |
| Reporting Period | October 4th, 2016 – October 11th, 2016 |

Dear Kristian Medri,

I am writing to bring you up to date on the progress I have made on my hardware project, the interactive solar panel display. Recent project activities include research on the individual sensors to be used and the initial construction. On the project website you will find the conclusions of my research.

The initial construction is complete, meeting the mechanically assemble milestone as outlined by the project schedule Week 6 lines 16 through 20.

Testing of the sensors will be performed in the lab period, Tuesday October 11th, 2016, in anticipation for the power up milestone. I must ensure the sensors or solar panel will not exceed an output greater than 3.3v or .5mA as to not damage the Raspberry Pi 3.

The completion of the initial construction has brought me closer to meeting the objectives of the project as defined in the approved approval. Notable upcoming tasks include the completion of the PCB sensor hat fabrication, program the code that will get the data from the sensors/solar panel, establish the database connection, and apply the finishing touches to the hardware.

Completing the PCB sensor hat by Week 7 as outlined by the project schedule will prove to be difficult with my current class schedule and the shortened week due to Thanksgiving. To address this, I plan on spending all the day in the prototype lab on Friday October 14th, 2016.

Financial updates are detailed below, with a brief commentary where significant variances exist from the budget. As a reminder the budget was approved for $261.77. I am currently under budget by $104.40.

* $157.37 has been spent so far. This includes the Raspberry Pi 3 Model B Complete Starter Kit from CanaKit; An Octopus Barometric Pressure Sensor Brick, Electronic Brick DHT11 Humidity/Temperature Sensor, mini photocell light sensor, and 100g lead free solder from Robotshop.com; and lastly, mini solar panel and #22 gauge hook up wire from Sayal Electronics.
* As mentioned in the last status report the motion sensor was removed, subtracting $14.81 from the total
* Components to finish the project (nylon screws, nylon standoffs, shrink tubing) have not yet been purchased.
* $25.08 was saved by taking advantage of a free shipping promotion and ordering the sensors with classmates from Robotshop.com.
* $24.47 was saved by being able to borrow wire strippers and pencil soldering iron from my father.

Here are some hyperlinks that I used in my research:

Raspberry Pi 3 GPIO Pin Layout Diagram – Shows the pin number and names of the Raspberry Pi 3 GPIO pins.  
<http://blog.mcmelectronics.com/post/Raspberry-Pi-3-GPIO-Pin-Layout#.V_sA0iQ_tlw>

DHT11 to Raspberry Pi – A tutorial on how to connect a DHT11 humidity/temperature sensor to a Raspberry Pi. The DHT11 I have purchased is not identical but this was helpful in identifying which GPIO pins to interface with.  
<https://beebotte.com/tutorials/monitor_humidity_and_temperature_with_raspberrypi>

BMP085 to Raspberry Pi – A tutorial on how to connect an Adafruit BMP085 barometric sensor to a Raspberry Pi. The barometric pressure sensor I have purchased is not identical but this was helpful in identifying the Raspberry Pi’s I2C GPIO pins.  
<https://learn.adafruit.com/using-the-bmp085-with-raspberry-pi/overview>

What is Lux  
<https://en.wikipedia.org/wiki/Lux>