Monday, January 22 - Class & after school
What we did:
- **Research a better solution for fixing our code and a way to put graphics on the camera**
- **Derian CADed the grip on the arm of the soil task**

What I learned:
Bailey and I started the researching process. I researched the problem we were having with importing the temperature and pressure variables from their module into our main script. I did this by looking up the error we were having, but I did not find a solution that worked when I tested them.

Friday, January 26 - Class
What we did:
- **I continued researching the problem with our code.**
- **Bates worked on hooking up the backpack he built Thursday.**
- **Derian finished the grip for the soil task and printed it.**
- **Bailey was not here.**

What I learned:
Today I looked to python's main tutorial under the section on modules. I changed my research method from identifying our specific problem thinking we may have made a more broad or fundamental problem in the way our program was structured. Derian is doing good work finishing work that was backlogged either because he needed his license or we had not decided on mounting. Bates' backpack was something I did not know about. I like the idea and am interested to see how it turned out.

BATTERY

EXPERTPOWER®

Established 1987

XP12200   12V20Ah/20HR

Non-Spillable Sealed Lead Acid Battery
Constant Voltage Charge (20°C)

Type	Voltage Regulation	Initial Current
Standby Use	13.50-13.80V	Less than 6.0A
Cycle Use	14.40-14.70V	Less than 6.0A

CAUTION
• Avoid short circuit
• Do not charge in sealed container
• Keep away from sparks and flames
• Rechargeable after use
• Must be recycled or disposed of properly

charge
12.6+   100%
12.5   90%
12.42   80%
12.32   70%
12.20   60%
12.06   50%
11.9   -40%

Saturday, January 27 - Weekend Session

What we did:

- **I fixed the problem with our code getting the temperature and pressure data.**
- **All of us contributed in testing out the 360 camera.**
- **I put the Pi into its case.**

What I learned:

I laughed when I found the answer to our problem with importing because it was such a simple fix. Specifically, I returned all the variables in the module in a list and set the same list in the main code equal to the module. I found the fix by searching for our problem using vocabulary I had learned in my previous research. The rest of the time, I tried putting the pi into the case we had gotten for it. Bates reminded me that the IMU could slide off the pins, and I was able to fit the pi into the case with the IMU sticking out on top. Now, I can help Bailey research a better way to put our data on screen.

```python
    var1 = (1.0 + var1 / 32768.0) * (dig_P1)
    p = 1048576.0 - adc_p
    p = (p - (var2 / 4096.0)) * 6250.0 / var1
    var1 = (dig_P9) * p * p / 2147483648.0
    var2 = p * (dig_P8) / 32768.0
    pressure = (p + (var1 + var2 + (dig_P7)) / 16.0) / 1
    return cTemp, fTemp, pressure
    #return fTemp
    #return pressure


    # Output data to screen
    #print ("Temperature in Celsius : %.2f C" %cTemp)
    #print ("Temperature in Fahrenheit : %.2f F" %fTemp)
    #print ("Pressure : %.2f hPa " %pressure)
```

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O.py ✕ **berryIMU.py** ✕

```python
    #print a new line
    #print ("")

    kalmanX += 6.2
    kalmanY += 4.6
    cTemp, fTemp, pressure = bmp280.main()

    accel = "ACCX " + '{:.4}'.format(AccXangle) + "    ACCY " + '
    gyroa = "\nGRYOX " + '{:.4}'.format(gyroXangle) + "    GYROY
    fang = "\nCFangleX Angle " + '{:.4}'.format(CFangleX) + "
    head = "\nHEADING " + '{:.4}'.format(heading) + "    TCHeadi
    kalman = "\nKalmanX " + '{:.5}'.format(kalmanX) + "    Kalman
    temp = "\nTempC: " + '{:.3}'.format(cTemp) + "TempF: " + '{:.
    press = "\nPressure " + '{:.4}'.format(pressure)
    camera.annotate_text_size = 40
    camera.annotate_foreground = Color('white')
    camera.annotate_text = accel + gyroa + fang + head + kalman +
```

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⊟ Telemetry System One: Analog Sensors and Video (TS1)	12/08/17	02/23/18	Bates, Bailey, Derian	**78d**			In progress	
Full Telemetry Explanation to Nate and Bailey	12/08/17	12/08/17	Bates, Bailey, Derian	**1d**			Completed	
Talk to Frame People for Telemetry and Task Placement	12/11/17	01/26/18	Bates, Bailey, Derian	**47d**			Completed	
Brainstorm and Discuss options for TS1	12/11/17	12/14/17	Bates, Bailey, Derian	**4d**			Completed	
Order All Major Components for TS1	12/15/17	12/15/17	Bates, Bailey, Derian	**1d**			Completed	Makins ordred 1
Assemble the Antennae and Cameras and Test Range	01/04/18	01/08/18	Bates, Bailey, Derian	**5d**			Backlogged	- Derian needs
Design and Assemble Housings for TS1	01/09/18	02/02/18	Derian Svec	**25d**			To Do	
Code the UI for the Telemetry Data	01/04/18	02/16/18	Bailey, Nate	**44d**			In progress	January 18: Firs
Finish and Test System One	02/09/18	02/23/18	Bates, Bailey, Derian	**15d**			To Do	
⊟ Telemetry System Two: 360 Video (TS2)	01/12/18	04/11/18	Bates, Bailey, Derian	**90d**			To Do	
System Brainstorm and Explanation	01/12/18	01/16/18	Bates, Bailey, Derian	**5d**			In progress	
Order Components for TS2	01/18/18	01/22/18	Bates Detwiler	**5d**			In progress	
Test Components	01/22/18	02/09/18	Bates Detwiler	**19d**			To Do	
Design Housings for TS2	02/12/18	02/28/18	Derian, Bates	**17d**			To Do	
Test System	03/01/18	03/09/18	Bates, Derian	**9d**			To Do	
							To Do	
Final Prep and Testing Systems with Rover	03/23/18	04/11/18	Bates, Bailey, Derian	**20d**			To Do	