

HelioStat Control Tracking

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SCHEDULE




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VALIDATION PLAN

Status Indicators	
Completed	
On Schedule/ In Progress	
Behind Schedule	

Task	Deadline	Current Status	
PCB Subsystem		Completed	
Get an understanding of the desired functionality of the PCB	Sept. 28	Completed	
Draw up schematic in Altium	Oct. 5	Completed	
Order components	Oct. 5	Completed	
Design PCB layout in Altium and pass all design rule check tests	Oct. 19	Completed	
Create gerber files and NC drill files to order PCB	Oct. 19	Completed	
Solder on voltage regulator part of the circuit for test for a constant 3.3V output based on a range of input voltages	Nov. 2	Completed	
Assemble the rest of components on the board for final testing and debugging	Nov. 16	Completed	
User Interface / Data Visualization Subsystem		Completed	
Download Android Studio and investigate examples for programming in java	Oct. 5	Completed	
Front End of Android Application 2/4 front end activity pages complete	Oct. 12	Completed	
Front End of Android Application all front end activity pages complete	Oct. 19	Completed	

Prototype Wifi communication on Application for data reading and Investigate Web Server for storage, and research Optometrika	Oct. 27	Completed	
Integrate firebase database through wifi on device	Nov. 3	Completed	
Debug application, test on phone, and programmatically check for wifi connection	Nov. 11	Completed	
Integrate firebase database through wifi and api key on device	Nov. 18	Completed	
Test reading, writing, and simple motor control utilizing database flag section as ISR routine	Nov. 24	Complete	
Tracking Controls Software and Sensor Interface	(Project Member Discontinuation)	(Project Member Discontinuation)	

Performance on Execution Plan:

The performance on the execution plan is as follows. The PCB system design was drawn up, soldered, and tested. The Data Visualization system design was completed, constructed, and tested. The Tracking Controls Software and Sensor Interface was discontinued, as the last teammate was unable to continue with this project. The other two subsystems were followed through execution according to the schedule given in the format above. However, for the data visualization subsystem some advice was given to revise the current organization to an alternative database.

Performance on Validation Plan

The performance on the validation plan is indicated by the status markers in the table above. The tasks involving the two subsystems, PCB and data visualization, were able to be validated according to the plan above. After demoing, a few more tests needed to be run for the PCB subsystem. These tests included testing the noise levels for the voltages as well as testing the voltage with a varying load. Also, the data visualization sub system needs some modification in terms of the database which will be investigated during the break. Additionally, the last subsystem, tracking controls and sensor interface, was not able to be validated by the end of the system. Therefore, there will be more work to be done before integration in the next portion of the project scope.