






SMART SAFETY HELMET

TEAM ONE DOWN



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INTRODUCTION



High Sierra Trail California



VIDEO





RECAP OF VIDEO

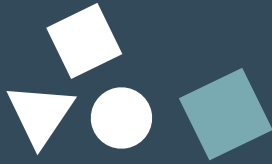
- Helmet recognizes a crash using an accelerometer.
 - Helmet reads GPS data, current location of the user.
 - Processing shows Helmet has detected a crash.
 - Ledstrip and buzzer turn on Helmet
-
- User can kill the lights, beeper, and emergency signal
 - By pressing the kill-switch (button)
 - Button can also act as on-switch

BASIC & ADVANCED PLAN



○ **Basic plan:**

- The basic plan was to make simple and - the most efficient device. The decision fell on LED lights, buzzer, GPS module and accelerometer.



○ **Advanced plan:**

- Advanced plan was to make server and client with processing and internet connection.

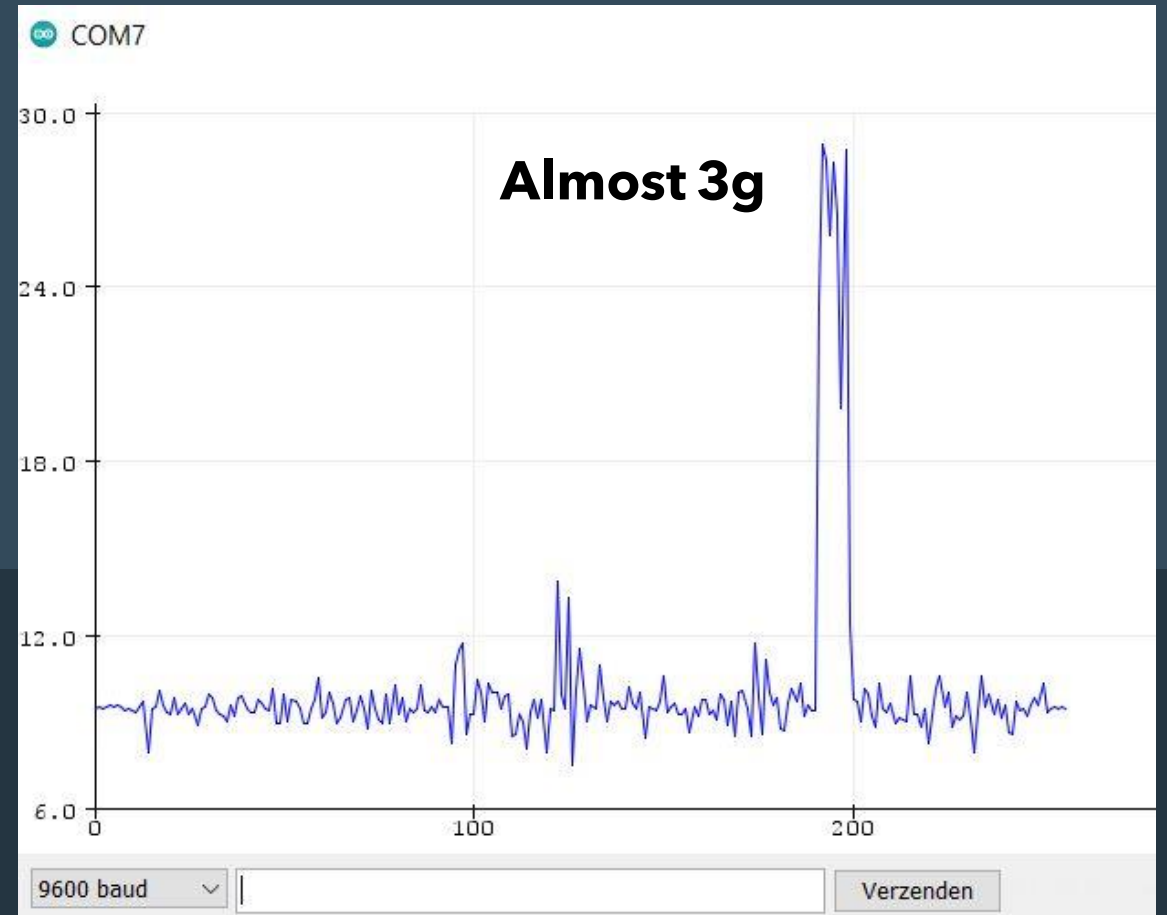
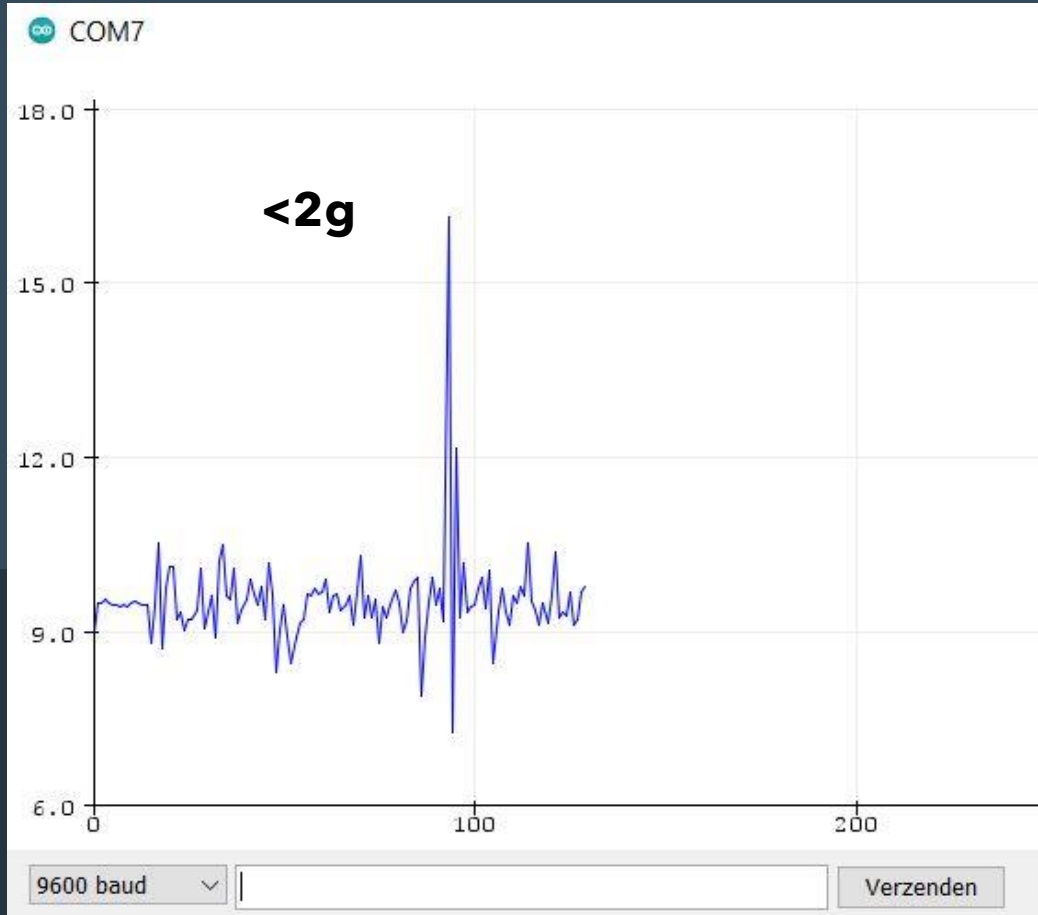


HELMET FEATURES

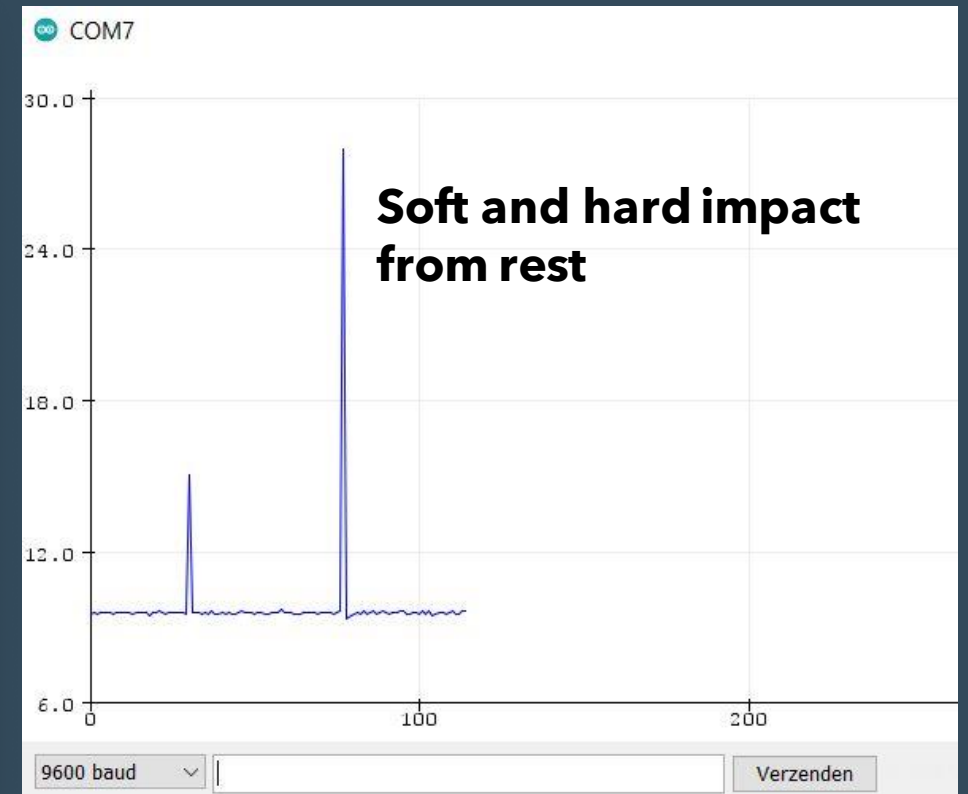
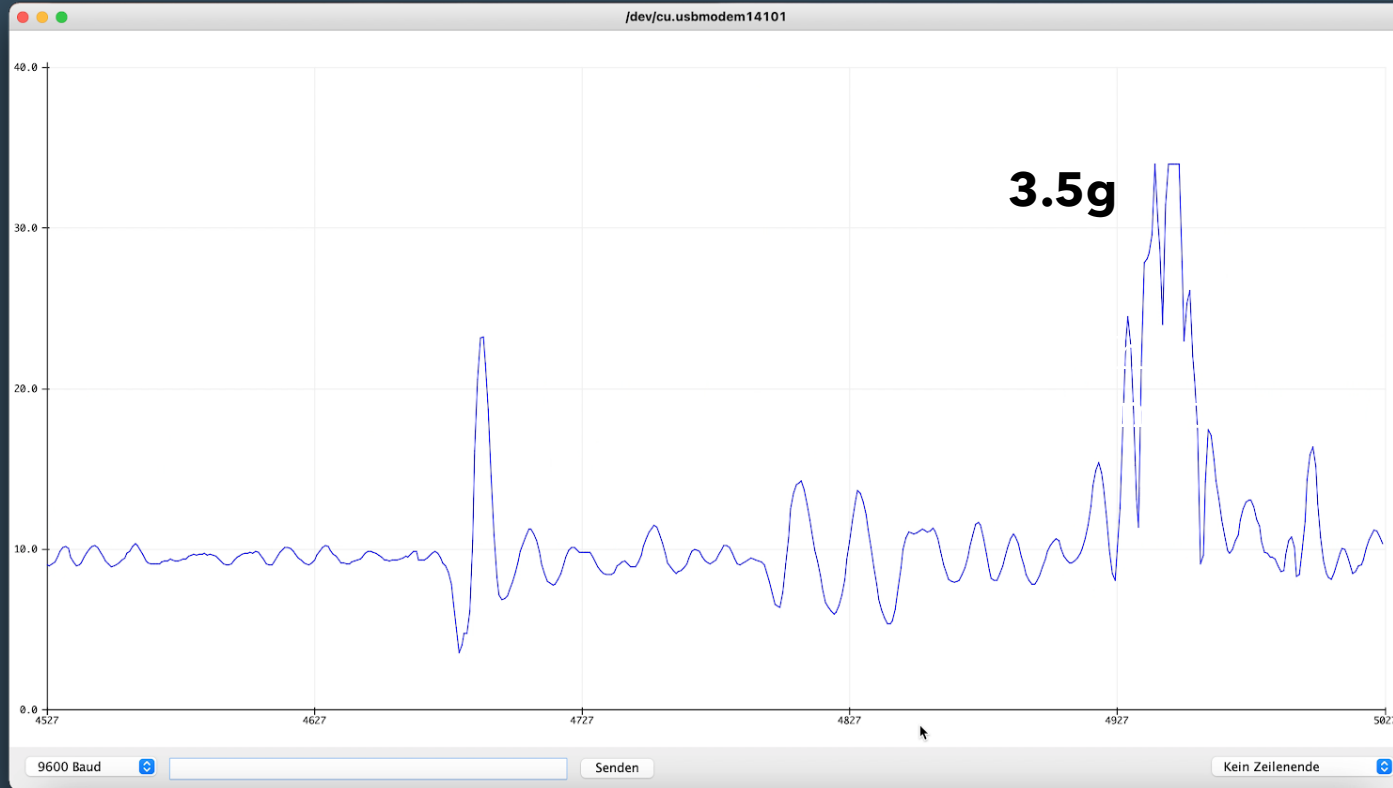
- LED-Strip
- Buzzer
- Adafruit Ultimate GPS Shield
- MPU6050 Accelerometer/Gyroscope
- Killswitch



Testing the accelerometer



Testing the accelerometer



ENCOUNTERED PROBLEMS

- Unreliability off third party modules
 - Difficult to implement in code
 - Do not deliver desired values
 - Setting up equipment takes too long
- Working together in general.
 - A lot of problems one needs to fix on its own.
- Difficulty of combining separate parts of code
 - Caused by working on code from home
 - Codes were not compatible



ERROR
404

The future of the Smart Safety Helmet



- Making a standalone product with wireless communication
- Implementing a higher tolerance accelerometer
- Shrinking down the size of all components to improve helmet protection

CONCLUSION:

what we all learned from the project

- Coding separately in groups is difficult
- Big things can happen in 10 weeks
- Division of tasks needs to be very clear



DISCUSSION

- Tweaking of limits for acceleration for use in different sports
- Recognizing a severe impact, does not mean unconsciousness.
- Wireless
 - Arduino GSM Shield could be included, equipped with SIM card.
 - External battery, of course.

