Introduction:
Lifting weights can oftentimes be an imprecise exercise where the lifter is unable to fully understand the subtle nuances of his lift. This can cause a weightlifter to fail to get as much out of his exercise as possible and on some occasions can be dangerous. If a weightlifter can receive as much information as possible about his exercise he can have a far more efficient and safe workout.

Design Requirements:
Measure,
• Peak velocity
• Peak power
• Peak force
• Average velocity
of a standard Olympic Lift such as a Clean.

Components:
• STML432KC Microcontroller
• MPU 6050 6-Axis Accelerometer/Gyroscope
• SERLCD 16x2 display
• Custom printed circuit board
• Custom designed 3-D printed container

Function:
- User inputs total bar weight, presses start and begins lift
- L432KC waits for sensor values to pass threshold to start and stop timing
- Onboard mathematics are performed
- Results are displayed

Software:
• Written in C code
• I2C protocols to communicate between devices
• Required user input for total weight on bar
• Ability to rotate between 4 measurements
• Use of internal timer and sensor data to achieve all measurements