## Data Integrity over BLE

#### **BLE Transmission**

- Mock JSON data stream from ESP32 was correctly intercepted and processed by iOS app
- Commands sent from iOS were received and processed by ESP32 with <1s latency</li>

```
🍮 BAN: 'LinAcc X:-0.00LinAcc Y:0.02LinAcc Z:-0.24:Syro X:0.06Gyro Y:-0.13Gyro Z:0.13:Roll (Duler X):283.19Pitch (Duler Y):-2.50Yaw (Duler Z):-2.75:Calib Syi:3 Gyro:3 Accel:0 Mag:0'
   🍮 NAME: "Linacc X:-0.09Linacc Y:0.03Linacc Z:-0.23;Gyro X:0.06Gyro Y:0.19Gyro Z:0.00;Roll (Euler X):283,1991tch (Euler Y):-2.59Yow (Euler Z):-2.75;Collb Sys:3 Gyro:3 Accel:0 Mag:0"
  🍮 BAN: "Linkec X:-0.07Linkec Y:0.03Linkec Z:-0.23;Gyro X:0.06Gyro Y:-0.13Gyro Z:0.00;Roll (Euler X):283.19Pitch (Euler Y):-2.50Yow (Euler Z):-2.75;Collib Sys:3 Gyro:3 Accel:0 Mog:0*
  🍮 BANK: "Linkoc X:-0.02Linkoc Y:0.11Linkoc Z:-0.24:Gwro X:0.00Gwro Y:0.00Gwro Z:0.13:Roll (Euler X):283.19*(tch (Euler Y):-2.59*(ov (Euler Z):-2.75;Gallb Svs:3 Gwro:3 Accel:0 Max:0*
  🍮 NAME: "LINACO XI-0.SNLINACO Y/0.0ZLINACO ZI-0.ZA:SWYO XI0.13GWYO YI-0.0GGWYO ZI0.0DING1] (EULOY XXI203.19PIRCH (EULOY YXI-2.50YOW (EULOY ZXI-2.75)(GLUB SVXI3 GWYO:3 ACCOL:0 Meas#"
  🍮 NAME: "Linacc XI-0.07Linacc YI-0.02Linacc ZI-0.23;Gyro XI-0.09Gyro YI-0.09Gyro ZI-0.13;Roll (Euler X):283.19Fisch (Euler Y):-2.59Yow (Euler Z):-2.75;Collib Sys:3 Gyro:3 Accel:0 Mag;0*
  🍮 Malin "Lindon XII-di tali indon V-di dilindon Z-di 22 Goro X-di 18Gres V-di 18Gres Z-di 86 Golf (Golfa XV-28) 18Finch (Foldon VII-2 SWess (Foldon XVII-2 SWess (Foldon XVIII-2 SWess (Foldon XVIII-
  Logged and appended
  🏮 BAN: "Linace XI-8.11Linace YIB.88Linace ZI-8.1816yro XI-8.866yro YIB.316yro ZIB.861901 (Bular X):288.18Piech (Bular Y):-2.58Yow (Bular Z):-2.75;Cellib Syst5 Gyrot3 Accelt8 Mags9"
  BAN: 'Linace X:-0.00Linace Y:0.02Linace Z:-0.25:Syro X:-0.19Syro Y:0.19Syro Z:-0.06:Soll (Sular X):205.19Pitch (Sular Y):-2.59Fpm (Sular Z):-2.75:Solis Sys:3 Syro:3 Accel:0 Money
  🍮 BAN: 'Linkec X:-0.09Linkec Y:0.02Linkec Z:-0.24;Gyro X:0.00Gyro Y:0.25Gyro Z:0.06;Rull (Euler X):203.30Fitch (Euler Y):-2.50Tuw (Culer Z):-2.75;Culib Sys:3 Gyro:3 Accel:0 Mag:0'
  🍮 RAM: 'LinAcc X:-0.0TlinAcc Y:0.0SlinAcc Z:-0.2I;Gyro X:0.06Gyro Y:0.33Gyro Z:0.06;Roll (Euler X):203.39Fitch (Euler Y):-2.59Tow (Euler Z):-2.75;Calib Sys:3 Gyro:3 Accel:0 Mag:8'
 🏮 NAM: 'LinAcc X:-8.13LinAcc Y:0.02LinAcc Z:-0.23;Gyro X:0.13Gyro Y:-0.13Gyro Z:0.06;Roll (Euler X):200.13P(tch (Euler Y):-2.59Yow (Euler Z):-2.75;Colib Sys:5 Gyro:3 Accel:0 Mag:0'
 SAME: "Linker X:-0.50 index Y:0.00 index Z:-0.27:Same X:-0.00 index X
Logged and appended
NAW: 'Linkoc X:-0.12Linkoc Y:0.02Linkoc Y:0.02Linkoc Z:-0.23;Gyro X:0.13Gyro Y:-0.31Gyro Z:0.00;Roll (Euler X):203.19Pitch (Euler Y):-2.59Yow (Euler Z):-2.75;Calib Sys:3 Gyro:3 Accel:0 Mag:0'
 🍮 RAN: 'Linkoc X:-0.00Linkoc Y:0.00Linkoc Z:-0.22:Syro X:-0.00Syro Y:-0.25Syro Z:-0.06:Noll (Euler X):203.150itch (Euler Y):-2.50inm (Euler Z):-2.75:Colib Sys:3 Syro:3 Accel:0 Max:0'
```

# App & System Integration



### **App Integration**

- Performed as intended with mock data sent from ESP32 and mock video data
- Successfully stores session data for squat, bench, and deadlift exercises in database











Setup

**Recording Data** 

Processing

Feedback

RiseVBT

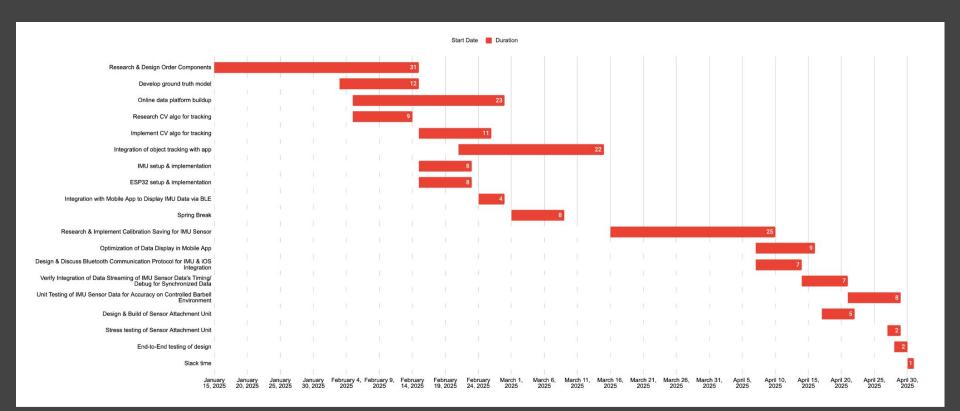




### COMPLETE SOLUTION

What you'll see on demo day

## What Changed?



Stress testing

Visual battery monitor

Balance Visualization

Final Prototype

Remaining Work

Train with Data, Lift with Power.

RiseVBT

