Smart Trailer

**Project**

What is the Smart Trailer?

- Helps those with trailers have a fast, convenient way to use them.
- Actively monitors the tire pressure and alerts the user through an app if low pressure is detected.
- The Smart Trailer will check if all the lights on the trailer are working properly.

**Methods**

- How was the problem solved?
  - Bluetooth Tire Pressure Sensors.
  - Variable Voltage Regulators connected to the RPI's GPIO pins receive the light data.
  - SQL Database actively updates with new information received from the sensors.
  - A web server hosts the data in a JSON format for the mobile application to read.
  - Mobile phone application actively checks for updates and displays current information.
  - Bluetooth Sensors: Python script to read Bluetooth data and decode into PSI.
  - Light Data: Using a Python script, GPIO pins are monitored for changes.
  - Mobile Application: Built with React Native to allow simultaneous iOS and Android development.

**System**

**Conclusion**

- Results
  - Our solution efficiently shows the status of the trailer
  - It is simple to install and set up

- What did we learn?
  - How to work as a team
  - The Bluetooth protocol
  - Web protocols and JSON formatting
  - Python scripting

- The Future?
  - Add sensors to display if the trailer is hitched correctly
  - Add support for more trailer adaptors