**Asset tracking and health measurement (perishables)**

Tracking fruits during transportation, it's crucial to ensure that the environmental conditions are suitable for preserving their freshness and preventing spoilage. Our tacking device will be securely mounted within the transportation container to avoid damaging goods during transit.

We will configure the Raspberry Pi and system to start automatically when power is supplied. The temperature and humidity sensors and GPS will both be strategically among the fruits to monitor the ambient conditions. The gas sensor also detects any harmful gasses that could accelerate fruit spoilage. The RFID tags will be placed on each container of fruits to keep track of the quantities of the fruits.

**Data Logging and Storage**

· We will create a database to store the data collected from the sensors. For real time monitoring and analytical purposes.

· We will ensure that the data logging script captures real-time information about temperature, humidity, gas levels, and demographics of the goods in transit.

**Real-time Geolocation and Condition Monitoring:**

· We will Implement the GPS tracking to monitor the exact location of the fruits during transportation. This data will not only be utilized to know where abouts of the products but also to analyze the demographics.

· We will utilize the camera to capture images of the fruits periodically, allowing for visual inspection of their condition before, during and after transit.

**Alerts and Notifications:**

· We will configure the system to send alerts if the temperature, humidity, geo location, or gas levels deviate from the acceptable range.

· We will set up notifications to alert relevant personnel if the transportation route deviates or encounters unexpected delays.

**Quality Control and Inspection:**

· We will develop image processing algorithms to analyze the condition of the fruits based on the images captured by the camera. We will also Integrate algorithms that can detect any physical damage or signs of decay in the fruits.

**Testing and Optimization:**

· We will also simulate various transportation scenarios to test the system's functionality and reliability under different environmental conditions. With data that is collected we will continuously optimize the system to ensure that it effectively maintains the desired conditions for preserving the quality of the fruits.

**Documentation and Training:**

· We will document the entire setup process, including sensor placement, data logging, and maintenance procedures.

· We will also provide training to personnel involved in handling and monitoring the system to ensure its proper use and maintenance.