# Definitions

* *User: People that are working at/employed at the residence at which the hand sanitizers are deployed. Users will wear a wristband*
* *Executive: People that oversee the workforce and responsible for ensuring reduced risk of infection spread, CEO/leadership positions.*
* *RFID: Radio frequency Identification, used for wireless close-range communication.*
* *RFID Wristband: can be a unique RFID identifier that holds the name/employee\_ID of the user. This can be on wristband/keychain format*

# Components

* RFID Identifier
* RFID wristband
* Hand Sanitizer Housing
  + Houses the Pump, Identifier, Micro-controller
* Hand Sanitizer Pump
* (Wi-Fi enabled) Micro Controller
* Web Server
* Website

# Functions

* **User** wears *RFID wristband* with unique identifier differentiate them from other employees.
* To dispense hand sanitizer **User** will scan *RFID wristband* at the *RFID identifier* the Sanitizer Pump will dispense the liquid.
* The *Wi-Fi enabled Micro Controller* will transfer the data from the *RFID identifier* to a webserver to collect data on which **User** was sanitizing.
* *Web Server* Will calculate the time/dates of sanitation server-side.
* *Web Server* Will have interactive dashboard where sanitization data is viewable in a useful format for **Executives**.

# Functional Requirements

* RFID wristband must be unique for all **users**,
* RFID identifier must distinguish between separate **users**,
* Micro-Controller must be able to send data to a webserver,
* Webserver must be able to process data visually into charts which the **Executives** can use to see the number of employees sanitizing hands.
* Website must have risk-based assessment that can be compiled and reported in a simple format for displays.

# Non-Functional Requirements

* Webserver must be optimized to handle multiple requests at once.
* Must be able to differentiate between different geographical locations as to see if different departments perform worse.
* Must be able to categorize the different **Users** per department
* **Users** must have accounts/logins to see how high of a score in sanitizing they have obtained.
* App will be available to download to **Users** which will display scores on the fly.
* RFID information is encrypted as to not let **Users** mimic signals when sanitizing.

# System Architecture

Diagram

Description automatically generated

# Minimal Viable Product

* RFID Identifier must be able to differentiate between different tags.
* Microcontroller must be able to upload information obtained by RFID identifier to the web server.
* Webserver must be able to at least collect information from several different either simulated sources or actual RFID tags and store it with date/time and name of employee.