1. main.py:

This file should be stored on the Raspberry Pi, which is connected to the antenna and GPS sensor. The Raspberry Pi will act as the edge device for collecting and processing the real-time data. The file can be stored in a dedicated directory on the Raspberry Pi, such as `/home/pi/heatmap\_project/main.py`.

2. visualize\_heatmap.js:

This file is a JavaScript file that will be used to generate the heatmap on a web interface, such as a dashboard or a web page. It should be stored in the web server's directory, where the web application is hosted. For example, if the web application is hosted using Node.js, the file can be stored in the `public` directory of the Node.js application.

Architecture and Structure:

- The `main.py` file is responsible for collecting real-time data from the antenna and GPS sensor, processing the data, and then sending it to the MQTT broker for further analysis and visualization.

- The `visualize\_heatmap.js` file is used to generate the heatmap on a web interface using the Google Maps JavaScript API. It fetches the data from the CSV file and creates the heatmap layer on the map.

Code Algorithms:

- The `main.py` file uses the `paho.mqtt.client` library to connect to the MQTT broker and subscribe to the topic for WiFi signal strength data. It then processes the received data, saves it as a CSV file.

- The `visualize\_heatmap.js` file uses the `fetch` API to retrieve the data from the CSV file and the Google Maps JavaScript API to create the heatmap layer on the map.