

Infrastructure and Data Gathering Scenario For Global Environmental Recorder (GER)

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The first release of Global Environment Recorder will focus on creating the infrastructure for the application. This includes getting arduino parts needed for recording the CO₂, temperature, humidity, and other air quality diagnostics. The goal of Global Environment Recorder is to help people in Chicago better track the quality of the air they are breathing. The goal is to provide many weather monitoring subnodes to weather companies by providing them data on hyperlocal areas, neighborhoods, parks, and indoor environments. The goal at large here will be to expand on large, already existing weather station nodes to drill down on the environment quality in specific areas.

Scenario “Data Gathering”

To gather the data needed for the project, the Arduino needs the components that could allow it to record data required for the project. After getting the components, the Arduino will connect to the components and gain the data from these components. The data collected from the arduino subnodes will be uploaded via the internet to a web server or database which will then be accessible via an api to report data on any front end website.

This collected data will be added to a database with a way to identify which arduino the information is coming from. The front end will be able to access this information to show it to the user. Database will store measured levels of CO₂, temperature, humidity, and other air quality levels that a user might find useful. And the front end for scenario one will solely be responsible for displaying that data in real time.

Scenario “Infrastructure”

The application will need a front end for the user to track the air quality of a specific area's air quality. For the first release the front end will be configuring Arduinos to communicate with a web host / database remotely via a simple internet connection. Then, a front end interface will be required to be able to manipulate, record, and present data from the arduino subnodes.

The user will be able to see the air quality levels measured by the Arduino subnodes as a representation on a map, similar to google maps. The map should contain nodes with information about that area. These nodes will be placed on the map using a geolocation tag on the device, for

example, a GPS module which will report the lat / long of the device in order to place it on the map.

Front end example:

