IOT\_PHASE2

ENVIRONMENTAL MONITORING

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Environmental monitoring is the most beneficial IoT application. It uses advanced sensor devices to identify the presence of pollutants in the air and water and promotes better sustainability. You can keep the premises safer and cleaner by utilizing a smart environmental monitoring solution.

An IoT powered environmental monitoring solution is a tool to assess the surrounding’s safety. Closed space areas like offices, homes, warehouses, museums can be monitored with the help of this smart solution.

It is skillfully developed to reduce the workload, detect the presence of pollutants, and obtain real-time information about the surroundings, while keeping up with safety and health protection. The solution aims on improving your well-being and work efficiency to further enhance overall productivity.

A smart environmental monitoring system gives you the benefit of maintaining a proper record of the ambiance for a personalized experience.

To visualize historical temperature and humidity trends, you can create line graphs or time series plots. Here’s a general approach to incorporate data visualization:

**1.Data Collection:**

Gather historical temperature and humidity data from a reliable source, such as weather stations or databases.

**2.Data Preparation:**

Organize the data into a structured format with columns for date, temperature, and humidity.

**3.Select a Visualization Tool:**

Choose a data visualization tool or library suitable for your needs. Common choices include Python libraries like Matplotlib, Seaborn, or web-based tools like Tableau or Google Data Studio.

**4. Create Line Graphs:**

* For temperature trends, plot the temperature data against the timeline (date) on the x-axis and temperature values on the y-axis.
* For humidity trends, use a similar approach but plot humidity values on the y-axis.

**5.Time Series Analysis:**

Consider using smoothing techniques like moving averages or trendlines to highlight long-term trends in the data.

**6. Customization:**

* Label your axes with appropriate units and titles.
* Use colors and legends to differentiate between temperature and humidity lines if necessary.
* Add annotations or markers for significant events or points of interest, like record highs or lows.

**7. Interactivity(if applicable):**

If you’re creating an interactive visualization, you can allow users to zoom in on specific time periods or toggle between different data sets.

**8. Export/Share:**

Save or export your visualization in a format suitable for your intendent audience, whether it’s a report, presentation, or an online dashboard.

Remember that effective data visualization should make it easy for viewers to understand the trends and patterns in your data. Consider your audience and their level of expertise when designing your visualization.