**AIR QUALITY ANALYSIS IN TAMILNADU**

**PROBLEM STATEMENT:**

Air pollution is a major problem in TamilNadu, India. It is estimated that air pollution causes over 10,000 deaths in the state each year. Air pollution can also cause a range of other health problems, such as respiratory infections, heart disease, and cancer.

There is a need for a comprehensive system for air quality analysis in Tamil Nadu. This system should be able to collect, process, model, visualize, and forecast air quality data. The information generated by the system can be used to protect the health and well-being of the state's residents.

**DESIGN THINKING:**

Design thinking is a human-centered approach to innovation that can be used to solve complex problems. It is a non-linear, iterative process that involves the following five steps:

1. \*Empathize:\* The first step is to understand the needs and experiences of the people who will be affected by the problem you are trying to solve. This can be done through interviews, focus groups, and surveys.

2. \*Define:\* Once you have a good understanding of the problem, you need to define it clearly and concisely. This will help you to focus your efforts and develop effective solutions.

3. \*Ideate:\* The third step is to generate a wide range of ideas for solving the problem. This can be done through brainstorming, sketching, and prototyping.

4. \*Prototype:\* Once you have a number of ideas, you need to develop prototypes of them. This will allow you to test your ideas and get feedback from others.

5. \*Test:\* The final step is to test your prototypes with the people who will be affected by the problem. This feedback will help you to refine your solutions and ensure that they are effective.

**APPLYING DESIGN THINKING FOR AIR QUALITY ANALYSIS:**

Air quality analysis in Tamil Nadu is important for protecting the health and well-being of the state's residents. Air pollution can cause a range of health problems, including respiratory infections, heart disease, and cancer. It can also damage the environment.

This document proposes a framework for air quality analysis in Tamil Nadu. The framework consists of the following modules:

1. Data collection and preprocessing: This module will collect data from various sources, such as government monitoring stations, satellite imagery, and citizen sensors. The data will then be preprocessed to ensure that it is consistent and of high quality.
2. Air quality modeling: This module will use the preprocessed data to develop air quality models. The models will be used to predict air quality levels at different locations and times.
3. Air quality visualization: This module will visualize the air quality data and model predictions in a user-friendly way. The visualizations will be used to communicate air quality information to the public and policymakers.
4. Air quality forecasting: This module will use the air quality models to forecast air quality levels for future days. The forecasts will be used to help people plan their activities and protect themselves from air pollution.