**Dataset Preparation**

**References for Parameter Ranges:**

1. **Government and Research Institutions**:
   * [India-WRIS (Water Resources Information System)](http://indiawris.gov.in): For parameters like salinity, turbidity, and dissolved oxygen.
   * Central Pollution Control Board (CPCB): For pollution-related data like ammonia nitrogen, phosphates, and nitrates.
   * [National Institute of Oceanography (NIO)](https://www.nio.org/): For data on Indian marine ecosystems and chlorophyll concentration.
2. **Global Databases**:
   * [NOAA (National Oceanic and Atmospheric Administration)](https://www.noaa.gov/): For sea surface temperature and marine data patterns.
   * UNEP Coral Data: For coral health-related metrics.
3. **Scientific Literature**:
   * Studies on Indian coastal water quality, coral reef health, and environmental impacts from journals and research papers (some of which were reviewed in the minor project).
4. **Synthetic Data Techniques**:
   * The dataset was enhanced by generating realistic distributions for each parameter using Python libraries (numpy and pandas), simulating natural variations seen in real-world data.