1) Datasets Detail:

The datasets contain the following features:

- The datasets contain measurement of water flow for a year from 4 different outlets.
- Every measurement is taken in a 6 hours gap
- The date when the data is measured.
- The time of the measurement
- The name of the outlet from which it was measured
- The water flow in cubic metres and in litres

2) Algorithms Used:

ResNet-18 is a convolutional neural network that is 18 layers deep. You can load a pretrained version of the network trained on more than a million images from the ImageNet database. The pretrained network can classify images into 1000 object categories, such as keyboard, mouse, pencil, and many animals. As a result, the network has learned rich feature representations for a wide range of images. The network has an image input size of 224-by-224.

3) Future Works:

1. **Operational Assessment of Water Motors**:
    - Evaluating the efficiency and maintenance requirements of water motors.
    - Identifying areas for improvement in motor performance to optimize water distribution.
2. **Optimization of Water Storage**:
    - Analysing ways to reduce water stagnation in storage tanks, particularly for drinking water.
    - Ensuring improved water quality and sustainability through better storage practices.
3. **Broader Scalability**:

- Extending the application of the proposed system to larger and more diverse water distribution networks.
- Addressing the challenges of integrating the system into more complex environments.

4. **Enhanced Data Analysis**:
    - Investigating additional factors affecting water consumption patterns.
    - Applying advanced analytical models to derive deeper insights into behavioural trends.
5. **Automation and System Expansion**:
    - Enhancing automation in the detection and correction processes to reduce manual intervention.
    - Expanding the network to include more IoT-based retrofit meters for comprehensive monitoring.