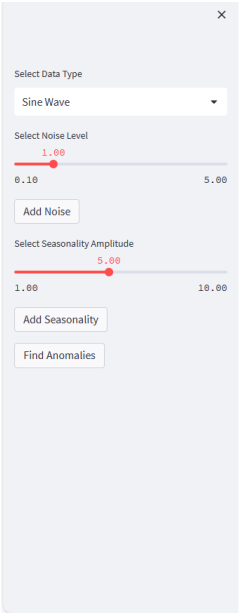
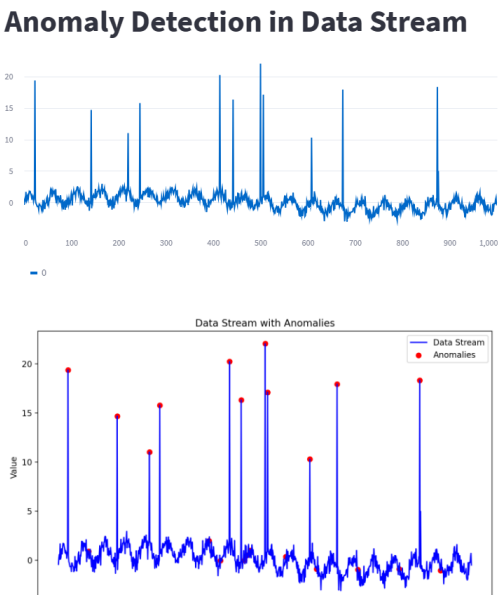
Algorithm Selection: Here, I used seasonal trend decomposition using LOESS (STL) for seasonality and trend detection combined with a simple statistical method like the Z-score for anomaly detection (Taken Z-threshold = 3). Here, I can also use ANN and Autoencoders for this purpose, but these cannot perform well for seasonal data.

Data Stream Simulation: I created a function that can generate Linear, Sine-Wave, and Random-Walk type data with handy noise to detect anomalies

Visualization: For visualization, I used a Streamlit library as it can provide a nice UI; here, I added some tabs to change the data stream(e.g. Linear, Sine, Random) and also added features to increase and decrease seasonality and noise to detect anomalies.





For this tool you can refer to this network URL : http://10.145.117.60:8501
If it does not work pls, follow this procedure :

1. Install my requirement file (all libraries that are mentioned)
2. Download my main.py file and save to a desired location
3. Open your CMD and go to the folder where your file is saved
4. run this command : **streamlit run <filename>.py**

Afterwards you will be able to see this nice visualization tool, it consist of many data stream noise adding features

If you are not able to perform above step :
I am also adding a **main.ipynb** file which consists of code after running the python code you are just able to detect and see atleast one visualization.