**Purpose / Topic:**

**We want to exam if machine learning (ML) models could improve the returns of using technical indicators (technical trading strategies) to trade stocks.**

**Data:**

**In order to include the sentiment indicator, multiple sources of news have been examined, such as NEWS API, Returns. And we have made the decision to choose 2019-1-1 to current as the time frame for downloading stock data from the YAHOO FINANCE, and news data from Financialmodelingprep for this project. As the maximum free news are only available for this period.**

**Data Cleaning:**

1. **Stock data from YAHOO FINANCE is clean.**
2. **For the News data, we have removed characters that are not letters, punctuations, and stop words. The cleaned title and text have been consolidated into “content” columns to be further analyzed via Vader.**

**Check Imbalanced Data for Stock Returns：**

