School of Computer Science Engineering and Technology

|  |  |
| --- | --- |
| Course- B**. Tech** | Type- Specialization Elective |
| Course Code**- CSET369** | Course Name- **Time Series Analysis** |
| Year- **3rd Year** | Semester- **VI** |
| Date- **Week-1** |  |

**Lab Assignment -1**

|  |  |  |  |
| --- | --- | --- | --- |
| Experiment | CO1 | CO2 | CO3 |
| Python Libraries for Time Series Analysis |  |  |  |

**Objective: To learn basic python libraries related to Time Series Analysis. To plot time series data for identifying the trends and seasonal effects.**

**1:** Install the following time series analysis packages in python.

* Tsfresh (<https://tsfresh.readthedocs.io/en/latest/>)
* Autots (<https://pypi.org/project/AutoTS/>)
* Darts (<https://unit8co.github.io/darts/>)
* Prophet (<https://facebook.github.io/prophet/docs/quick_start.html>)

**2:** Download the following time series dataset and read them as a python dataframe and print the heads.

* Air Passengers (<https://www.kaggle.com/rakannimer/air-passengers>)
* Daily Climate time series data (<https://www.kaggle.com/datasets/sumanthvrao/daily-climate-time-series-data>)
* Daily Temperature of Major Cities ([https://www.kaggle.com/datasets/sudalairajkumar/daily-temperature-of-major-](https://www.kaggle.com/datasets/sudalairajkumar/daily-temperature-of-major-cities) [cities](https://www.kaggle.com/datasets/sudalairajkumar/daily-temperature-of-major-cities))
* Stock Market Data ([https://www.kaggle.com/datasets/rohanrao/nifty50-stock-](https://www.kaggle.com/datasets/rohanrao/nifty50-stock-market-data) [market-data](https://www.kaggle.com/datasets/rohanrao/nifty50-stock-market-data))

**3:** Install plotly package for working with time series plotting and analysis.

**4:** Write python program for plotting line chart and area chart for Air Passenger data.

**5:** Write program for plotting multivariate data (Previous day's close price, Previous day's close price, Highest price in day, Lowest price in day) in stock Market Data.