**SMU-MSDS-6373-Time Series-Live Session Assignment**

**By-Rashmi Patel**

**UNIT-1: STATIONARITY**

1. **For live session, find an example of time-series data. We will work with this data set throughout this lesson. For now, simply find a data set and make sure it is in CSV format. (You may need to work at this a bit.)  
     
   Write a brief one- to three-sentence description in the Google Doc provided by your instructor.**

**Description:** This is a time series dataset which is about the mean temperature recorded in Delhi, India from **1st January 2013** to **24th April 2017. The dataset is publicly available in Kaggle (**<https://www.kaggle.com/datasets/sumanthvrao/daily-climate-time-series-data> **)**

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Description automatically generated

1. **In your data set, identify x1, x2, x3, and add it to your Google Doc entry under the description.**

X1=10.00

X2=7.40

X3=7.16 and so on.

1. **Using your time series that you selected, would you be able to obtain another realization? Discuss in one or two sentences, and add it to the Google Doc.**

No, I am not clear what it is asking for.

1. **With respect to your time series, does it appear that the assumption of constant mean of the distribution of each Xt is reasonable?  Discuss why or why not in one or two sentences, and place on the Google Doc.**

The assumption that -Mean does not depend on time seems to be met.

1. **With respect to your time series, does it appear that the assumption of constant variance of the distribution of each Xt is reasonable?  Discuss why or why not in one or two sentences, and place on the Google Doc.**

The assumption that -Variance does not depend on time seems to be met.

1. **Provide the ACF for your time series. Is your time series stationary? Discuss in a few sentences on the Google Doc.**

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Looking at the ACF, it appears that the data seems to be violating the autocorrelation assumption.

1. **Provide a slide or slides for your Key Takeaways for Unit 1!  Provide a slide or slides for any questions or comments you have from this section. This could also include topics you would like to have specifically addressed in live session! There is no minimum or maximum here.**

Key concepts to are for Unit 1-Stationarity:

Realization

Expected Value

Stationarity and assumptions

Autocorrelation

Weak Stationary Process

Independence in tswge

**UNIT-2:**

**UNIT-3:**

**UNIT-4:**

**UNIT-5:**

**UNIT-6:**

**UNIT-7:**

**UNIT-8:**

**UNIT-9:**

**UNIT-10:**

**UNIT-11:**

**UNIT-12:**

**UNIT-13:**

**Google Doc Link:** <https://docs.google.com/document/d/1kDOwb1ZgxlRmtDYxfTqCkGUJkVhzVjqM/edit?usp=sharing&ouid=114962594759186814140&rtpof=true&sd=true>