



DSBA CURRICULUM DESIGN

FOUNDATIONS

Data Science Using Python

Statistical Methods for Decision Making

CORE COURSES

Advanced Statistics

Data Mining

Predictive Modelling

Machine Learning

Data Visualization

SQL

Time Series Forecasting (Week-1/4)

DOMAIN APPLICATIONS

Finance and Risk Analytics

Marketing and Retail Analytics



LEARNING OBJECTIVE OF THIS COURSE

- Time Series Analysis
- Time Series Forecasting
 Introduction to Forecasting
- ARIMA Models





LEARNING OBJECTIVES OF THIS SESSION

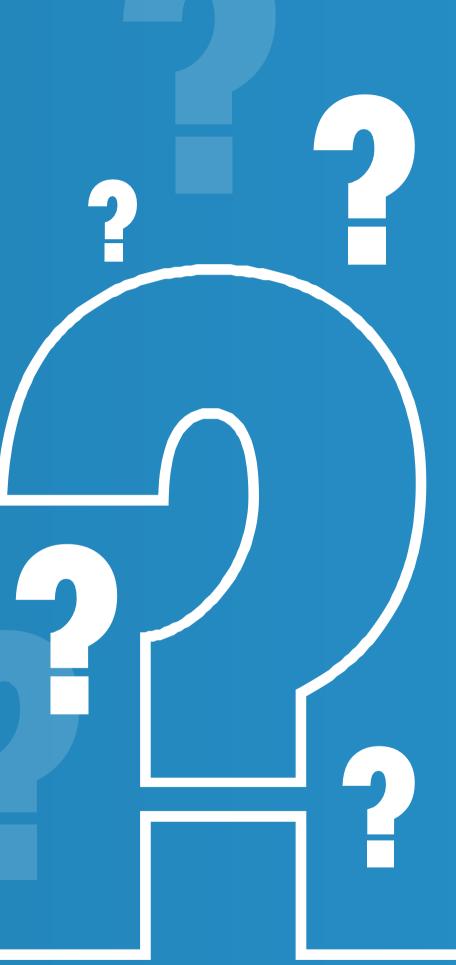
- Time Series Analysis A descriptive view of Time Series
- Exploratory Data Analysis for Time Series data

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TRY ANSWERING THE FOLLOWING

• If the Time Series data has missing values, we are allowed to drop those data points from our analysis. – True or False? Discuss.

 The residuals in a decomposition of a Time Series gives us the idiosyncratic part of the series which is not picked up by the Trend and Seasonality. – True or False?





Industry Application – Predicting Stock Prices

Time Series Forecasting procedures are used to predict stock prices or sales. Till now we have seen how to predict sales using cross-sectional data but not Time Series.

The following is the stock price data of Tesla from the year of 2017. Sophisticated Time Series Forecasting models are used to predict stock prices.* We can also attempt to describe the this particular Time Series using the methods learnt in this week's video lectures.

date	close	volume	open	high	low
2017/11/17	315.0500	13720830.0000	325.6700	326.6700	313.1500
2017/11/16	312.5000	5794409.0000	313.9900	318.1400	311.3000
2017/11/15	311.3000	5951835.0000	306.0100	312.4900	301.5000
2017/11/14	308.7000	5661904.0000	315.0000	316.3500	306.9000
2017/11/13	315.4000	7565242.0000	300.1300	316.8000	299.1100

Data Taken from Yahoo Financ

^{*} We will also look at using Time Series as a forecasting tool in the upcomingweeks.



CASE STUDY- Analysing Beer Production in Australia

"Prediction is difficult, especially about the future."

Keeping the above statement in mind, we will analyse the data and try to understand the production of Beer across various years in Australia. We will use the descriptive statistics measures to do so. We will also do a plot of the Time Series, decompose the Time Series data and try to understand how beer production has changed over the past years.





ANY QUESTIONS





Apply Data Science at your workplace to gain some instant benefits:

- Get noticed by your management with your outstanding analysis backed by data science.
- Create an impact in your organization by taking up small projects/initiatives to solve critical issues using data science.
- Network with members from the data science vertical of your organization and seek opportunities to contribute in small projects.
- Share your success stories with us and the world to position yourself as a subject matter expert in data science.



