

## **Assignment 1 - DATA266**

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### **1. What are autoregressive models? Provide real-world examples. (5 points)**

Autoregressive models are a type of statistical model used to predict future values based on past values. The basic idea here is that the next value in a sequence depends on some number of previous values. These models are often used in time series forecasting.

Real-world examples:

1. Weather Forecasting – Predicting tomorrow's temperature using temperatures from the past few days.
2. Electricity Consumption – Forecasting future electricity usage based on past hourly or daily usage data.
3. Sales Forecasting – Estimating next month's product sales using sales data from previous months.
4. Currency Exchange Rate Forecasting – Predicting the value of a currency tomorrow using its historical values.
5. Social Media Engagement – Predicting how many likes or shares a post will get based on the pattern from previous posts.