**Experiment 3**

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| **Date:** |  |
| Aim | **Autoregression Models for Time Series Forecasting with Python** |
| Software | Colab |
| Pre-requisite | Internet and required dataset |
| Theory | Autoregressive (AR) models, which are used for text generation tasks and time series forecasting, can be employed to predict future values predicated on previous observations. This blog post will provide the concepts of autoregressive (AR) models with Python code examples to demonstrate how you can implement an AR model for time-series forecasting. Note that time-series forecasting is one of the important areas of data science/machine learning. In subsequent blogs, we will take up the topic of how autoregressive models can be used as generative model for text generation tasks.  For beginners, time-series forecasting is the process of using a model to predict future values based on previously observed values. Time-series data is a sequence of data points, typically ordered in time. Forecasting models usually make predictions at regular intervals, such as hourly, daily, or weekly. Machine learning can be used to develop time-series forecasting models. This type of model is trained on past data and can be used to make predictions about future events. Time series forecasting is a valuable tool for businesses that can help them to make decisions about future production, staffing, and inventory levels. It can also be used to predict consumer demand and trends.  As mentioned above, autoregressive models can be utilized for text generation tasks, where the prediction of the next word depends on the words that have come before it. This sequential nature of the autoregressive models makes them particularly useful in fields like natural language processing.      https://i0.wp.com/vitalflux.com/wp-content/uploads/2021/03/time-series-forecasting-autoregressive-model.jpg?fit=300%2C167&ssl=1 |
|  |  |
| Result |  |
| Conclusion | Write your detail understanding about the experiment. |