

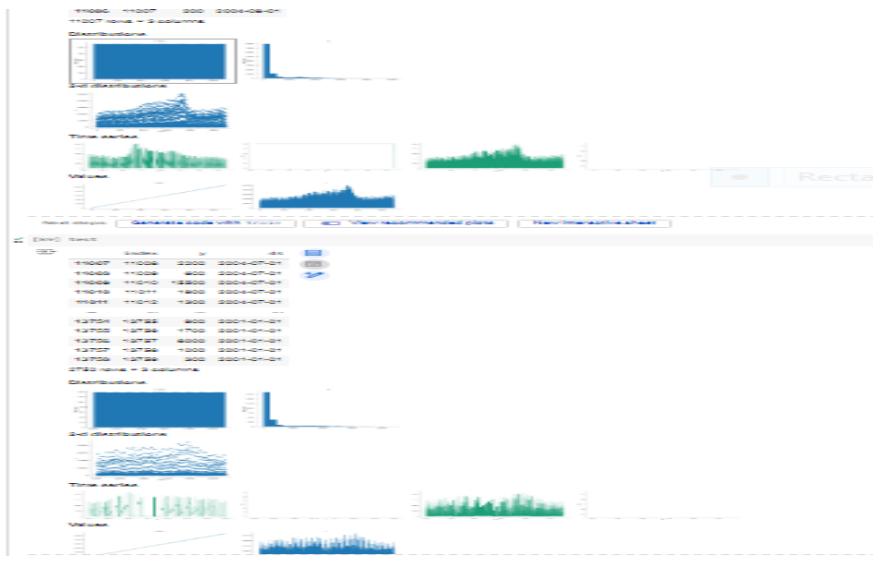
Model Development Phase Template

Date	01 December 2024
Team ID	Faculty
Project Title	Unemployed Insurance Beneficiary Forecasting
Maximum Marks	5 Marks

Model Selection Report

In the model selection report for forecasting and time series projects, various architectures, such as ARIMA, SARIMA, AUTO REGRESSION, PROPHET, will be evaluated. Factors such as performance, complexity, starting and ending parameters and computational requirements will be considered to determine the most suitable model for the task at hand.

Model Selection Report:

Model	Description
ARIMA	<p>The ARIMA (Auto Regressive Integrated Moving Average) model is a statistical forecasting model that uses a combination of autoregressive, differencing, and moving average components to forecast future values. ARIMA models are denoted as ARIMA(p, d, q), where p, d, and q represent the number of autoregressive terms, degree of differencing, and moving average terms, respectively. By accounting for trends, seasonality, and residuals, ARIMA models provide accurate and reliable forecasts for time series data.</p> 

SARIMA

The SARIMA (Seasonal ARIMA) model is an extension of the ARIMA model that incorporates seasonal components to account for periodic patterns in time series data. SARIMA models are denoted as SARIMA(p, d, q)(P, D, Q), where the first set of parameters represents the non-seasonal components and the second set represents the seasonal components. By incorporating seasonal components, SARIMA models provide more accurate forecasts for time series data with strong seasonal patterns.



Prophet

Prophet is an open-source software for forecasting time series data, developed by Facebook, that is based on a generalized additive model and can handle multiple seasonality and non-linear trends. Prophet uses a combination of linear and logistic functions to model the trend and seasonality of the data, and can also incorporate external regressors and holiday effects. Prophet is known for its ease of use, flexibility, and scalability, making it a popular choice for forecasting time series data in a variety of industries.

