Legal Aid Ontario (LAO) is responsible to provide legal services for eligible Ontarians, which are fully funded by the government. Ontarians needing legal services submit an application and LAO, after confirming the eligibility, opens a case and estimates the potential cost of that case. Lawyers who are representing the clients submit their invoices as they go through the cases to be paid by LAO. Cases may take a while to start and usually will 1 to 5 years to complete, depending on their complexity.

Recently, government has asked LAO to forecast its fiscal year’s expenditures (One fiscal year start from April 1st to March 31st of the next year), so they can have a better understanding of the required budget for next year. LAO starts its business plan for next year, from mid-year, which means a forecasting model to predict the following 18 months of expenditures is needed. Historical data from April 1st, 2011 to Feb 28th, 2025 is available. It includes the monthly payment to the lawyers “TOT\_PAID” as the target factor and also a few supporting factors (like Number of cases) as the potential featuring factors.

The task is implementing Python and Machine Learning techniques to analyze the historical trend of target factor (monthly expenditure) as well as the depending on factors and fit a multivariate time series forecasting model that predicts data as accurate and possible, then provide at least 18 months of future forecasts (18 data points), so it includes one full year of expenditures forecast.