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Predicting U.S. Mortgage Trends: Insights for Homeowners and Policymakers

Imagine you're a data scientist working to help potential homeowners navigate the uncertainties of the housing market. Your role is to analyze historical mortgage rate data, uncover trends, and forecast future rates to provide insights that will help buyers make informed decisions. Additionally, your analysis will serve as a valuable tool for policymakers, offering data-driven perspectives on how to shape housing market regulations and support affordable homeownership.

In this case study, you'll dive into real-world data provided by Freddie Mac, preparing it for analysis by cleaning and preprocessing the information. You'll then apply advanced time series forecasting techniques, more specifically, the SARIMA model, to predict future mortgage rates. As you evaluate the performance of your model using metrics like Mean Squared Error, you'll gain valuable experience in translating raw data into actionable insights that can potentially shape housing policy and empower your consumers to make smarter financial decisions.

Your task is to provide reliable, forward-looking predictions based on historical mortgage data, presenting your findings in a way that will guide homeowners and policymakers through an increasingly complex housing landscape.